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Psychedelic humanities

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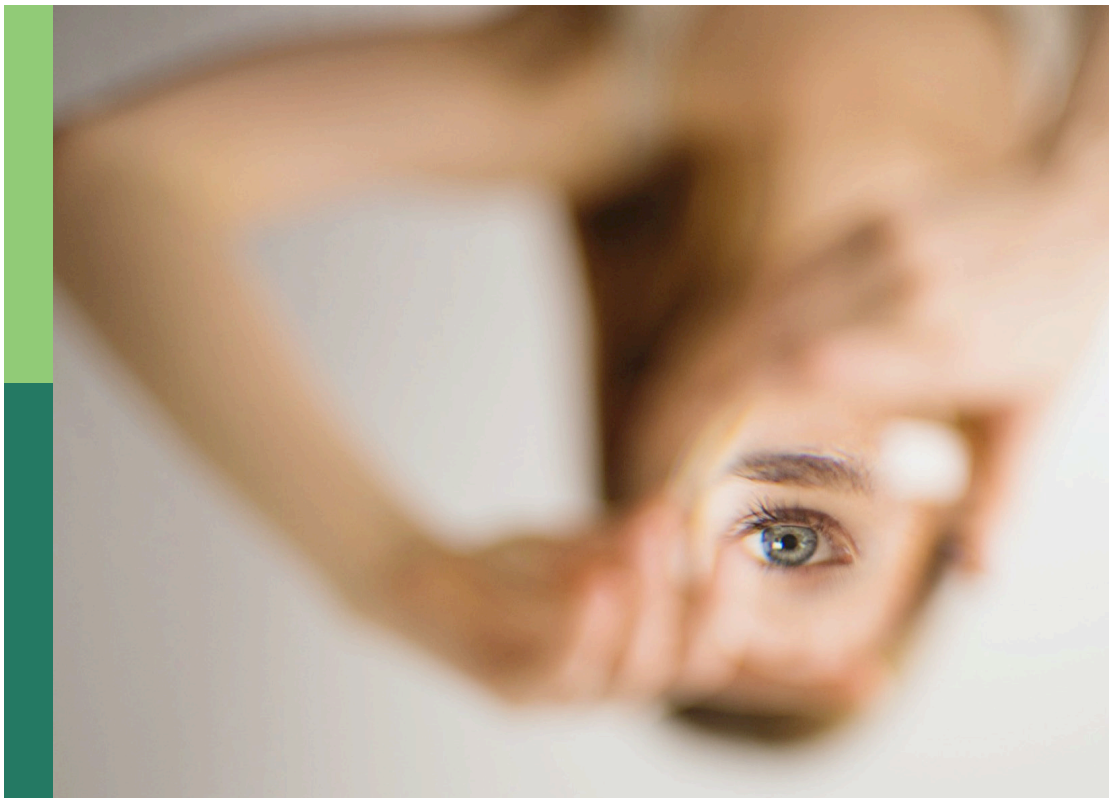

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Psychedelic humanities

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Editorial: Psychedelic humanities

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Editorial on the Research Topic
Psychedelic humanities

Introduction

Psychedelic knowledge production over the past two decades has predominantly revolved around psychedelic science. However, in recent years an increasing number of humanities scholars and social researchers have begun studying psychedelic drugs and the cultural shifts accompanying the "psychedelic renaissance." We decided to organize this Research Topic to represent psychedelic humanities research, but also to explore it, to try to get a sense of what kind of scholarship is being produced. We released our call for papers in 2022, at a time when the initial hype surrounding the medicalization of psychedelics came to be countered by an "anti-hype" that highlighted the pharmacological, psychological, and cultural risks of the drugs' emerging uses (Noorani and Martell, 2021; Yaden et al., 2022; Langlitz, 2023).

In our call for this Research Topic, we took inspiration from scholars who have sought to expand the concepts of "set and setting" beyond laboratory and clinical contexts (Eisner, 1997; Hartogsohn, 2020). Such wider "cultural settings" can lead people to question the value of different states of consciousness and guide decisions to take psychedelics in the first place. Questions of what values and meanings people attribute to their experiences, and the interplay between experience and context, are at the heart of humanities scholarship. Moreover, the humanities often differ from the sciences in that they habitually make thematic the conceptual and normative frameworks in which they operate. Indeed, this may go some way to explaining the allure for humanities scholars of psychedelic experiences, with their qualities of self-referentiality, phenomenal richness, and polyvocality. The humanities tend to avoid rigid definitions or outcomes in favor of embracing complexity, even when it may undermine consensus or appear contradictory.

Through this Research Topic, we sought to explore what psychedelics can teach us about themselves, and ourselves, including aspirational experiences alongside cautionary tales about the potential pitfalls of a psychedelic renaissance and what it might come to represent in this era of human history. We invited scholars working in the humanities and social sciences to contribute to ethical, sociological, gendered, historical, anthropological, philosophical, and policy perspectives on the use of psychedelics. While we welcomed studies that explore intersections of medicine and culture, we especially encouraged

submissions from scholars examining psychedelics in non-medical settings, including ceremonial spaces, recreational settings, or spaces where consumers seek psychedelic experiences in order to expand notions of human flourishing and creativity.

In what follows, we survey how the articles of the Research Topic illustrate diverse topics and approaches within the psychedelic humanities, point to some gaps in the Research Topic, and finally consider the possibility of a more programmatic description of the field. With respect to a programmatic for the humanities as inherited from the 19th century, philosopher Sloterdijk (2009) has argued for the centrality of books as "anthropotechnical" devices for reflexive use by humans in exploring and augmenting our common humanity. We wonder whether the psychedelic humanities today might approach psychedelics as analogously educative, offering a set of anthropological devices through which psychedelic experiences can come to reveal ourselves to ourselves, and to offer up new clay for our self-fashioning. While the "humanizing" mission of the humanities was and often still is articulated in restrictive and non-inclusive terms—which are rightly criticized in reflections on the limitation of the category of the human (Wynter, 2003; Cordova)—the promise of individual and collective betterment through anthropotechnical devices such as books and psychoactive substances remains.

Surveying the articles

The 20 published articles are a good sample of the coalescing field of the psychedelic humanities: eclectic, effervescent and clearly flourishing! We received submissions across a range of disciplinary approaches, from history to cultural and literary studies, from philosophy to black studies, and from bioethics to psychology. Perhaps unsurprisingly, the majority of the articles occupy themselves with the dominant mode of knowledge production in psychedelic scholarship: psychedelic science. This includes synthesizing scientific claims (e.g. Greń et al.), using extra-scientific concepts and arguments to reinterprete scientific data (Kähönen; Devenot and Erving), and using scientific findings as a jumping-off point for asking questions about meaning, the nature of consciousness, or ethics (Jylkkä; Spriggs et al.; Greń et al.). Philosophical contributions offer meta-frameworks and engage in "conceptual hygiene" work (Meling and Scheidegger; Cea; Langlitz), while critical analyses seek to dwell in asking better questions rather than rushing to provide poorly formulated answers (Cordova). In some of these engagements with psychedelic science, we note how authors might hedge bets on the state of the science. For instance, in taking a received trope from psychedelic science and running with it, humanities scholars can hope to articulate particular tensions, antagonisms, and nascent possibilities in psychedelic science, but at the risk of tethering their own relevance to the variable shelf lives of the scientific claims they rest atop.

Beyond psychedelic science, articles also look ahead to worlds where psychedelic-assisted therapy (PAT) is provided at scale, considering what PAT delivery and wider healthcare provision could and should look like, as well as the processes that might best enable us to get there (Spriggs et al.; Greń et al.; Sjöstedt-Hughes; Jacobs). Reviews of scientific research programs are also used to pave the way to remembering or reanimating neglected scientific trajectories (Davis), while focusing in on specific histories of science garners fresh insights into the contemporary cultural politics of psychedelia (Dubus et al.; Jones).

Moving into the macrosociological and macropolitical, we find a discursive analysis of the multidisciplinary problems and concerns that have shaped the framing of cognitive liberty (González Romero), and studies of spiritual technologies—both the persistence of "evolutionary spirituality" within Western psychedelic culture that has often enabled dogmatism and "spiritual eugenics" (Evans), and the liberatory possibilities and pitfalls of the nexus of psychedelic and digital (or "cyberdelic") technologies (Hartogsohn). Finally, there are studies on the coloniality of psychedelic music therapy (Ratkovic et al.), and on the ongoing impact of neoliberalism on psychedelic experiences (Sanchez Petrement), including the possibility of psychedelic-assisted group therapy as a solution to the problem of neo(liberal)-nihilism (Plesa and Petranker).

An eclectic mix of evidence reveals diverse disciplinary trainings, ranging from the extensive use of footnotes in ways that refuse linearity and unifocality in the text (Davis), to the use of tables, figures, and charts as is common within psychedelic science. Indeed, a selection of articles are penned by psychedelic scientists moonlighting as psychedelic humanities scholars (e.g. Meling and Scheidegger; Spriggs et al.). Given also that many of the articles are in direct conversation with psychedelic science, this raises the possibility of the psychedelic humanities as a genre that does not only have to be served by humanities scholars but could also be a space for scientists to discuss what cannot be said in the constraints of scientific publications. Indeed, might the contributions of psychedelic scientists to the psychedelic humanities be greater than, for example, the contributions of environmental scientists to the environmental humanities, or that of medical researchers to the medical humanities? If there is a markedly greater enthusiasm on the part of psychedelic scientists to weigh in on questions more proper to the humanities, we wonder if this tells us something about the agency of psychedelic substances and experiences in convening interdisciplinary inquiry around them.

What's missing?

There were notable gaps in the Research Topic. Discussions of gender and sexuality, indigenous knowledges, analyses and practices, and race and colonialism, were less prominent than we had hoped (see Cordova and Ratkovic et al. for exceptions). This perhaps reflects the venue and the costs, particularly for early career researchers, associated with the Frontiers publication model. Regardless, we look forward to future collections on the psychedelic humanities taking up these themes in much more central ways. We also saw very little consideration of psychedelics and embodiment, a relative absence that marks the possibility of a resistance to the overly-mentalistic/neurocomputational orientation of the biomedical research (see Davis, Unpublished manuscript, ch.3). In terms of the emergence of the psychedelic healthcare industry, we were struck that there was little explicit call for a slowing down—if not outright abandonment—of

psychedelic medicalisation processes, as has been articulated in other collections (e.g. Hauskeller and Schwarz, 2023).

One of the questions raised in our call as a provocation for authors was, "How does qualitative evidence enhance or detract from our understanding of psychedelic studies?" No articles addressed this directly, other than through close textual analysis of individual psychedelic experiences (Davis; Devenot and Erving). The standard fare of microsociological work on "drug events" as heavily shaped by Bruno Latour and the field of science and technology studies was missing from the Research Topic. On the one hand, this underscores the need to build bridges between the emerging psychedelic humanities and the critical drug studies literature (e.g. Fraser et al., 2014). On the other hand, we wonder what this tells us about access to psychedelic lab sites, whose proliferation is surely the most significant sociological development of the past several years. Some of us have first-hand experience of securing prolonged periods of time in psychedelic labs and patient group networks and imagine that these opportunities may be becoming more difficult to obtain and manage, as the chances of reputational damage from critical researchers to psychedelic corporate research ventures is considered by the latter to be too risky. Yet reverting to knowledge production that does not require this kind of empirical work, particularly without friendships and relations of trust with psychedelic scientists to fall back on, may stymie future scholarship from growing beyond the impasses and polemical tensions found in the extant peer-reviewed literature.

Toward a programmatic description of the psychedelic humanities

We edited this Research Topic at a time when the overzealous celebration of psychedelic medicalisation had begun to lead to an equally overzealous "anti-hype" reaction. While critique—and even criticism—offer valuable nuance in the face of unbridled optimism, there is a risk of this giving way to an entrepreneurship of psychedelic negativity dominating the field of the psychedelic humanities. With this in mind, we also sought to parse the Research Topic for positive visions of the role of the psychedelic humanities beyond, for example, keeping the hubristic excesses of the psychedelic sciences in check.

A curatorial role could be in finding fruitful alliances across the research of different humanities and social science disciplines. Articles that focus on risks in PAT delivery might appeal to bioethicists who are concerned with risk-management, while specific suggestions for testable interventions might resonate better with psychedelic research labs than with high-level critiques of neoliberalism. In turn these political critiques might inform—and be informed by—policy discussions around the scaling of psychedelic therapies. These alliances may reflect matters of scale, with some disciplines exploring the real-time implications of applied psychedelics, while others take a wider perspective in an effort to refocus our attention on risks and benefits over a long durée.

Returning to the Sloterdijkian framework of anthropotechnics, Davis wonders if psychedelics might be best construed as "tools, techniques, or technologies for the modification of the human," alongside books and other cultural objects, to "learn from the experience, refine, and repeat in an elevating cycle of practicing to develop performance and yield." Several other articles in the Research Topic frame psychedelics as tools or technologies in ways that offer the potential of (self-)education (cf. Foucault, 1988; see for example, Devenot and Erving; Hartogsohn; Kähönen; Evans; González Romero). As a field for the exploration of these potentials, could the psychedelic humanities be a place for the psycho-formative education of the self through our relationships with psychedelics? This orientation to psychedelics as pedagogical tools might offer fresh resources for approaching the challenges posed by the ethics of informed consent in relation to "unknowable" experiences.

Langlitz calls for the psychedelic humanities to be a place where scholars might "refrain from offering normative orientation and instead increase the complexity of the observed phenomena by opening other possible perspectives, leaving it to their readers to reduce the resulting complexity in novel ways." As such, Langlitz argues, "The goal of the psychedelic humanities is to sharpen the sense of possibility and expand the imagination of the psychedelic renaissance." We recall here Markus' (1987, p. 34–35) useful description of the humanities as existing in a "polemic-dissensive manner" (Langlitz, 2019), in contrast with the tendency of the sciences to be consensus-oriented. Many of the papers certainly speak to and through various -isms: psychedelic humanism, naturalism, spiritual evolutionism, mysticism, neoliberalism. Indeed, Sjöstedt-Hughes's article explicitly develops a typology for many contrasting philosophical frameworks to mysticism. With this variation in mind, the psychedelic humanities could be a zone for the development of many frameworks, each charged with competing values, norms, metaphysical assumptions and so on. Scientific naturalism would be parochialized as one amongst many, and the psychedelic humanities would provide a space for thinking about how these divergent frameworks relate to each other. This is consistent with the call at the end of Langlitz that the psychedelic humanities today, at a time of polarization, could strive for mind-loosening and noncommitment.

But another term for "mind-loosening" is "psycholytic," suggestive of a lower-dose version of what psychedelic humanities could be. At the risk of inviting greater political agonism into Langlitz's formulation of psychedelic humanities-as-mind-loosening, some of our articles appear to represent a more high-dose "psychedelic" humanities, in line with a model of psychedelic drug action that strengthens high-level beliefs (Safron, 2020; as cited in Meling and Scheidegger) and commitments. We could also go the other way, to consider a "microdosing" humanities as representing more invisible, infrastructural forms of augmentation that enable new intellectual articulations to take place: backstage relationship-building and cross-disciplinary, interdisciplinary, and transdisciplinary alliances, partnerships and pacts. In yet another spiral engagement with psychedelic

science, then, emerging doxa around dose-related interventions (see Garcia-Romeu and Richards, 2018, in relation to psycholytic vs. psychedelic interventions), may enable new recursions in the dynamic between the psychedelic sciences and the scholarship of the psychedelic humanities. Indeed, perhaps this might comprise the next iteration of a Research Topic of this sort.

Conclusion

These are exciting times for the psychedelic humanities. Psychedelic science is becoming increasingly heterogeneous—through ever-more-sophisticated basic scientific research, the increasingly complex array of tactics and strategies by which industrial psychedelic science is producing both knowledge and ignorance (Proctor and Schiebinger, 2008), and more creative local psychedelic trial designs that strike the balance between controlled experimentation and real-world evidencing afresh as psychedelic medicine is normalized and barriers to entry for research are diminished.[1] The psychedelic humanities will no doubt engage with all of this, but also find its own pathways, in search of new modes of flourishing in the intimacies of our relationships with and through psychedelic substances. This Research Topic has reminded us that the psychedelic movement (such that it is) needs both the sciences and the humanities to effectively evaluate different kinds of evidence, to (re)imagine diverse psychedelic use practices, and to confront the inherent complexities and contradictions that emerge when working across historical, cultural, political and scientific registers.

1 For example, see https://tuwairua.org.

Author contributions

TN: Conceptualization, Writing – original draft, Writing – review & editing. OD: Conceptualization, Writing – review & editing. AD: Conceptualization, Writing – review & editing. NL: Conceptualization, Writing – review & editing. AS: Conceptualization, Writing – review & editing. ED: Conceptualization, Project administration, Writing – review & editing.

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References

Davis, O. (Unpublished manuscript). *The Psychedelic Renascence of Democracy*.

Eisner, B. (1997). Set, setting, and matrix. *J. Psychoact. Drugs* 29, 213–216. doi: 10.1080/02791072.1997.10400190

Foucault, M. (1988). "Technologies of the self," in *Technologies of the Self: A Seminar with Michel Foucault, Vol. 18*, eds. L. Martin, H. Gutman, and P. Hutton (Amherst, MA: University of Massachusetts Press), 170. doi: 10.2307/2072021

Fraser, S., Moore, D., and Keane, H. (2014). *Habits: Remaking Addiction*. New York, NY: Springer. doi: 10.1057/9781137316776

Garcia-Romeu, A., and Richards, W. A. (2018). Current perspectives on psychedelic therapy: use of serotonergic hallucinogens in clinical interventions. *Int. Rev. Psychiatry* 30, 291–316. doi: 10.1080/09540261.2018.1486289

Hartogsohn, I. (2020). *American Trip: Set, Setting, and the Psychedelic Experience in the Twentieth Century*. MIT Press.

Hauskeller, C., and Schwarz, C. G. (2023). Critical doses: nurturing diversity in psychedelic studies. *Interdiscip. Sci. Rev.* 48, 697–711. doi: 10.1080/03080188.2023.2266974

Langlitz, N. (2019). Psychedelic science as cosmic play, psychedelic humanities as perennial polemics? Or why we are still fighting over max Weber's science as a vocation. *J. Class. Sociol.* 19, 275–289. doi: 10.1177/1468795X19851405

Langlitz, N. (2023). The making of a mushroom people: toward a moral anthropology of psychedelics beyond hype and anti-hype. *Anthropol. Today* 39, 10–12. doi: 10.1111/1467-8322.12813

Markus, G. (1987). Why is there no hermeneutics of natural sciences? Some preliminary theses. *Sci. Context* 1, 5–51. doi: 10.1017/S0269889700000041

Noorani, T., and Martell, J. (2021). New frontiers or a bursting bubble? Psychedelic therapy beyond the dichotomy. *Front. Psychiatry* 12:727050. doi: 10.3389/fpsyt.2021.727050

Proctor, P., and Schiebinger, L. (2008). *Agnotology: The Making and Unmaking of Ignorance*. Stanford, CA: Stanford University Press.

Safron, A. (2020). On the varieties of conscious experiences: altered beliefs under psychedelics (ALBUS). *PsyArXiv* [Preprint]. doi: 10.31234/osf.io/zqh4b

Sloterdijk, P. (2009). Rules for the human zoo: a response to the letter on humanism. *Environ. Plann. D Soc. Space* 27, 12–28. doi: 10.1068/dst3

Wynter, S. (2003). Unsettling the coloniality of being/power/truth/freedom: toward the human, after man, its overrepresentation–an argument. *New Cent. Rev.* 3, 257–337. doi: 10.1353/ncr.2004.0015

Yaden, D. B., Potash, J. B., and Griffiths, R. R. (2022). Preparing for the bursting of the psychedelic hype bubble. *JAMA Psychiatry* 79, 943–944. doi: 10.1001/jamapsychiatry.2022.2546

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Cyberdelics in context: On the prospects and challenges of mind-manifesting technologies

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The concept of cyberdelics emerged in the 1980s and 1990s as an umbrella term denoting the nexus connecting cybernetic (digital) technologies and psychedelic (mind manifesting) drugs. Cyberdelic technologies, in particular the then newly emerging field of virtual reality, were touted by psychedelic cultural icons including Timothy Leary and Terence McKenna as auguring a new era of digital mind-expansion where psychedelic experiences will be recreated online inside virtual worlds. Cyberdelic culture waned in the 2000s. However, recent years have seen the return of the cyberdelic imaginary, following on the heels of a psychedelic resurgence and a renewed interest in virtual reality technologies and their use in therapy. Cyberdelic advocates speak of the necessity of creating transformative technologies that steer humanity away from mindless consumerism and distractedness, and towards expanded states of awe, presence, and transcendence. Nevertheless, much like psychedelics, cyberdelic technologies are seen as running against the grain of current sociocultural arrangements and economic models which threaten to quell their transformative potential. Research on psychedelics within the humanities over the past decade has emphasized the role of cultural set and setting: the significance of the cultural embeddedness of these psychoactive agents and the dependence of their effects on surrounding sociocultural conditions. Building on the notion of information technologies as mind-manifesting technologies, this paper sets out to consider what psychedelics can teach us about cyberdelics: how the principles of set and setting and current discussions within the psychedelic humanities can inform our understanding of the resurgence of interest in cyberdelic media, its prospects, and challenges.

KEYWORDS

psychedelics, cyberdelics, virtual reality, neurofeedback, imaginaries, consumerism

Introduction

The theory that an alternative form of spiritual media can serve as an antidote to the maladies of alienated technological society and be key to solving global challenges may ring familiar to those acquainted with mid-twentieth-century psychedelic history. Back in the 1960s psychedelic advocates developed a vision of a society improved by the ingestion of psychoactives, which anthropologist Nicolas Langlitz terms a "political neurotheology"

(Langlitz, 2011). Psychedelics, at the time, were viewed by many as transformational technologies that may help humanity realize its potential and climb further up the evolutionary ladder (Leary, 1993, 1998; Evans, 2022).

An updated version of the notion that technology may come to the rescue, enlighten and provide new horizons to a spiritually alienated humanity can be discerned in the concept of cyberdelics (Langford, 2019; Smith and Warner, 2022). Cyberdelics are technologies designed to produce altered states of consciousness (ASC) such as presence, awe, and transcendence, considered hallmarks of the mystical-type states afforded by psychedelics (Griffiths et al., 2006; Johnson et al., 2019). The term cyberdelic is a fusion of two words. The prefix "cyber" gestures towards cybernetics and the world of microchips, computer networks and digital media. The affix "delic" points at the mind-expanding world of psychedelic drugs.

A distinct product of the West Coast and the 'Californian Ideology' that flaunted a mix of experiential libertarianism, entrepreneurialism, and techno-utopianism (Barbrook and Cameron, 1996; Tvorun-Dunn, 2022), the concept of cyberdelics achieved some prominence in the 1980s and 1990s, at a time when the personal computer and internet revolutions were gathering steam. After receding from view in the 2000s, the concept has reemerged in recent years alongside a resurgence in psychedelic science and culture and a renewed interest in virtual reality technologies.

This perspective paper examines the cyberdelic idea: its cultural context, appeal, prospects, and challenges. By examining the story and ethos of cyberdelics as utopian, mind-manifesting technologies, it aims to illustrate the broader challenge of integrating mind-manifesting, psychedelic technologies within the context of contemporary high-octane, neo-liberal society. The endgame of this examination points to the inherent difficulty of modulating the nature of electronic (mind-manifesting) media within ingrained oppressive sociocultural conditions that favor dependent, compulsive patterns of media use. Within this context, cyberdelic media are in constant danger of being marginalized or repurposed to fit the values and norms of the surrounding society. The fate of these media therefore depends on their points of contact with broader sociocultural forces, including culture's ability to allow for emergence of spaces of refuge from intense media intake, and its ability to imagine ways of being that are alternatives to the competitive, manipulation-oriented, consumerist matrix.

A brief history of cyberdelia

The idea that digital technology may elevate human consciousness and assist humanity in realizing a loftier spiritual destiny may appear misplaced in the context of current discussions on the effects of media. The digital revolution, in particular its latest incarnations – the smartphone and social network revolutions – has been defamed in recent years. It is accused of wreaking havoc on human faculties of focus, concentration, empathy and connection, fomenting political polarization and unleashing an epidemic of mental illness (Carr, 2010; Turkle, 2011; Alter, 2017; Klimburg, 2017; Twenge, 2017a; Lanier, 2018; Zuboff, 2019; Feldstein, 2021). Digital media are furthermore posited to hook users in compulsory cycles of use, fueled by dependency on the regular secretion of neurotransmitter dopamine, facilitated through the use of smartphones and social media apps (Eyal, 2014; Lembke, 2021; Hartogsohn and Vudka, 2022).

Another dimension where digital technology's effects are deemed to have been destructive is the domain of spirituality. Digital media are regularly described as robbing users of their sense of presence, bringing them into states of distraction, restlessness, fear of missing out (FOMO), anger, and envy that runs counter to spiritual ideals of presence, firmness and peace (Carr, 2010; Dossey, 2014; Fan et al., 2016; Faiola et al., 2018; Rosen et al., 2018; Rozgonjuk et al., 2020; Serrano, 2020; Hartogsohn, 2022).

Cyberdelic media present themselves as an alternative to the deleterious effects of contemporary digital media: media that cultivate harmony, awe, and presence rather than FOMO and dispersion, produce effects similar to those of the mystical-type experiences elicited by psychedelics, and are aligned with the aim of spiritual growth (Arnott, 2018; Glowacki et al., 2022; Smith and Warner, 2022). The cyberdelic project bases itself on the appealing suggestion that rather than fighting technology's pernicious effects, technology could be redesigned to produce alternative, more favorable effects.

Cyberdelic history has roots in late 1960s and early 1970s, at a time when psychedelics were having their cultural heyday, and the personal computer and internet revolutions were still nascent. At the time, the psychedelic movement cultivated a complex and often ambivalent relationship to technology. On the one hand, the movement was strongly aligned with the back-to-the-land commune movement, which cultivated naturalistic, frugal, low-tech, and even anti-tech ideals (Miller, 1999; Fairfield and Miller, 2010). Simultaneously, the appearance of 'mind-expanding' psychochemical tools in the form of synthetic psychedelics seemed to hint at the possibility that other technologies might soon emerge, which would further empower individuals and societies. Openness to new technologies was salient in Stewart Brand's iconic 1960s publication Whole Earth Catalogue, which endorsed for "access to tools" as a condition for personal and social growth (Turner, 2006). These tools included ancient and indigenous technologies next to high-tech ones. In the pages of the catalogue, writes Turner (2006, 200), "the moccasins and backpacks of those lighting out for the woods had bumped up against the calculators and technical manuals of Bay area engineers."

It was against this backdrop that computers began to be imagined as a form of mind-altering technology. In 1968 media savant Marshall McLuhan cryptically proclaimed that "the computer is the LSD of the business world, "hinting perhaps at the

enhanced cognitive terrains opened up by computation (McLuhan et al., 1968, 83). In 1972 the argument was made more explicit by Brand, who, in a Rolling Stone article about hackers, argued computers are the best news "since psychedelics" (Brand, 1972).

Over the next two decades, as digital technologies rose in prominence, psychedelics seemed to wane from the cultural horizon. Yet some digital visionaries held on to the hope that computers might hold the key to new mind-expanding breakthroughs. John Perry Barlow Grateful, a Grateful Dead lyricist turned digital ideologue, argued that virtual reality is the closest analogue to the psychedelic experience (Hagerty, 2000). VR pioneer Jaron Lanier propagated the idea that technology must be built to radiate "such beauty, fascination and depth that mankind will be seduced away from mass suicide" (Lanier, 2017, 299). Technologist Mark Pesce, originator of Virtual Reality Modeling Language (VRML) confessed to being inspired to the idea by a powerful LSD trip (Pesce, 2000; Hagerty, 2007). Virtual technologies, argued cyberdelic advocates, would allow us to simulate and inhabit the realities envisioned from within psychedelic altered states. Prominent icons of the psychedelic movement were embracing the notion that computers may soon provide similar services to those previously afforded by psychedelics. "The drugs of the future will be computers and the computers of the future will be drugs, "prophesized psychedelic icon Terence Mckenna (Cultural Frontiers in the Age of Information, 1994).[1] Nineteen sixties psychologist turned LSD evangelist Timothy Leary also came onboard the cyberdelic trend by the 1990s. "Computers are the new LSD" proclaimed Leary, and updated his 1960s slogan "Turn on, Tune in, Drop out" to "Turn on, Boot up, Jack-in." (Dery, 1996, 22).

Twentieth century cyberdelic culture peaked in the 1990s, alongside the internet revolution, and a small-scale psychedelic renaissance that emerged on the coasts of Goa and Ibiza, combining psychedelic compounds and electronic psytrance music designed to produce altered states of mind. However, the trend was short lived. While EDM and the internet revolution assumed a central cultural position, The VR winter of the 2000s, the fall of the Dot-com bubble, the corporatization of the web, the rise of digital surveillance, and other cultural factors such as the decline of the 1990s house/rave scene can all be surmised to have contributed to the waning of cyberdelic tide (Hartogsohn and Vudka, 2022).

Over the past two decades, a wave of techno-pessimism has all but completely reversed the socio-technical imaginaries around internet and information technologies. Digital technologies as such did not disappear from view, as can be recognized from the ascent of smartphones, social media and the cloud around this very time. Nevertheless, a radical shift has occurred in the ways such technologies are viewed and interpreted. Previously seen as technologies of individual empowerment aiding collective liberation, digital technologies came to be portrayed as inextricably enmeshed with the manufacture of addiction, corporate manipulation, political repression and a mental health epidemic (Morozov, 2011; Alter, 2017; Twenge, 2017a; Feldstein, 2021).

Rather than being seen as electronic psychedelics, digital technologies came to be viewed as analogous to narcotics and condemned as "electronic heroin" (Harsh, 2017; Phillips, 2017) and "digital cocaine" (Huddleston, 2016). "Virtual drugs" (Kardaras, 2017) were now considered addictive, debilitating, and harmful (Sutton, 2020; Hartogsohn and Vudka, 2022). The new view was actually a return to an older narcotic view of electronic media, which appears in the writing of heroin user and Beat writer William Burroughs and is explored by McLuhan in his "Notes on Burroughts." According to Burroughs, the only possible escape from technology's control is by regarding "our entire gadgetry as junk … apomorphine"(McLuhan, 1964, 518). The only way to be saved from the surveillance machine, Burroughs advises, is by shutting it off.

Then, in the mid-2010s something shifted again. Swept by the tides of a new psychedelic renaissance (Sessa, 2012; Brown, 2013; Pollan, 2018) and a virtual reality renaissance (Waldrop, 2017) – cyberdelics made their return.

The current cyberdelic landscape

The cyberdelic renaissance consists of a plethora of digital technologies purporting to support personal and spiritual growth. On one end of the spectrum, one finds relatively familiar, even prosaic, technologies such as smartphone apps that guide users through meditation and breathing exercises, or assist psychedelic users in the integration of psychedelic experiences (Daudén Roquet and Sas, 2018; Noorani, 2021; Jablonsky, 2022). Other, more radical technologies for spiritual growth include neurofeedback devices that train users in controlling and calming their minds; brain-stimulation devices that purport to 'down-regulate' ego-centric brain areas in order to facilitate states of unity and increased fluidity; and computer-controlled light machines such as the Lucia No.3, which promise to induce states of wonder, awe, clarity and peace in users (Schwartzman et al., 2019; Wildman and Stockly, 2021). Much 'Spirit Tech' (Wildman and Stockly, 2021) is confined to research laboratories. However, some consumer products attempt to make such techno-spiritual wonders accessible to shoppers. Devices such as 'Muse' offer affordable neurofeedback hardware-software package that is promised to facilitate rapid and profound progress in users' meditation practice. Another device, Xen by Neuvana promises to relieve stress, enhance focus and brighten mood using headphones that transmit micropulses directly to the vagus nerve (Muse Muse – Meditation Made Easy, 2021; Neuvana, 2022).

The field's growth has also been fueled by the rising interest in VR technologies and in VR therapy in particular. Recent years

1 The phrasing of McKenna's quip, given at the end of a Q&A session, were more meandering, but the quote above is the one perennially in use over the web.

have seen growing interest in the use of VR in the preparation and integration phases of psychedelic therapy, and possibly during psychedelic sessions (Aday et al., 2020; Gómez-Busto and Ortiz, 2020; Sekula et al., 2022). The two experiences have been described as overlapping, synergistic and complementary in their effects (Aday et al., 2020; Sekula et al., 2022). Strikingly, both psychedelic therapy and VR therapy are suggested as treatments for the same types of mental health problems including depression, anxiety, trauma and eating disorders (Gómez-Busto and Ortiz, 2020). With computer technologies again riding the crest of a psychedelic resurgence, it seems both movements are posed to comingle and interact in potentially synergistic ways.

Unsurprisingly, therefore, virtual reality technologies continue to hold a central place within the cyberdelic landscape. Some cyberdelic VR experiences promise to take users into a mystical Near Death Experience (Virtual Awakening, n.d.), others transport users into spectacularly colorful virtual worlds where sight and sound synesthetically mesh (Cyber Mushroom, 2022; Microdose, 2022), still other psychedelically inspired VR experiences like *Isness* purport to elicit empathy, ego dissolution and other Self-Transcendent Experiences (STEs) of the type induced by psychedelics by transporting users into a shared luminous virtual space where their beings are able to interact and even coalesce (Glowacki et al., 2020, 2022). In some cases, developers put these technologies to empirical tests that claim to demonstrate commensurability between their effects and those of psychedelics (Schwartzman et al., 2019; Glowacki et al., 2020, 2022).

Current efforts on the nexus of psychedelics and digital technologies are more subdued in their rhetoric compared to their 1980s counterparts. Nevertheless, the socio-cyberdelic imaginary (Schwarz-Plaschg, 2022) that advocates for the creation of mind-expanding technologies offers an alternative that challenges the domination of corporate-controlled, dependence-inducing forms of media. It can be recognized in the work of organizations such as The Cyberdelic Society which organizes "Cyberdelics Incubator" events where technologists and media artists present cyberdelic technologies. Such encounters aim to explore "how the targeted application of ancient and modern technologies can generate altered states leading to altered traits" (Cyberdelic Society Home, 2020). Cyberdelic society members point to the harms of contemporary digital media platforms and suggest that building better forms of technology might be the answer. "We're critically at a stage in humanity where we need to get technology right so that it can help us rather than hinder us," argues Smith (2019b). Others write manifestos calling for a new form of mind-altering technologies. The *Technodelic Manifesto*, written by Robin Arnott, founder and CEO of EntheoDigital – a company developing the cyberdelic meditation app Soundself, which converts user breath patterns into virtual visuals – adumbrates the contours of a technodelic media as media that goes against the grain of current digital technologies, by putting the emphasis on focus, presence, flow and eschewing goals and distractions. Arnott (2018) describes technodelic media as "fully immersive," "doorways into the ineffable" (n.p.) and – similar to psychedelics – relying on the principles of set and setting, ritual and ceremony. Thus, while current cyberdelicists are careful to avoid utopian language, a proposition is made for a radical shift in the paradigm of human-machine relationships, one that will upend humanity's debilitating dependency on incessant skinner-type electronic stimuli and allow electronic media to become doorways into the numinous.

Discussion

Psychedelics remain a major source of inspiration for the emerging field of wholesome digital technologies, as the use of the "–delic" affix in terms like technodelic, cyberdelic and numendelic (the term used by Isness developer, David Glowacki) makes evidently clear. However, the high-tech nature of the cyberdelic project is sometimes linked with a certain unease. Cyberdelic Society co-founder Carl Hayden Smith, for instance, proposes a human centered vision of hyper-humanism as an alternative to the technology-centered vision of transhumanism promulgated by techno-evangelists (Smith, 2019b). Smith's 'hyperhumanism' aspires to use technology to generate novel endogenous human capabilities, rather than gadget-based powers. "We do not want to wear technology. We want to become technology, "says Smith, quoting a tagline by CyborgNest, a company that develops technologies allowing users to expand their sensory horizons (CyborgNest | Human Augmentation Technologies and Sensory Enhancements, 2022). Cyborgnest's products permit users to haptically connect with their family and network's live heartbeats as measured by sensors, or with the earth's magnetic field. Smith reports that after 6—8 weeks of wearing a belt that allows for magnetic sensing, a user gains the ability to autonomously detect north, even without putting on the belt. One reportedly learns to pick up on faint signals that were not noticeable before wearing the device, and a new sense is gained. The north-sense (Smith, 2019b). In a recent interview I held with him, Smith warned of being overdependent on sophisticated technologies that rely on complex and fragile supply-chains, a concern highlighted by the 2021—2022 global supply chains crisis (Gamio and Goodman, 2021).

Yet, beyond the question of supply chains, a more deeply felt suspicion of digital technology has been ingrained in contemporary society following revelations on the implication of such technologies in mass surveillance and election manipulation, and their disruptive economic, social and psychological effects (Carr, 2010; Morozov, 2011; Srnicek, 2016; Klimburg, 2017; Twenge, 2017b; Zuboff, 2019; Feldstein, 2021). Recent history has taught society to distrust the promises of digital utopia. Underlying this skepticism is a fundamental question: can digital technology be reformed or is it inherently pernicious?

Cyberdelic technologies offer hints that digital technology can be re-imagined. They provide evidence that computer technologies need not necessarily provoke FOMO, anxiety, and depression. Digital technologies can, under a different set of conditions, also

produce experiences of awe, transcendence, empathy, and bliss. Still, the technological possibilities afforded by such media should not be conflated with social affordances, and herein lies the rub.

Social Shaping of Technology (SST) theory argues that technological design and use are inextricably meshed with their surrounding society and culture. Technology theorists have incessantly pointed to the myriad ways in which technologies tend to assume the mores, values and beliefs of their time and place (Bijker, 1997; MacKenzie and Wajcman, 1999; Pinch, 2009; Lievrouw and Livingstone, 2016; Greenfield, 2018). Examining the question of digital media through this lens, one may infer that digital media developed as they did – in a way that exacerbates addiction, consumerism and inequality – for a certain reason, namely, the distinct sociocultural and economic environments in which they evolved.

Interestingly, theories on the social shaping of technology resonate distinctly in one of the key concepts of psychedelic therapy and science: the idea of set and setting. Psychedelic compounds are regularly defined as mind-manifesting (from the Greek psyche-mind, delos-manifest) non-specific, amplifying agents whose effects depend, first and foremostly, on their context of use (Hartogsohn, 2017). These are, in other words, technologies defined by their susceptibility to environmental shaping. So much so that their effects change in nature each time they are used, corresponding with users' mindsets and environment (Hartogsohn, 2015).

Tying together SST theory and the idea of set and setting, it is worth noting that some authors have identified information technology as mind-manifesting technologies, namely exceptionally versatile and context-dependent. "Computers are literally *psychedelic; that is, they manifest the mind,* "observes Erik Davis in his classic Techngnosis (Davis, 2015, 162). VR pioneer Jaron Lanier describes VR technology in a way that resonates common descriptions of psychedelics as magnifiers of consciousness (Schneider, 1967; Lee and Shlain, 1992; Grof, 2008; Strassman et al., 2008; Hartogsohn, 2018), arguing that "virtual reality will test us. It will amplify our character more than other media ever have" (Lanier, 2017, 1), and that the technology is "capable of amplifying both the best and worst in people" (Lanier, 2017, 142). Cyberdelics proponents also regularly point to the essential relevance of the psychedelic set and setting principle for cyberdelic technologies, which, they argue, are synergistic with the use of ritual and integration (Lanier, 2017, 153; Arnott, 2018; Smith and Warner, 2022).

Such proclamations regarding the context-dependency of digital technology provide valuable clues for the reasons digital technologies developed along narcotic, not cyberdelic, lines. As Yuval Noah Harrari opined regarding disruptive technologies of human-enhancement "If you have an arms race with these technologies then it's very clear what kind of human abilities are going to optimized: it will be things like intelligence, it will be things like discipline … but other things like compassion, like artistic appreciation, like spirituality – these are things that are not very high on the list of armies and corporations. So the attempt to upgrade humans might actually result in downgraded humans."(Smith, 2019a).

Digital media's narcotic affordances of alienation and numbing should therefore be seen in the context in which they emerged. They fit the conditions of life in a competitive, hyper-individualist, neo-liberal culture characterized by boredom, a meaning crisis, and rising costs of living (Alexander, 2010; Duménil et al., 2011; Vervaeke et al., 2017; Mastropietro and Vervaeke, 2020). Their repetitive, addictive nature serves to dull the pain and anxiety of contemporary life while providing easy distractions. There is a reason why individuals in contemporary society find it easier to make room in their lives for smartphones and social media apps rather than to neurofeedback devices or awe-inspiring VR experience. The stimulating electronic dopamine-rush appears better suited to the pace of 21st century capitalist civilization where time is fragmented and scarce (Wajcman, 2016). Displacing the everyday dominance of information glut and addictive variable-reinforcement schedules with awe, unity and transcendence appears unlikely within the logics of a system prioritizing manipulation, efficiency, profit, and control. Media theorist Corey Anton suggests a useful distinction between Apollonian tight drugs (such as Ritalin, caffeine and Prozac) which facilitate ordered, productive behavior that is in line with accepted social norms, and Dionysian loose drugs (such as psychedelics), which more radically subvert perception (Anton, 2012). In light of Anton's distinction, one is advised to remember that despite talk of a psychedelic renaissance, use of psychedelics is expected to remain negligible in volume in comparison to use of stimulants such as coffee, nicotine and amphetamines and depressants like alcohol and benzodiazepines. If computer technologies are mind-manifesting as argued by Davis, it makes sense that in the context of contemporary society they would naturally evolve towards the tight variety, rather than the loose one.[2]

Is the quest for self-transforming and potentially society-transforming cyberdelic technologies inherently futile as long as society retains its current form? Folded in such discussions is one of the key questions in the theory of technology. Does technology shape society or does society shape technology? (Smith and Marx, 1994) While mid-twentieth-century psychedelic evangelists promised psychedelics will change society (echoing the popularity of mid-twentieth-century media-theories that awarded technology primacy over society; Havelock and Havelock, 1963; Leary, 1998; McLuhan, 2003; Innis, 2007, 2008), contemporary discussions about psychedelics have been characterized by socially constructivist sensitivities that echo the constructivist turn in the social sciences, including the social studies of science and technology (Hacking and Hacking, 1999; MacKenzie and

2 Importantly, a tendency towards the tight (narcotic) variety of digital media does not preclude a possible ascent of loose (cyberdelic) media. A person may, for instance, use a VR headset to have occasional cyberdelic exeprienes, and still compulsively use social media, email etc.

Wajcman, 1999; Hardon and Sanabria, 2017; Hartogsohn, 2020; Pace and Devenot, 2021). Eventually, one inevitably returns to the recognition that the relationship between technology and society is inherently complex: bi-lateral, co-produced (Jasanoff, 2004), networked (Callon, 1984; Latour, 1993, 2007) and even post-structural (Brunner, 2014). Mind-manifesting technologies take part in these complex dynamics with arguably even greater intensity than other categories of technology,

The challenges of cyberdelics therefore appear to mirror current conversations within the psychedelic humanities about the moral and political implications of the drugs (Hartogsohn, 2020; Timmermann et al., 2020; Langlitz et al., 2021; Pace and Devenot, 2021). Medicalization was originally judged positively by many in psychedelic space and viewed as a route to greater social legitimization. Current discussions are more skeptical, highlighting the importance of cultural context in which a psychedelic resurgence takes place and regarding the merits of such a resurgence as contingent on the beliefs, models and relationships that define it (Langlitz et al., 2021; Pace and Devenot, 2021; Hauskeller et al., 2022; Schwarz-Plaschg, 2022).

The context of a cyberdelic resurgence is similarly crucial, though for different reasons. Products of deliberate engineered design, digital drugs are significantly more specific in their effects than the unruly psychedelics. The question here is whether a swing away from narcotic media and towards cyberdelic media is realistic given the socio-economic and cultural context of contemporary media use, and whether such media may earn their place in the competitive attention economy. While neo-liberal, free-market society continues to exert unabated pressures over a squeezed middle-class (Piketty, 2014), the COVID-19 pandemic has also led to a much discussed great resignation (Jiskrova, 2022; Sull et al., 2022). A turn in societal relationship to digital media is recognizable in the growing interest in ideas of mindful technology design (Neumann, 2016; Langford, 2019; Martin, 2021) and practices of digital minimalism (Newport, 2019). Meanwhile a diverse community of 'consciousness hackers' is keen on the creation and exploration of alternative, 'holistic' forms of media (Wildman and Stockly, 2021). Cyberdelics therefore may be able to carve out a niche of digital mind-expansion. Furthermore, while a complete reversal of trends appears a remote possibility, it is important to note that a social tendency towards the tight (narcotic) variety of digital media does not preclude a concurrent ascent of loose (cyberdelic) media. A person may, for instance, use a VR headset to have occasional cyberdelic experiences, and still compulsively use smartphones and social media much in the same way that users of psychedelics do not necessarily give up use of stimulants such as coffee or ritalin.

Like psychedelic neuro-theology, the cyberdelic project can be viewed as an attempt to invert the logic of media in order to foster alternative states of mind and shift the human condition characteristic of its era. For now, Cyberdelics remain an exotic form of alternative media which augurs exciting possibilities of undetermined prospects. Whether the project will ultimately come to be regarded as visionary or naïve will depend on the ways in which these mind-manifesting technologies come into contact with society's cultural imagination and culture's ability to imagine and support alternative ways of being outside the dopamine-addled consumerist matrix.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Aday, J. S., Davoli, C. C., and Bloesch, E. K. (2020). Psychedelics and virtual reality: parallels and applications. *Ther. Adv. Psychopharmacol.* 10:2045125320948356. doi: 10.1177/2045125320948356

Alexander, B. K. (2010). *The Globalization of Addiction: A Study in Poverty of the Spirit*. Oxford, New York: Oxford University Press.

Alter, A. (2017). *Irresistible: The rise of Addictive Technology and the Business of Keeping us Hooked*. New York: Penguin Press.

Anton, C. (2012). "Drugs as environments: being inside what is inside us" in *Drugs & Media: New Perspectives on Communication, Consumption, and Consciousness*. ed. R. C. MacDougall (New York: Continuum International Publishing Group), 35–51.

Arnott, R. (2018). Technodelic manifesto. *SoundSelf*. Available at: https://www.soundself.com/technodelic-manifesto (Accessed September 20, 2022).

Barbrook, R., and Cameron, A. (1996). The californian ideology. *Sci. Cult.* 6, 44–72. doi: 10.1080/09505439609526455

Bijker, W. E. (1997). *Of bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change*. Cambridge, MA: The MIT Press.

Brand, S. (1972). *Spacewar: Fanatic Life and Symbolic Death Among the Computer Bums*. Rolling Stone.

Brown, D. J. (2013). *The New Science of Psychedelics: At the Nexus of Culture, Consciousness, and Spirituality. 1st Edn.* Rochester, Vermont: Park Street Press.

Brunner, E. (2014). Asking (new) media questions: thinking beyond the twitter revolution. *Explorations Media Ecol.* 13, 269–283. doi: 10.1386/eme.13.3-4.269_1

Callon, M. (1984). Some elements of a sociology of translation: domestication of the scallops and the fishermen of St Brieuc Bay. *Sociol. Rev.* 32, 196–233. doi: 10.1111/j.1467-954X.1984.tb00113.x

Carr, N. G. (2010). *The Shallows: What the Internet is Doing to our Brains*. New York: W.W. Norton.

Cultural Frontiers in the Age of Information (1994). Available at: https://www.youtube.com/watch?v=9iPwVuCO2PM (Accessed October 15, 2022).

Cyber Mushroom (2022). Cyber Mushroom HOME. Available at: https://www.cybermushroom.com/ (Accessed September 20, 2022).

Cyberdelic Society Home (2020). *TheCyberdelicSociety*. Available at: https://www.cyberdelicsociety.com (Accessed September 20, 2022).

CyborgNest | Human Augmentation Technologies and Sensory Enhancements (2022). *CyborgNest*. Available at: https://www.cyborgnest.net (Accessed October 16, 2022).

Daudén Roquet, C., and Sas, C. (2018). "Evaluating mindfulness meditation apps" in *Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems CHI EA '18* (New York, NY: Association for Computing Machinery), 1–6.

Davis, E. (2015). *Techgnosis: Myth, Magic & Mysticism in the Age of Information*. New York, NY: North Atlantic Books.

Dery, M. (1996). *Escape Velocity: Cyberculture at the End of the Century. 1st*. New York: Grove Pr.

Dossey, L. (2014). FOMO, digital dementia, and our dangerous experiment. *Explore: J. Sci. Healing* 10, 69–73. doi: 10.1016/j.explore.2013.12.008

Duménil, G., Duménil, G., and Lévy, D. (2011). *The Crisis of Neoliberalism*. Cambridge, Mass: Harvard University Press.

Evans, J. (2022). Timothy Leary's psychedelic eugenics. *Spiritual Eugenics*. Available at: https://medium.com/spiritual-eugenics/timothy-learys-psychedelic-eugenics-7cd28f42764d (Accessed October 12, 2022).

Eyal, N. (2014). in *Hooked: How to Build Habit-Forming Products*. ed. R. Hoover (New York, NY: Portfolio)

Faiola, A., Vatani, H., and Srinivas, P. (2018). "The impact of smartphone use on the psychosocial wellness of college students" in *Digital Transformation and Global Society Communications in Computer and Information Science*. eds. D. A. Alexandrov, A. V. Boukhanovsky, A. V. Chugunov, Y. Kabanov and O. Koltsova (Cham: Springer International Publishing), 264–276.

Fairfield, R., and Miller, T. (2010). *The Modern Utopian: Alternative communities of the '60s and '70s. Illustrated* Port Townsend, WA: Process.

Fan, R., Xu, K. E., and Zhao, J. (2016). Higher contagion and weaker ties mean anger spreads faster than joy in social media. *arXiv preprint arXiv:1608.03656*. doi: 10.48550/arXiv.1608.03656

Feldstein, S. (2021). *The Rise of Digital Repression: How Technology is Reshaping Power, Politics, and Resistance. 1st Edn.* New York, NY: Oxford University Press.

Gamio, L., and Goodman, P. S. (2021). How the supply chain crisis unfolded. *The New York Times*. Available at: https://www.nytimes.com/interactive/2021/12/05/business/economy/supply-chain.html (Accessed October 3, 2022).

Glowacki, D. R., Williams, R. R., Wonnacott, M. D., Maynard, O. M., Freire, R., Pike, J. E., et al. (2022). Group VR experiences can produce ego attenuation and connectedness comparable to psychedelics. *Sci. Rep.* 12, 1–17. doi: 10.1038/s41598-022-12637-z

Glowacki, D. R., Wonnacott, M. D., Freire, R., Glowacki, B. R., Gale, E. M., Pike, J. E., et al. (2020). Isness: using multi-person VR to design peak mystical-type experiences comparable to psychedelics. *arXiv:2002.00940 [cs]*. doi: 10.1145/3313831.3376649

Gómez-Busto, F. J., and Ortiz, M. I. (2020). Virtual reality and psychedelics for the treatment of psychiatric disease: a systematic literature review. *Clin. Neuropsychiatry J. Treat. Eval.*

Greenfield, A. (2018). *Radical Technologies: The Design of Everyday Life. Reprint* London, New York: Verso.

Griffiths, R. R., Richards, W. A., McCann, U., and Jesse, R. (2006). Psilocybin can occasion mystical-type experiences having substantial and sustained personal meaning and spiritual significance. *Psychopharmacology* 187, 268–283. doi: 10.1007/s00213-006-0457-5

Grof, S. (2008). *LSD Psychotherapy. 4th Edn*. Sarasota, FL: MAPS.

Hacking, I., and Hacking, J. (1999). *The Social Construction of What?* Cambridge, Mass: Harvard University Press.

Hagerty, L. (2000). *The Spirit of the Internet: Speculations on the Evolution of Global Consciousness*. Tampa, FL: Matrix Masters, Inc.

Hagerty, L. (2007). "Techno pagans at the end of history" – Psychedelic Salon Podcasts. Available at: https://psychedelicsalon.com/podcast-116-techno-pagans-at-the-end-of-history/ (Accessed October 12, 2022).

Hardon, A., and Sanabria, E. (2017). Fluid drugs: revisiting the anthropology of pharmaceuticals. *Annu. Rev. Anthropol.* 46, 117–132. doi: 10.1146/annurev-anthro-102116-041539

Harsh, A. (2017). Are digital devices the modern cocaine infecting our kids' lives – literally? *Huffington post*. Available at: https://www.huffingtonpost.com/entry/are-digital-devices-the-modern-cocaine-infecting-our_us_58fad72de4b0f02c3870ea56 (Accessed February 20, 2018).

Hartogsohn, I. (2015). The Psycho-Social Construction of LSD: How Set and Setting Shaped the American Psychedelic Experience 1950-1970.

Hartogsohn, I. (2017). Constructing drug effects: a history of set and setting. *Drug Sci. Policy Law* 3:205032451668332. doi: 10.1177/2050324516683325

Hartogsohn, I. (2018). The meaning-enhancing properties of psychedelics and their mediator role in psychedelic therapy, spirituality, and creativity. *Front. Neurosci.* 12, 1–5. doi: 10.3389/fnins.2018.00129

Hartogsohn, I. (2020). *American Trip: Set, Setting, and the Psychedelic Experience in the Twentieth Century*. Cambridge, Massachusetts: The MIT Press.

Hartogsohn, I. (2022). Virtual Daime: when psychedelic ritual migrates online. *Front. Psychol.* 13. Available at:. doi: 10.3389/fpsyg.2022.819994

Hartogsohn, I., and Vudka, A. (2022). Technology and addiction: what drugs can teach us about digital media. *Transcult. Psychiatry* 13634615221105116 :136346152211051. doi: 10.1177/13634615221105116

Hauskeller, C., Artinian, T., Fiske, A., Schwartz Marin, E., González Romero, O. S., Luna, L. E., et al. (2022). Decolonization is a metaphor towards a different ethic. The case from psychedelic studies. *Interdiscip. Sci. Rev.*, 1–20. doi: 10.1080/03080188.2022.2122788

Havelock, E. A., and Havelock, L. (1963). *Preface to Plato*. Cambridge, Massachusetts: Harvard University Press.

Huddleston, B. (2016). *Digital cocaine: a journey toward iBalance*. Available at: https://www.amazon.com/Digital-Cocaine-Journey-Toward-iBalance/dp/143211526X#customerReviews

Innis, H. A. (2007). in *Empire and Communications*. ed. A. J. Watson (Toronto: Dundurn)

Innis, H. A. (2008). *The Bias of Communication* University of Toronto Press.

Jablonsky, R. (2022). Meditation apps and the promise of attention by design. *Sci. Technol. Hum. Values* 47, 314–336. doi: 10.1177/01622439211049276

Jasanoff, S. ed. (2004). *States of Knowledge: The Co-production of Science and the Social Order. 1st* London: Routledge.

Jiskrova, G. K. (2022). Impact of COVID-19 pandemic on the workforce: from psychological distress to the great resignation. *J. Epidemiol. Community Health* 76, 525–526. doi: 10.1136/jech-2022-218826

Johnson, M. W., Hendricks, P. S., Barrett, F. S., and Griffiths, R. R. (2019). Classic psychedelics: an integrative review of epidemiology, therapeutics, mystical experience, and brain network function. *Pharmacol. Ther.* 197, 83–102. doi: 10.1016/j.pharmthera.2018.11.010

Kardaras, N. (2017). *Glow Kids: How Screen Addiction is Hijacking Our Kids – and How to Break the Trance. Reprint Edn.* New York: St. Martin's Griffin.

Klimburg, A. (2017). *The Darkening Web: The War for Cyberspace*. New York: Penguin Press.

Langford, T. (2019). Return to nature: how media art heals? *Proc. EVA London* 2019, 394–401. doi: 10.14236/ewic/EVA2019.73

Langlitz, N. (2011). "Political neurotheology: emergence and revival of a psychedelic alternative to cosmetic psychopharmacology" in *Neuroculture: Glimpses into an Expanding Universe*. eds. F. Ortega and F. Vidal (Frankfurt/M: Lang), 141–165.

Langlitz, N., Dyck, E., Scheidegger, M., and Repantis, D. (2021). Moral psychopharmacology needs moral inquiry: the case of psychedelics. *Front. Psych.* 12. doi: 10.3389/fpsyt.2021.680064

Lanier, J. (2017). *Dawn of the New Everything: Encounters with Reality and Virtual Reality. 1st Edn.* New York: Henry Holt and Co.

Lanier, J. (2018). *Ten Arguments for Deleting Your Social Media Accounts Right Now* Random House.

Latour, B. (1993). *We Have Never Been Modern*. Cambridge, MA: Harvard University Press.

Latour, B. (2007). *Reassembling the Social: An Introduction to Actor-Network-Theory*. OUP: Oxford.

Leary, T. (1993). *NeuroLogic*. Solothurn, Löhrbach: Nachtschatten; Medienexperimente.

Leary, T. (1998). *The Politics of Ecstasy*. *4th*. Berkeley, CA: Ronin Publishing.

Lee, M. A., and Shlain, B. (1992). *Acid Dreams: The Complete Social History of LSD: The CIA, the Sixties, and Beyond*. *Revised* New York: Grove Press.

Lembke, A. (2021). *Dopamine Nation: Finding Balance in the Age of Indulgence* Penguin.

Lievrouw, L. A., and Livingstone, S. (2016). *Handbook of New Media: Social Shaping and Consequences of ICTs*. London: Sage.

MacKenzie, D. A., and Wajcman, J. (1999). *The Social Shaping of Technology*. Buckingham: Open University Press.

Martin, M. W. (2021). Mindful technology. *Sci. Technol. Virtues: Contemp. Perspect.* 97, 97–116. doi: 10.1093/oso/9780190081713.003.0006

Mastropietro, C., and Vervaeke, J. (2020). Diagnosing the current age: a symptomology of the meaning crisis. Available at: https://thesideview.co/journal/diagnosing-the-current-age/ (Accessed September 5, 2022).

McLuhan, M. (1964). Notes on Burroughs. *The Nation*, 517–519.

McLuhan, M. (2003). *Understanding Media: The Extensions of Man*. *Critical* Corte Madera, CA: Gingko Press.

McLuhan, M., Fiore, Q., and Agel, J. (1968). *War and Peace in the Global Village*. New York Bantam Books.

Microdose, V. R. (2022). Available at: https://microdosevr.com/ (Accessed September 20, 2022).

Miller, T. (1999). *The 60's Communes: Hippies and Beyond*. Syracuse, NY: Syracuse University Press.

Morozov, E. (2011). *The Net Delusion: The Dark Side of Internet Freedom*. New York: Public Affairs.

Muse Muse – Meditation Made Easy (2021). *Muse*. Available at: https://choosemuse.com/ (Accessed October 17, 2022).

Neumann, M. M. (2016). Young children and screen time: creating a mindful approach to digital technology. *Australian Educ. Comput.* 30, 26–36.

Neuvana, X. (2022). Companion bundle – EU/UK/CAN. *Neuvana*. Available at: https://neuvanalife.com/products/xen-companion-bundle-europe (Accessed October 17, 2022).

Newport, C. (2019). *Digital Minimalism: Choosing a Focused Life in a Noisy World* Penguin.

Noorani, T. (2021). *Digital Psychedelia: Hidden Experience and the Challenge of Paranoia*. Somatosphere. Available at: http://somatosphere.net/2021/digital-psychedelia.html/

Pace, B. A., and Devenot, N. (2021). Right-wing psychedelia: case studies in cultural plasticity and political pluripotency. *Front. Psychol.* 12:733185. doi: 10.3389/fpsyg.2021.733185

Pesce, M. (2000). Psychedelics and the creation of virtual reality. *MAPS Bulletin X*, 4–5.

Phillips, T. (2017). "Electronic heroin": China's boot camps get tough on internet addicts. *The Guardian*. Available at: http://www.theguardian.com/world/2017/aug/28/electronic-heroin-china-boot-camps-internet-addicts (Accessed February 20, 2018).

Piketty, T. (2014). Capital in the 21st Century. doi: 10.4159/9780674369542

Pinch, T. J. (2009). "The social construction of technology (SCOT): the old, the new and the nonhuman" in *Material Culture and Technology in Everyday Life: Ethnographic Approaches*. ed. P. Vannini (New York: Peter Lang), 45–59.

Pollan, M. (2018). *How to Change Your Mind: What the New Science of Psychedelics Teaches us About Consciousness, Dying, Addiction, Depression, and Transcendence*. New York: Penguin Press.

Rosen, L. D., Carrier, L. M., Pedroza, J. A., Elias, S., O'Brien, K. M., Lozano, J., et al. (2018). The role of executive functioning and technological anxiety (FOMO) in college course performance as mediated by technology usage and multitasking habits. *Psicol. Educ. (Madr)* 24, 14–25. doi: 10.5093/psed2018a3

Rozgonjuk, D., Sindermann, C., Elhai, J. D., and Montag, C. (2020). Fear of missing out (FoMO) and social media's impact on daily-life and productivity at work: do WhatsApp, Facebook, Instagram, and Snapchat use disorders mediate that association? *Addict. Behav.* 110:106487. doi: 10.1016/j.addbeh.2020.106487

Schneider, W. L. (1967). Some consequences of the LSD revolution. *Psychedelic Rev.* 9, 50–57.

Schwartzman, D. J., Schartner, M., Ador, B. B., Simonelli, F., Chang, A. Y.-C., and Seth, A. K. (2019). Increased spontaneous EEG signal diversity during stroboscopically-induced altered states of consciousness. *BioRXiv*:511766. doi: 10.1101/511766

Schwarz-Plaschg, C. (2022). Socio-psychedelic imaginaries: envisioning and building legal psychedelic worlds in the United States. *Eur. J. Futures Res.* 10, 1–16. doi: 10.1186/s40309-022-00199-2

Sekula, A. D., Downey, L., and Puspanathan, P. (2022). Virtual reality as a moderator of psychedelic-assisted psychotherapy. *Front. Psychol.* 13:813746:13. doi: 10.3389/fpsyg.2022.813746

Serrano, M. T. (2020). Fear of missing out (FoMO) and Instagram use: analysis of the relationships between narcisim and self-esteem. *Aloma: Revista de Psicologia. Ciències de l'Educació i de l'Esport* 38, 31–38. doi: 10.51698/aloma.2020.38.1.31-38

Sessa, B. (2012). *The Psychedelic Renaissance: Reassessing the Role of Psychedelic Drugs in 21st Century Psychiatry and Society*. London: Muswell Hill Press.

Smith, C. H. (2019a). Exploring double consciousness using Holotech to develop Hyperhumanism. Available at: https://www.youtube.com/watch?v=MTjrJPZa5lo (Accessed October 13, 2022).

Smith, C. H. (2019b). Reality Hacking as intelligence augmentation. Available at: https://www.youtube.com/watch?v=vDiaYB37NcI (Accessed October 16, 2022).

Smith, M. R., and Marx, L. (1994). *Does Technology Drive History?: The Dilemma of Technological Determinism*. Cambridge, MASS: MIT Press.

Smith, C. H., and Warner, M. (2022). Cyberdelics: context engineering psychedelics for altered traits. *Proc. EVA London* 2022, 252–259. doi: 10.14236/ewic/EVA2022.48

Srnicek, N. (2016). *Platform Capitalism*. *1st* Edn Polity.

Strassman, R., Wojtowicz, S., Luna, L. E., and Frecska, E. (2008). *Inner Paths to Outer Space: Journeys to Alien Worlds Through Psychedelics and Other Spiritual Technologies*. Rochester, Vermont: Park Street Press.

Sull, D., Sull, C., and Zweig, B. (2022). Toxic culture is driving the great resignation. *MIT Sloan Manag. Rev.* 63, 1–9.

Sutton, T. (2020). Digital harm and addiction: an anthropological view. *Anthropol. Today* 36, 17–22. doi: 10.1111/1467-8322.12553

Timmermann, C., Watts, R., and Dupuis, D. (2020). Towards psychedelic apprenticeship: developing a gentle touch for the mediation and validation of psychedelic-induced insights and revelations. *Transcultural Psychiatry*. 59:13634615221082796. doi: 10.31234/osf.io/j5768

Turkle, S. (2011). *Alone Together: Why we Expect More from Technology and Less from Each Other*. New York: Basic Books Available at: http://public.eblib.com/choice/publicfullrecord.aspx?p=684281 (Accessed December 19, 2016).

Turner, F. (2006). *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism*. Chicago: University Of Chicago Press.

Tvorun-Dunn, M. (2022). Acid liberalism: Silicon Valley's enlightened technocrats, and the legalization of psychedelics. *Int. J. Drug Policy* 110:103890. doi: 10.1016/j.drugpo.2022.103890

Twenge, J. M. (2017a). Have smartphones destroyed a generation? – the Atlantic. *Atlantica* Available at: https://www.theatlantic.com/magazine/archive/2017/09/has-the-smartphone-destroyed-a-generation/534198/ (Accessed February 19, 2018).

Twenge, J. M. (2017b). "Who is iGen? And how do we know?," in *IGen: Why Today's Super-Connected Kids are Growing up Less Rebellious, More Tolerant, Less Happy–and Completely Unprepared for Adulthood–and What that Means for the Rest of us* (New York: Simon and Schuster), 1–16.

Vervaeke, J., Mastropietro, C., and Miscevic, F. (2017). *Zombies in Western culture: A Twenty-First Century Crisis. Hardback*. Cambridge, UK: Open Book Publishers.

Virtual Awakening (n.d.). DEATH IS ONLY THE BEGINNING. *virtual-awakening*. Available at: https://www.virtual-awakening.com/death-is-only-the-beginning (Accessed September 20, 2022).

Wajcman, J. (2016). *Pressed for Time: The Acceleration of Life in Digital Capitalism*. *Reprint*. Chicago London: University of Chicago Press.

Waldrop, M. M. (2017). Virtual reality therapy set for a real renaissance. *Proc. Natl. Acad. Sci. U. S. A.* 114, 10295–10299. doi: 10.1073/pnas.1715133114

Wildman, W. J., and Stockly, K. J. (2021). *Spirit Tech: The brave New World of Consciousness Hacking and Enlightenment Engineering*. New York: St. Martin's Publishing Group.

Zuboff, S. (2019). *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* PublicAffairs.

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What good are psychedelic humanities?

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The revival of psychedelic research has been dominated by the biomedical sciences. Yet it raises questions that cannot be answered by laboratory experiments and clinical trials alone. Among these are questions pertaining to the conceptual and practical frameworks that render experimental and clinical findings meaningful. Psychedelic humanities clarify the historical presuppositions, philosophical blind spots, and political stakes of different approaches to psychedelics. In this emergent field, many scholars evaluate such alternatives epistemologically, ethically, or politically. However, they could just as well refrain from offering normative orientation and instead increase the complexity of the observed phenomena by opening other possible perspectives, leaving it to their readers to reduce the resulting complexity in novel ways. This enables clinical psychiatrists, laboratory scientists, and other practitioners to use (or abuse) psychedelic humanities scholarship for their own purposes. The article concludes with a note on the institutionalization of such collaboration at The New School's Psychedelic Humanities Lab.

KEYWORDS

psychedelics, humanities, philosophy, bioethics, humanities laboratory, anthropology, history

Introduction

Since the 1990s, there has been a revival of psychedelic research, which – until the 2010s – was largely confined to the biomedical sciences (Langlitz, 2012a). However, psychedelic experiences raise many questions that cannot be answered by laboratory experiments or clinical trials alone. Laboratory experiments or clinical trials also cannot answer questions about their own place in the larger knowledge culture emerging around psychedelic drugs. Nor can Western societies fall back on old customs to respond to the substances' expanding medical and nonmedical applications. Instead, they need to think for themselves what psychedelic experiences mean and what their value to late modern life is. Questions of meaning and value are the subject matter of the humanities. Hence, it comes as no surprise that, in the past 15 years, the transition from preclinical research to clinical research has been accompanied by a rise of humanities scholarship on psychedelics. What good are these budding psychedelic humanities?

Note that "the humanities" are not one thing. The empirical research that historians conduct in archives has little in common with the conceptual work that philosophers do in their armchairs. A philologist and a queer theorist will approach one and the same text in radically different manners. The psychedelic humanities also comprise many different styles of thinking and doing. They are asking different questions, which require different methods. But they also articulate different answers to the same question. In the biomedical sciences, controversy indicates that a fact has not yet been fully established. Once it has, controversy will come to an end. Some humanities scholarship also establishes standards that allow no falling back. For example, the discovery of a new set of historical documents or a logical flaw in a philosophical argument can create such milestones. But, for the most part, the humanities do not aim at the kind of durable consensus that we associate with

scientific facts. History needs to be rewritten as it proceeds, classical literature allows for multiple interpretations and reinterpretations, and philosophers will continue to disagree over moral and epistemological principles. Such perspectival pluralism is what the psychedelic humanities have to offer to liberal democratic societies that are reevaluating psychedelics without the guardrails of tradition (Langlitz, 2019).

Enlightened Perspectivism

This perspective on the psychedelic humanities also only marks one of many possible perspectives and makes certain determinations rather than others. It considers the psychedelic humanities as part of what social theorist Niklas Luhmann called the Sociological Enlightenment. The Enlightenment of the 17th and 18th centuries promoted rationality, the empirical observation of the world, as well as moral and political progress. By contrast, the Sociological Enlightenment of the 19th and 20th centuries promoted the observation of other observers, which reveals their standards of rationality, empiricism, morality, and politics to be contingent on the observers' standpoints – and these standpoints to be contingent on their historical situations and cultural contexts (Luhmann, 1998; Rabinow, 2008). The humanities do not necessarily determine what is or should be the case but can also examine how others make such determinations. In eyes of Luhmann, the key question was which conceptual distinctions were used in the process. For instance, biological psychiatrists operate with the distinction between the normal and the pathological while psychoanalysts privilege the distinction between the conscious and the unconscious. What do these distinctions enable therapists to see and what do they obfuscate? What blind spots do they engender?

To give an example, while biomedical reports on clinical trials focus on the reduction of psychopathological symptoms and the restoration of mental health, they ignore that the involved psychotherapists could have worked toward additional goals such as rendering unconscious conflicts conscious, increasing the patient's autonomy by enabling greater self-care when mental illness strikes again. Yet representatives of competing schools of psychotherapy might deem the fostering of such autonomy misguided and instead employ psychedelics to dissolve the patient's ego because it stands in the way of her "inner healing intelligence" (Davis, 2022). Shedding light on the divergent psychological theories and ethical perspectives that inform clinical work would make the field of psychedelic therapy more transparent and enable critical reflection on values underlying alternative approaches. The psychedelic renaissance could profit from being sociologically enlightened.

There is no need to tie the psychedelic humanities to the specifics of Luhmann's conceptual framework. There are many other frameworks available, which are less schematic and allow for empirically richer observations of how other observers observe the world. Some have found their way into the scientific literature on psychedelics, for example, when researchers present the resumption of psychedelic-assisted psychotherapy as a "paradigm shift." (Schenberg, 2018) Philosopher of science Thomas Kuhn had introduced this notion to analyze fundamental changes in the basic concepts and research practices in a scientific discipline (Kuhn, 1962). Plain historiography or ethnography that refrains from theorizing its material the way Kuhn did also reveals differences in perspective. Take Erika Dyck's history of psychedelic psychiatry, which contrasts the field's initial enthusiasm in the 1950s with its demise in the 1960s (Dyck, 2008), my account of how the preclinical phase of the revival of psychedelic research differed from the first wave of psychedelic research studied by Dyck (Langlitz, 2012a), Ido Hartogsohn's book on how the collective set and setting and thus the psychedelic experience changed over the course of the 20th century in the United States (Hartogsohn, 2020), or Claudia Schwarz-Plaschg's sociological comparison of how the uses of psychedelics are imagined in biomedical, legal, and religious contexts (Schwarz-Plaschg, 2022). What these studies have in common is that they demonstrate that different historical, cultural, and disciplinary contexts enable different perspectives on psychedelics and that the contemporary biomedical perspective represents one possibility among several. And ethnographic research on the contemporary biomedical perspective reveals that there is even more difference within: psychedelic psychiatry is not monolithic but allows for a variety of competing perspectives and applications, which are enabled and constrained by the specific substances and the standpoints of their observers and users (Langlitz, 2012a, 2022). By showing that representations and reality are not as tightly coupled as they seem, alternative forms of representation become conceivable. For example, placebo-controlled trials might reveal one side of psychedelic drug action, culture-controlled trials reveal another (Langlitz, 2012b). Psychedelic humanities depart from the recognition that reasonable people can disagree and that their views of what knowledge counts as rational and empirical depend on their socialization and social field as well as the cultural and historical context in which they work. Their contribution to the revival of psychedelic research is to sharpen actors' sense of contingency and possibility.

Possibility, not normativity

Under the banner of "psychedelic studies," literary scholar Neşe Devenot proposed to expand psychedelic research from medicine and anthropology to philosophy and the humanities. The best model for such a post-disciplinary field would be queer studies, she argued. After all, queer is whatever is at odds with the normal, the legitimate, and the dominant – and the "psychedelic identities" that people formed around drug-induced states of mind were just as deviant and oppressed as a traditionally queer lifestyle. Like queer studies, psychedelic studies of Devenot (2013) contribute to an emancipatory project that advances the moral principle of equality by examining the world from the point of view of the oppressed. Inducing such perspectival shifts that align scholarship with political causes has become a widely adopted approach in the humanities, including the psychedelic humanities. Insofar as it recognizes that knowledge depends on the position of the knower, this form of academic *littérature engagée* is one way of contributing to the Sociological Enlightenment.

Another way for the psychedelic humanities would be to drop the impulse of critique and moral betterment. There is little evidence that obtaining postgraduate degrees in the humanities makes people more moral than their fellow citizens (Fish, 2008; Schwitzgebel, 2009). Moreover, moralizing an issue makes all further communication difficult because both sides claim the moral high ground and disparage the other as immoral. Even though psychedelic research has so far escaped the politicization that haunts climate science in the Anthropocene or epidemiology in the COVID-19 pandemic, the field's inside temperature has risen markedly in recent years. Morally charged debates over intellectual property rights and the cultural appropriation of indigenous knowledge have ravaged social relations in the so-called psychedelic community. Everything can be cast as a moral issue, nothing has to

be – and often it is better to adopt a different perspective and ask if a scientific finding is true or false, or whether a new pharmaceutical formulation is new enough to be patentable. Luhmann once quipped that it was the most pressing task of ethics to warn against morality (Luhmann, 1991). Here, *ethics* designates a theoretical reflection of morality, which not only considers the appropriateness of particular moral norms but also the appropriateness of applying *any* moral norm to judge a given situation. If the psychedelic humanities aspire to normative engagement, as many kinds of humanities scholarship do, it might be more germane to do so in the form of ethical reflection on when (not) to moralize and how else to evaluate what is happening in psychedelic research and culture (Langlitz, 2020a,b).

But ethical reflection hardly exhausts the psychedelic humanities. Literary theorist Hans Ulrich Gumbrecht argues that one key task of humanists is to render phenomena more complex, for example, by opening alternative perspectives and confronting established interpretations with inconvenient facts, improbable findings, and counterintuitive insights (Gumbrecht, 2003). Tightly integrated with the (social) scientific study of extrapharmacological factors, psychedelic humanities remind laboratory researchers that the effects observed in the kind of people who participate in their more or less controlled trials are not necessarily the effects to be observed as psychedelics are used in very different settings and practices by people with very different mindsets. For example, in the face of scientific studies suggesting that psychedelics promote left-wing, anti-authoritarian, and pro-environmental attitudes, the historical and ethnographic archive presents cases of right-wing and authoritarian uses of psychedelics (Piper, 2015; Nour et al., 2017; Langlitz, 2020c; Pace and Devenot, 2021). While the denunciation of rightist currents in psychedelia reduces moral complexity by discriminating between good and bad applications, the discovery of the cultural plasticity and political pluripotency of psychedelics increases epistemic complexity by showing that psychedelic drug action can be complicated by social factors, which require both moral and psychopharmacological inquiry (Langlitz et al., 2021).

Increasing complexity is no good in itself (taking action, whether politically or clinically, requires the simplification of choices). But it does present actors with additional choices that had not been available to them: metrics to evaluate the effects of psychedelics beyond the opposition of the normal and the pathological; methodologies to study the drugs' transformative powers beyond placebo-controlled trials; Research & Development practices that extend drug design from molecules to the extrapharmacological factors that modulate drug action. The latter might include writing philosophical essays that shape psychedelic experiences in the 21st century as profoundly as Aldous Huxley's *The Doors of Perception* shaped psychedelic experiences in the 20th century (Huxley, 1954). The goal of the psychedelic humanities is to sharpen the sense of possibility and expand the imagination of the psychedelic renaissance.

Such a sense of possibility allows researchers to gain some distance from reality to think up other realities, which attunes them to both new opportunities and risks. As psychedelics come to be used in more diverse settings, their transformative potential will be harnessed to very different therapeutic and ethical projects (and many, maybe all therapeutic projects have an ethical subtext). A better understanding of this complexity enables researchers to imagine novel contexts of use for a class of drugs that is known to work in a highly context-dependent manner and could facilitate a burst of badly needed innovation in psychopharmacology (Langlitz, 2022). It also protects against a complacent attitude that assumes that effects observed in one historical or cultural context will necessarily be observed in other contexts. Taken at the retreat of a pharmaceutical start-up in 2022, LSD might still alter a user's sociopolitical outlook but not in the same way as when it was taken at the Woodstock Music Festival in 1969. Recognizing the contingency of normative commitments, including one's own, can civilize debate in any social field over where it should be heading – an insight that could benefit the psychedelic renaissance as it is becoming increasingly contentious.

The psychedelic humanities lab

In the anglophone world, many universities have responded to the growing scientific and public interest in psychedelic drugs by creating research centers dedicated to their investigation. For the most part, these initiatives focus on clinical and preclinical research. In light of the above plea for psychedelic humanities, psychedelic research centers would be well advised to create positions for resident humanists, not cordoned off into separate research groups but closely collaborating with neuroscientists and psychiatrists. The work that philosopher Chris Letheby or cultural anthropologist David Dupuis have conducted with brain researchers and clinical psychologists uses neuroscientific data to develop a theory of how psychedelics work (Timmermann et al., 2021, 2022). Ethnographically informed and philosophically oriented research in neuropsychopharmacology laboratories offers a different model that feeds second-order observations of psychedelic research back into the research process (Langlitz, 2010, 2012a; Hendy, 2022). Yet another model would integrate bioethicists in laboratories and clinical trials: instead of evaluating the social consequences that psychedelics might have "downstream" from science on society, normatively engaged humanities scholar could get involved "upstream" in the design of novel applications (Rabinow and Bennett, 2012; Earp and Yaden, 2021; Langlitz et al., 2021). This article is not the place to provide a systematic review of projects already underway. If conducive institutional conditions are created, many more will be invented in the next years. Considering the simultaneously challenging and culturally creative social history of psychedelics, the revival of psychedelic research might find a good example in the Human Genome Project, which spent 5% of its budget on the ethical, legal, and social implications (ELSI) of genomic science. However, facing the peculiar cultural plasticity of the drugs' psychotropic effects, psychedelic research cannot simply fall back on the ELSI program but must develop novel forms of collaborative research that aligns natural science, social research, and humanities scholarship.

At The New School, we have opened the first laboratory that studies psychedelics in their social and cultural contexts from a humanist perspective. In the wake of the "laboratory turn" in the humanities, the Psychedelic Humanities Lab brings together researchers and students with different disciplinary skillsets to collaborate on psychedelic research projects that cut across the ontological divide of nature and culture (Breithaupt, 2017; Pawlicka-Deger, 2020). Since its inception in the 19th century, the underlying metaphysics that imagined human things as separate from natural things has lost purchase in a world where *Homo sapiens* alters the climate by burning fossil fuels and his mind by ingesting psychotropics. And yet the institutionalization of this outdated order of being in separate Faculties of Art and Faculties of Science perpetuates the corresponding order of knowledge. In recent decades, we have seen many attempts at bridging the gap between the sciences and the humanities, from sociobiology to multispecies ethnography and

from neurophilosophy to critical neuroscience. Considering the cultural plasticity of their neurobiological effects, psychedelics offer an opportunity for conducting experiments not just with the drugs themselves but also with the research practices through which we come to know their effects. Psychedelic humanities serve as a platform to rethink both neuropsychopharmacology and the literature concerned with human culture.

The work of the Psychedelic Humanities Lab starts from the assumption that psychedelics pose socially inflected questions of meaning and value that are independent of their therapeutic value. While the clinical efficacy and marketability of psychedelic drugs will significantly affect their (re-)introduction into mainstream science and society, the lab has no stakes in their successful medicalization or commercialization but seeks to inform the debate over both medical and nonmedical perspectives. It aims at apprehending our time in thought and understanding what difference the psychedelic renaissance introduces with respect to the first wave of psychedelic research. It analyzes how psychedelics shape ideologically very different ethical and political projects, ranging from different brands of mysticism, neoanimism, ecofeminism, radical humanism, anti-racism, and alt-right ideology. These competing normative frameworks shape the varieties of psychedelic experience today and might be amplified by the use of drugs that can increase suggestibility and induce a so-called noetic feeling of gaining direct knowledge of something grand or important about reality. Their unique psychopharmacological effects make psychedelics a double-edged sword that requires careful social scientific analysis and philosophical reflection (Timmermann et al., 2022). Such work contributes to a theoretical understanding of the cultural and historical plasticity of psychedelics. Fostering second-order observation, the Psychedelic Humanities Lab also draws attention to the contingency of any conceptual framework to keep the theoretical imagination supple and rooted in the multifariousness of human life. It understands the humanities as an inherently diverse and dissensual field (Márkus, 1987). Therefore, it does not promote any one theoretical or normative agenda in particular but the Socratic ideal of following the argument where it leads, unbridled by received wisdom or practical, social, and political implications of the conclusions reached. In the emergent field of psychedelic humanities, cultivating such a willingness to freely stay on the move between alternative points of view represents one of several possibilities.

What good is such noncommitment? It temporarily relaxes ingrained ways of thinking and doing and enables people to subsequently think and do things differently. Supposedly, this is also what psychedelics are good for (Pollan, 2018; Carhart-Harris and Friston, 2019). It may be argued that it is specifically this mind-loosening quality that makes this brand of humanities psychedelic.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

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The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Breithaupt, F. (2017). Designing a lab in the humanities. *Chron. High. Educ.* Available at: https://www.chronicle.com/article/designing-a-lab-in-the-humanities/ (Accessed January 29, 2022).

Carhart-Harris, R. L., and Friston, K. J. (2019). REBUS and the anarchic brain: toward a unified model of the brain action of psychedelics. *Pharmacol. Rev.* 71, 316–344. doi: 10.1124/pr.118.017160

Davis, O. (2022). "Autonomy and autoheteronomy in psychedelically assisted psychotherapy," in *New Interdisciplinary Perspectives On and Beyond Autonomy* (Abingdon: Taylor & Francis), 83–100.

Devenot, N. (2013). "A declaration of psychedelic studies," in *Breaking Conventions: Essays on Psychedelic Consciousness*. eds. C. Adams, A. Waldstein, D. P. Luke, B. Sessa and D. King (London: Strange Attractor Press), 184–195.

Dyck, E. (2008). *Psychedelic Psychiatry: LSD from Clinic to Campus*. Baltimore: The Johns Hopkins University Press.

Earp, B. D., and Yaden, D. B. (2021). Culture, context, and Community in Contemporary Psychedelic Research. *Philos. Psychiatry Psychol.* 28, 217–221. doi: 10.1353/ppp.2021.0033

Fish, S. (2008). Will the humanities save us? The New York *Times*. Available at: https://opinionator.blogs.nytimes.com/2008/01/06/will-the-humanities-save-us/ (Accessed October 6, 2022).

Gumbrecht, H. U. (2003). *Production of Presence: What Meaning Cannot Convey*. Stanford: Stanford University Press, 200.

Hartogsohn, I. (2020). *American Trip: Set, Setting, and the Psychedelic Experience in the Twentieth Century*. Cambridge, MA: MIT Press.

Hendy, K. (2022). What can the chemical hold?: the politics of efficacy in the psychedelic renaissance. *Cult. Med. Psychiatry* 46, 322–343. doi: 10.1007/s11013-021-09708-7

Huxley, A. (1954). *The Doors of Perception*. London: Chatto & Windus.

Kuhn, T. S. (1962). *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.

Langlitz, N. (2010). Kultivierte Neurochemie und unkontrollierte Kultur. [Debate with Malek Bajbouj, Boris Quednow, and Ludwig Jäger]. *Zeitschrift für Kulturwissenschaften*, 61–88.

Langlitz, N. (2012a). *Neuropsychedelia: the Revival of Hallucinogen Research Since the Decade of the Brain*. Berkeley: University of California Press

Langlitz, N. (2012b). "Delirious brain chemistry and controlled culture: exploring the contextual mediation of drug effects" in *Critical Neuroscience: A Handbook of the Social and Cultural Contexts of Neuroscience*. eds. S. Choudhury and J. Slaby (London: Wiley), 253–262.

Langlitz, N. (2019). Psychedelic science as cosmic play, psychedelic humanities as perennial polemics? Or why we are still fighting over max Weber's science as a vocation. *J. Class. Sociol.* 19, 275–289. doi: 10.1177/1468795X19851405

Langlitz, N. (2020a). Devil's advocate: sketch of an amoral anthropology. *HAU* 10, 989–1004. doi: 10.1086/711682

Langlitz, N. (2020b). Warning against and experimenting with morality. *HAU* 10, 1030–1035. doi: 10.1086/711878

Langlitz, N. (2020c). Rightist psychedelia. *Cultural Anthropology Hot Spots*. Available at: https://culanth.org/fieldsights/rightist-psychedelia?x-craft-preview=05DZPjgCnc&token=ZqYAgoBfV3OMGpVfwU-wTlBbgOzqUGKA (Accessed July 26, 2020).

Langlitz, N. (2022). Psychedelic innovations and the crisis of psychopharmacology. *BioSocieties*. 1–22. doi: 10.1057/s41292-022-00294-4

Langlitz, N., Dyck, E., Scheidegger, M., and Repantis, D. (2021). Moral psychopharmacology needs moral inquiry: the case of psychedelics. *Front. Psychol.* 12:680064. doi: 10.3389/fpsyt.2021.680064

Luhmann, N. (1991). Paradigm lost: on the ethical reflection of morality. Speech on the occasion of the award of the Hegel prize 1988. *Thesis Eleven* 29, 82–94. doi: 10.1177/072551369102900107

Luhmann, N. (1998). *Observations on Modernity*. Stanford: Stanford University Press.

Márkus, G. (1987). Why is there no hermeneutics of natural sciences? Some Preliminary Theses. *Sci. Context.* 1, 5–51. doi: 10.1017/S0269889700000041

Nour, M. M., Evans, L., and Carhart-Harris, R. L. (2017). Psychedelics, personality and political perspectives. *J. Psychoactive Drugs* 49, 182–191. doi: 10.1080/02791072.2017.1312643

Pace, B. A., and Devenot, N. (2021). Right-wing psychedelia: case studies in cultural plasticity and political pluripotency. *Front. Psychiatry* 12:733185. doi: 10.3389/fpsyg.2021.733185

Pawlicka-Deger, U. (2020). The laboratory turn: exploring discourses, landscapes, and models of humanities labs. *Digital Humanities Quarterly* 14. Available at: https://research.aalto.fi/en/publications/the-laboratory-turn-exploring-discourses-landscapes-and-models-of (Accessed January 29, 2022).

Piper, A. (2015). *Strange Drugs Make for Strange Bedfellows: Ernst Jünger, Albert Hofmann and the Politics of Psychedelics*. Portland, OR: Invisible College Publishing

Pollan, M. (2018). *How to Change Your Mind: What the New Science of Psychedelics Teaches Us About Consciousness, Dying, Addiction, Depression, and Transcendence*. New York: Penguin, 482.

Rabinow, P. (2008). *Marking Time: On the Anthropology of the Contemporary*. Princeton: Princeton University Press.

Rabinow, P., and Bennett, G. (2012). *Designing Human Practices: An Experiment with Synthetic Biology*. Chicago: University of Chicago Press, 213.

Schenberg, E. E. (2018). Psychedelic-assisted psychotherapy: a Paradigm shift in psychiatric Research and Development. *Front. Pharmacol.* 9:733. doi: 10.3389/fphar.2018.00733

Schwarz-Plaschg, C. (2022). Socio-psychedelic imaginaries: envisioning and building legal psychedelic worlds in the United States. *Eur. J. Fut. Res.* 10:10. doi: 10.1186/s40309-022-00199-2

Schwitzgebel, E. (2009). Do ethicists steal more books? *Philos. Psychol.* 22, 711–725. doi: 10.1080/09515080903409952

Timmermann, C., Kettner, H., Letheby, C., Roseman, L., Rosas, F. E., and Carhart-Harris, R. L. (2021). Psychedelics alter metaphysical beliefs. *Sci. Rep.* 11:22166. doi: 10.1038/s41598-021-01209-2

Timmermann, C., Watts, R., and Dupuis, D. (2022). Towards psychedelic apprenticeship: developing a gentle touch for the mediation and validation of psychedelic-induced insights and revelations. *Transcult. Psychiatry* 59, 691–704. doi: 10.1177/13634615221082796

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'More evolved than you': Evolutionary spirituality as a cultural frame for psychedelic experiences

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One of the dominant cultural frames for psychedelics in western culture over last 130years has been evolutionary spirituality. This tradition suggests human evolution is not finished and can be guided towards the creation of higher beings through such techniques as psychedelics and eugenics or genetic modification. But is everyone evolving into a new species, or just an elite? This essay defines the tradition of evolutionary spirituality and points to five of the ethical limitations of the tradition – its tendency to spiritual narcissism, contempt for the less-evolved masses, Social Darwinism and Malthusianism, spiritual eugenics, and illiberal utopian politics—before suggesting responses to these limitations.

KEYWORDS

psychedelics, psychedelic history, eugenics, transhumanism, spiritual eugenics, evolutionary spirituality, New Age spirituality

1. Defining evolutionary spirituality

One of the dominant cultural frames for psychedelics in western culture over the last 130 years has been evolutionary spirituality (Elcock, 2013). This is a tradition within the broader culture of New Age spirituality, which seeks to synthesize spirituality with evolutionary theory, and which asserts that human evolution is not finished and can be guided towards the creation of higher beings through such techniques as meditation, psychedelics and eugenics or genetic modification (Ferguson, 1981, pp. 157–162; Herrick, 2003, pp. 118–148; Huston, 2007; Hubbard, 2015).

Evolutionary spirituality has historical roots in eighteenth-century ideas of the improvement and possible perfectibility of humans. Scottish enlightenment philosophers such as Adam Smith and Adam Ferguson suggested cultures naturally evolve into higher stages, from hunter-gathering to farming to industrial capitalism (Palmeri, 2013, pp. 1–26). William Godwin and the Marquis de Condorcet predicted science could advance so far that humans would become immortal, blissful beings (Chonaill, 2007). The Reverend Thomas Malthus, while criticizing Godwin's utopianism, put forward his own version of evolutionary progressivism, writing that the world is a "mighty process for the creation and formation of mind' in which malformed specimens get broken while 'those vessels whose forms are full of truth, grace and loveliness, will be wafted into happier situations, near the presence of the mighty maker" (Malthus, 1966, p. 247). In the 19th century, German idealists like Fichte, Schelling and Hegel thought that God or Spirit evolved in a dynamic process throughout human history, manifesting in higher forms in particular individuals and cultures (Murphy, 2013). This idea was taken up by transcendentalists in other countries, like Ralph Waldo Emerson, who admired "the German thought of the Progressive God, who has got thus far with his experiment, but will get out yet a triumphant and faultless race" (Emerson, 1975, p. 263).

Charles Darwin's theory of evolution *via* natural selection was a challenge to these conceptions of a progressive moral evolution (Bowler, 2000, p. 524–532). Evolution in Darwin's theory is an automatic process without any values or moral goals, in which most species go extinct, and only those who are suited to changing circumstances survive. There is no such thing as a 'higher' species, and 'fitter' simply means 'able to survive and reproduce under particular circumstances'. Nonetheless, the triumph of Darwinism inspired countless more progressivist and spiritual versions of evolution to arise, 'substitute-religions' (Rose, 1986, pp. 1–4), which tried to find new sources of meaning, myth, ethics and purpose in an evolutionary universe (Bowler, 2003, pp. 237; Midgley, 1985, pp. 15–19). These science-religions appealed to the authority of evolution as previous religions had appealed to the authority of God.

One could write a large volume on the varieties of evolutionary spirituality that have emerged in the last 160 years since the publication of *The Origin of Species:* Herbert Spencer's 'religion of the Unknowable', Alfred Russell Wallace's evolutionary Spiritualism, Friedrich Nietzsche's cult of the *ubermensch,* Ernst Haeckel's Monism, Henri Bergson's creative evolution, the evolutionary occultism of the Hermetic Order of the Golden Dawn, the holism of Jan Smuts, the mystical-evolutionary psychology of Frederic Myers and William James, the process philosophy of Alfred North Whitehead, Sri Aurobindo's Integral Yoga, Helena Blavatsky's Theosophy, Rudolf Steiner's Anthroposophy, HG Wells' Utopianism, Julian Huxley's evolutionary humanism (later called transhumanism) and Teilhard de Chardin's Christian evolutionary mysticism are all examples of pre-war evolutionary spiritualities.

After World War Two, one could point to the various forms of the human potential movement (as articulated by Abraham Maslow, Aldous Huxley, Michael Murphy and others), the transpersonal psychology of Stanislav Grof and others, Ken Wilber's Integral Theory, the evolutionary spirituality put forward in the 1990s by figures like Andrew Cohen and Barbara Marx Hubbard; some forms of Deep Ecology and 'Gaia-religion'[1], and finally the different variants of transhumanism which emerged in the 1970s-1990s and have become popular with the Silicon Valley elite today. Within this roll-call of evolutionary spiritualities, one should include eugenics, the 'religion of the future' as many of its apostles called it. Its leading prophet, Francis Galton, described the 'creed' of eugenics as the first post-Darwinian evolutionary religion (Galton, 1883, p. 304).

These variants of evolutionary spirituality share two ideas. First, it's possible and desirable to combine science and religion into a new synthesis. This, it is believed, could eventually replace Christianity and other traditional religions and become the global religion of the future. Second, human evolution is an ongoing process, which can be guided to higher and better forms. Apostles of evolutionary spirituality think humans have the potential to evolve into superbeings, called things like the New Man, the *ubermensch*, *homo deus*, 'the coming race', the future human, the transhuman, the Self-Actualized Person, or perhaps a collective stage of consciousness, such as the Noosphere, Super-Intelligence, the Super-Mind or the Singularity.

Most proponents of evolutionary spirituality are non-materialist in their metaphysics, although not all are. But on the whole, they see evolution as a spiritual force, as divinity unfolding in matter, or matter evolving into gods. They do not all think humans will inevitably evolve into superhumans – for some (like HG Wells) it's an open-ended question if *homo sapiens* will evolve or degenerate. They also have different ideas of how evolution takes place and can be steered. Most believe in natural selection, but some also support artificial selection (eugenics or genetic modification). And many champions of evolutionary spirituality believe in psychological, cultural and spiritual evolution, which supposedly takes place not through heredity but through ideas, books, spiritual practices and ecstatic experiences.

Proponents of evolutionary spirituality generally embrace a variant of the theory of evolution first put forward by Jean-Baptiste Lamarck in his *Philosophie zoologique* of 1809 (Lamarck, 2011) in which physical characteristics acquired in your lifetime can be passed on to your descendants (in the famous example, children of a blacksmith would supposedly inherit the bulging muscles he developed in his life). Lamarckian ideas were and are quite common, including among leading scientists – Darwin himself sometimes believed in the heredity of acquired characteristics (Bowler, 2000, p. 525). Champions of evolutionary spirituality expand Lamarckism to include mental and spiritual traits, so that the attainment of a 'higher state of consciousness' can mark an advance in evolution and even the emergence of a new species (Singleton, 2007). Hence psychedelics could be one technique by which humans expand their potential and advance their evolution – an idea put forward by Albert Hofmann, Aldous and Julian Huxley, Humphrey Osmond, Timothy Leary, Ralph Metzner, Robert Anton Wilson, Terence McKenna, Stan Grof, Rick Doblin and other leading psychedelic thinkers.[2]

A good example of this way of thinking is Richard M. Bucke's 1901 book, *Cosmic Consciousness: A Study in the Evolution of the Human Mind.* Bucke was a 19th-century Canadian psychiatrist, who became a

1 I pondered whether to include Deep Ecology and 'Gaia religions' in this list. What Bron Taylor calls 'Dark Green Religion' (Taylor, 2010) is certainly a form of post-Darwinian evolutionary religion, and it can share some of the tendencies I highlight in this essay. What it does not so often share with other forms of evolutionary spirituality is a dream of humans evolving into superhumans. Some forms of 'Gaia religion' are quite antithetical to transhumanism, even though both can be traced back to pioneers like Julian Huxley. On the other hand, Gaia prophet James Lovelock's final book embraces the transhumanist idea of the Singularity (Lovelock, 2019).

2 Hofmann told David Jay Brown, "I do not know if [LSD] has affected evolution, but I hope so" (Brown, 2015). Aldous and Julian Huxley both believed that humans are evolving new potentialities, including through the use of mind-altering drugs (Huxley, 1933, p. 68; Huxley, 1961). Humphrey Osmond, in correspondence with Aldous Huxley, suggested psychedelics could help *homo sapiens* evolve into *'homo faber'* (Huxley and Osmond, 2018, p. 230). Timothy Leary thought LSD was interacting with human DNA and consciousness to create a 'new race of mutants' (The Harvard Crimson, 1966), and his Harvard colleague Ralph Metzner explored this idea in his essay 'On the Evolutionary Significance of Psychedelics' (Metzner, 1968). Robert Anton Wilson, in his book *Prometheus Rising,* argued that humans could evolve into 'cosmic immortals' *via* occult methods including psychedelics (Wilson, 1983). Terence McKenna suggested psychedelics play central role in human evolution in his 1992 book *Food of the Gods* (McKenna, 1992). Stan Grof discusses consciousness evolution in Grof (1996). Rick Doblin has said that psychedelics could create a 'core of evolved humanity' (Doblin, 2014).

devoted admirer of the poet Walt Whitman. After an evening spent reading Whitman's poetry, Bucke had an ecstatic experience, which he described as 'cosmic consciousness'. He felt he was born again, into the higher species to which Whitman belonged. Bucke then traced occurrences of cosmic consciousness in religious literature and contemporary reports, and came to the conclusion these experiences were becoming more common, especially among his circle. He concluded that a new species was emerging, as superior to *homo sapiens* as humans are to dogs, and this new species would eventually take over the world. Some humans would join the new species, while other individuals and races would not (Bucke, 2000, p. 64). This idea of being born again through a spiritual experience perhaps owes more to ecstatic Christianity and Gnosticism than Darwinism, but nonetheless, Bucke presented his religious worldview as an evidence-based evolutionary hypothesis, and it influenced subsequent scientists like William James, Abraham Maslow and Timothy Leary.

Another important difference between evolutionary spirituality and Darwinism is that, rather than believing in the Darwinian conception of evolution as a branching tree leading in multiple directions, believers in evolutionary spirituality are more likely to embrace the pre-Darwinian idea of the 'great chain of being', which has historical roots in Plato, Aristotle, Plotinus and Pseudo-Dionysus (Lovejoy, 1936; Wilber, 1993; Murphy, 2013). According to this theory, there is a natural-spiritual hierarchy from plants to animals to humans to angels and finally to God. Some humans are higher up the hierarchy than others. Through spiritual practice, we can ascend the evolutionary escalator, realize new 'potentialities', and perhaps become god-like.

2. Five ethical issues with evolutionary spirituality

There is much to admire in evolutionary spirituality. It attempts to resolve the conflict between science and religion, and to combine science and spirituality into a new synthesis. It finds a way to re-connect human values with nature and the cosmos, giving its followers a sense of meaning and hope for humanity's long-term future. It has an optimistic sense of humanity's potential to evolve into god-like beings. The tradition often overlaps with optimistic and progressive political attitudes: humans can solve war, disease, environmental degradation and death, and build a planetary civilization in harmony with nature, before perhaps exploring the universe. Its supporters have, over the last 160 years, arguably been less prone to misogyny and homophobia than older world religions (although, as we'll see, still prone to racial and class prejudice). Nonetheless, there are some potential ethical issues with this cultural frame. This essay will address five: an inclination to spiritual narcissism, a contempt for those seen as less evolved, a tendency to social Darwinism and Malthusianism, a tendency to 'spiritual eugenics', and finally a propensity for illiberal utopian politics. I will illustrate these points with examples from leading figures in the tradition, before suggesting exceptions and responses.

2.1. Spiritual narcissism

Followers of evolutionary spirituality believe that all beings exist in a bell-curve of self-actualization. Some humans are more evolved, more conscious, more vital, more 'fully human' (Maslow, 1971, p. 45). This often leads to the idea of an evolutionary elite, what Abraham Maslow called "advance scouts for the race" (Ferguson, 1981, p. 56). The concept of a hierarchy of initiation leading to a spiritual elite is found in many religions, of course. And obviously, other religions' idea of 'the elect' can lead to spiritual narcissism and casteism. However, it is my hypothesis that evolutionary spirituality leads to *higher* collective spiritual narcissism than other religions, due to two beliefs.

Firstly, following Friedrich Nietzsche (who has exerted a huge influence on the tradition), apostles of evolutionary spirituality tend to reject humility and self-abasement as important virtues, and instead celebrate humanity's capacity to become gods (Dunnington, 2019, p. 105). That's not necessarily a problem if one believes that all humans share this potential. But in practice, believers in evolutionary spirituality often believe only a few humans are evolving to a higher stage – especially themselves – while others are failing to evolve. Secondly, followers of evolutionary spirituality believe they are superior to the masses not because they hold certain beliefs or follow a particular lifestyle, like Christians or Muslims. They believe they are *essentially* superior, the next step in evolution, the first buds of *homo deus*. In Richard Bucke's case, he thinks he is as superior to *homo sapiens* as humans are to dogs.

Let us take one example of this tendency to spiritual narcissism in evolutionary spirituality: Ken Wilber's Integral Theory. Wilber's intellectual achievements are impressive. But his theory does seem to appeal to a narcissistic strain in his followers. This is the promotion for his online course, Superhuman OS:

> A small percentage of the human population, around 5%, is now undergoing a 'quantum leap' to this emerging stage of evolution. These rare individuals, from every corner of the globe, are now blazing a new evolutionary trail for all of us, and breaking through to new levels of consciousness and capabilities, beyond anything that human beings have ever experienced before (Wilber, 2017).

The implication is that, by buying into Wilber's theory, you prove yourself a member of this exclusive group. Numerous former disciples have testified to a tendency for Wilberites to become 'puffed up' in the words of former Integral acolyte Jamie Wheal (Evans, 2021a,b,c). The author Mark Manson records his disappointment at attending an Integral conference and discovering it was a self-congratulatory talking-shop, "We're 'second-tier' thinkers. We're going to change the world … as soon as we are done talking about how awesome and 'second-tier' we are" (Manson, 2018). The film-maker Nora Bateson tells me she saw a similar spiritual narcissism emerge in the human potential movement:

> In the 1980s, some people tried to systematize and commodify the human potential movement, to measure and quantify how realized you were and what stage of evolution you'd reached. Were you a level 5 or a level 6, orange or indigo? What level was the person you were talking to? It led to an excessive focus on the self.

Evolutionary spirituality's tendency to collective narcissism overlaps with class privilege. Pre-war spiritual movements like the Theosophical Society, the Golden Dawn or the Society for Psychical Research tended to attract upper and middle-class affluent,

educated followers (Urban, 1997), readily inclined to see themselves as more evolved than the urban proletariat. One sees a similar overlapping of spiritual narcissism and class privilege in the post-war human potential movement. Abraham Maslow, the pioneer of humanistic psychology, believed only a few humans reach the top of his hierarchy of human needs and become 'fully human'. He found these higher beings particularly in the executive class. He worked as an in-house psychologist at one Bay Area company, Saga Corporation, where he congratulated the executives on their superior evolutionary level:

> It has been suggested that only about 5% of the general population are active agents. They are the ones who run themselves and the world. It is very clear to me that every single member of this group are one of those active agents (Maslow, 1996a).

In transhumanism, a modern variant of evolutionary spirituality popular in Silicon Valley today, the business elite are sometimes as spiritually and genetically superior, almost a different species. Eliezer Yudkowsky, founder of the Rationalist movement and a leading transhumanist, recalls spending time at one venture capital conference:

> these people of the Power Elite were visibly much smarter than average mortals … these CEOs and CTOs and hedge-fund traders, these folk of the mid-level power elite, seemed happier and more alive (Yudkowsky, 2008).

When the Silicon Valley business elite take psychedelics within the frame of evolutionary spirituality, it can be easy to see oneself as a highly-evolved superbeing - 'the hallucinogenic elite', in Eric Weinstein's phrase (Ferriss, 2016), or what Sean Parker (the investor and psychedelic philanthropist) calls 'immortal overlords' (Perrigo, 2017). Christian Angermayer, the world's leading investor in psychedelics, lives in a London penthouse apartment filled with statues of gods, emperors and immortal heroes, and aspires to divinity as well. He told Steven Bartlett's podcast, 'Maybe we are *meant* to play God … Maybe we are there to escape the evolutionary velocity, to be gods in our own way" (The Diary of a CEO, 2021) However, Angermayer thinks not all humans will necessarily make this leap, and there could be a bifurcation into two species—the gods and the left-behind (The Rubin Report, 2021).

Today, spiritual-but-not-religious Americans tend to be better educated than the average, with 71% of SBNRs having attended college, compared to 59% of other Americans (Lipka and Gecewicz, 2017). This educational gap could strengthen the cultural tendency to collective spiritual narcissism. Taking psychedelics at luxury retreats costing thousands of dollars, affluent psychonauts could be inclined to believe that, in the words of psychedelic author James Oroc:

> We are the sharpened spearhead of humanity, we are the ones who have had what the psychologist Abraham Maslow describes as the 'absolute peak experience', which he believed was the ultimate achievement of being human, and something that occurs only for a tiny fraction of the human population. We are the 5% who have to help humanity move into its next phase, the recognition of our own divine origins. (Oroc, 2018, p. 125)

2.2. Contempt for the less-evolved or 'unfit' masses

This sense of evolutionary superiority is often accompanied by a tendency to look down on the masses as less evolved, less conscious, degenerate, unreal, bestial, not fully human. Again, this habit of thinking can be traced back to Friedrich Nietzsche. He suggested there is a sharp dichotomy between the 'natural aristocracy' and the mediocre masses. He wrote:

> To me, the masses seem to be worth a glance only in three respects: first as blurred copies of great men, presented on bad paper with worn out printing plates, then as the resistance against the great men, and finally as working implements of the great. For the rest, let the devil and statistics carry them off! (Nietzsche, 1997, p. 113).

As John Carey explored, this Nietzschean contempt for the degenerate masses became fashionable among Modernist spiritual seekers like DH Lawrence. He believed in a hierarchy of self-actualization in nature, with natural aristocrats like him at the peak, and the ignorant masses below. In his novel *Kangaroo,* Lawrence writes, "The mass of mankind is soulless … Most people are dead, and scurrying and talking in the sleep of death" (Carey, 1992, p. 11). Aldous and Julian Huxley both also believed in a natural hierarchy leading to a genetic aristocracy, including the Huxleys and other talented families, with the unevolved and ignorant masses far below. Aldous Huxley wrote:

> About 99.5% of the entire population of the planet are as stupid and philistine (tho' in different ways) as the great masses of the English. The important thing, it seems to me, is not to attack the 99.5% - except for exercise – but to try to see that the 0.5% survives, keeps its quality up to the highest possible level and, if possible, dominates the rest (Huxley, 1994, p. xx).

The early transhumanist thinker and novelist HG Wells had a similar sense of a dichotomy between the intelligent minority and the idiot masses. His one-time mistress, Margaret Langer, wrote:

> I am glad to agree with HG Wells when he says that the whole world at present is swarming with cramped, dreary, meaningless lives, lives which amount to nothing and which use up the resources and surplus energies of the world. (Bashford, 2014, p. 234)

Spiritual movements of the late-19th and early-20th century often shared this view of a spiritual-biological hierarchy in nature, with an evolved elite and the slavish masses far below. This was a view held by many members of the Hermetic Order of the Golden Dawn, for example. Israel Regardie, a disciple of Aleister Crowley who wrote a book on the Golden Dawn, declared:

> The Golden Dawn is an elitist system … It is for those few who are willing to take evolution into their own hands, and make these attempts to transform themselves. The great mass of people are quite willing to drift along. They want no part or have no idea of voluntary forms of evolution (Hyatt, 1984, p. 29).

In some variants of evolutionary spirituality (certainly not all of them[3]) the bell-curve of self-actualization is racial. This is the case with Theosophy. Although the Theosophical Society aimed to be a multi-racial brotherhood of man, Madame Blavatsky told her disciples that spiritual evolution ascends through various races. Some races — particularly the Aryan race — are more evolved, soulful, 'elect' and 'God-informed', while other races in the past and today are less evolved, 'unholy', 'inferior', 'savage', 'soulless', 'monsters', 'accursed', 'black with sin', materialistic (Jews), more bestial or ape-like,'degenerate in spirituality' and possibly even demonic (Blavatsky, 2012, pp. 185, 1,157, 1,479, 1,509, 1,549, 1,551, 2,411). German Theosophists like Rudolf Steiner and Jörg Lanz von Liebenfels adapted this spiritual-evolutionary racism and pronounced the German race the most spiritually-evolved, while other races were lower on the evolutionary scale.[4] Steiner wrote:

> On one side we find the black race, which is earthly at most. We also have the yellow race, which is in the middle between earth and the cosmos. If it moves to the East, it becomes brown, attaches itself too much to the cosmos, and becomes extinct. The white race is the future, the race that is spiritually creative (Steiner, 1993, p. 67).

One can find a contempt for the less-evolved masses in later forms of evolutionary spirituality as well. Abraham Maslow, whose theory of self-actualization shows the influence of Nietzsche (Valiunas, 2011), wrote, "Only a small proportion of the human population gets to the point of identity, or of selfhood, full humanness, self-actualization" (Maslow, 1971, p. 24). Beneath that tiny percentage (which included him obviously), "it is perfectly true that the mass of society is still like a dead weight" (Maslow, 1971, p. 223).

Theories of evolutionary spirituality became popular in the psychedelic counterculture of the 1960s, thanks to figures like Timothy Leary, who suggested LSD was producing a 'new race of mutants' (The Harvard Crimson, 1966). This sense of oneself as a higher species could lead to psychedelic snobbery. Tom Wolfe, in *The Electric Kool-Aid Acid Test,* noted:

> The world was simply and sheerly divided into 'the aware', those who had had the experience of being vessels of the divine, and a great mass of 'the unaware', 'the unmusical,' 'the unattuned' … Consciously, the Aware were never snobbish toward the Unaware, but in fact most of that great jellyfish blob of straight souls looked like hopeless cases (Wolfe, 1968, p. 131).

Wolfe overheard one psychonaut lecture a policeman at an acid test: 'Listen, I've got more Awareness, more … Awareness, in my little fingernail.. My Awareness is so superior to yours that… uh…' (Wolfe, 1968, p. 283).

In the 1970s, Leary suggested that he and his friends were part of a 'genetic elite' in California (Evans, 2022b), while the rest of the world was far lower on the evolutionary scale:

> To live in the East is to fail a genetic intelligence test … The folks of the Old World inhabit pre-civilized, barbarian gene-pools. Europeans and Africans and Asians are our own animal origins still obsessed with territorial conflict … The Africans are thus 2 million years behind California (Leary, 1979, p. 132).

A graph from Leary's Intelligence Agents (1979) depicting the varying development of various 'genetic castes' (Figure 1).

The most extreme example of evolutionary elitism in the human potential movement is Rajneesh Bhagwan, also known as Osho. He predicted the evolution of 'the new man' from within his movement, and told journalists: 'only the very rich, educated, intelligent, cultured can understand what I am saying' (Osho, 2022, vol 1: 1). Everyone else is retarded:

> Scientifically, the average mental age of a human being is below thirteen … Those who are retarded will criticize you, condemn you. Ignore them. They are already stepping into their graves, soon they will disappear (Osho, 2022, vol 1: 5).

This contempt for the less-evolved masses can feed into Silicon Valley transhumanism, and the dichotomy between the *ubermensch*-like 'founder', the tech-genius, the '10X engineer' on the one hand, and the drone-like hordes of 'non-player characters' on the other.

2.3. Social Darwinism and Malthusianism

This sense of a sharp divide between the evolved elite and degenerate masses can lead to Social Darwinian and Malthusian attitudes: there are too many humans, and there are too many unfit humans. Let nature do its work to select the fittest while letting the unfit die off. This is one way that evolutionary spirituality can be quite different to older religions like Christianity, where those at the bottom of society are seen as having a place in the cosmic scheme of things, and part of serving God involves trying to help the poorest, weakest or least fortunate.

This new attitude can be traced back to the Reverend Thomas Malthus, a founding theologian of evolutionary spirituality, whose *Essay on the Principle of Human Population* in 1798 suggested that nature (created by a Supreme Being) selects the vigorous specimens while getting rid of the listless, malformed and wasteful, thereby creating progressively better beings. Malthus thought welfare for the poor was misguided, as it would merely encourage them to reproduce more, leading to greater misery and vice (Huzel, 1969). His *Essay* was a defining influence on Darwin, and on champions of evolutionary spirituality like the sociologist Herbert Spencer.

3 I do not suggest all forms of evolutionary spirituality are inherently racist, far from it. Julian Huxley, for example, is one of the most important thinkers in the tradition of evolutionary spirituality, and he strenuously opposed scientific racism from the 1930s until his death in 1977. There are also forms of evolutionary spirituality that see racial interbreeding as aiding the evolution of mixed-race superbeings (eg Jose Vasconcelos' *Cosmic Race*) although this can lead to its own forms of racism. One extremely racist version of evolutionary spirituality is Cosmotheism, a white supremacist eugenic religion launched in the 1970s by William Luther Pierce, who is more famous as the author of the far-right novel, *The Turner Diaries* (Whitsel, 1998).

4 Theosophists protest that, according to their theory of spiritual evolution, all souls reincarnate through various races. Nonetheless, some racial incarnations are seen as higher, purer and more evolved than others.

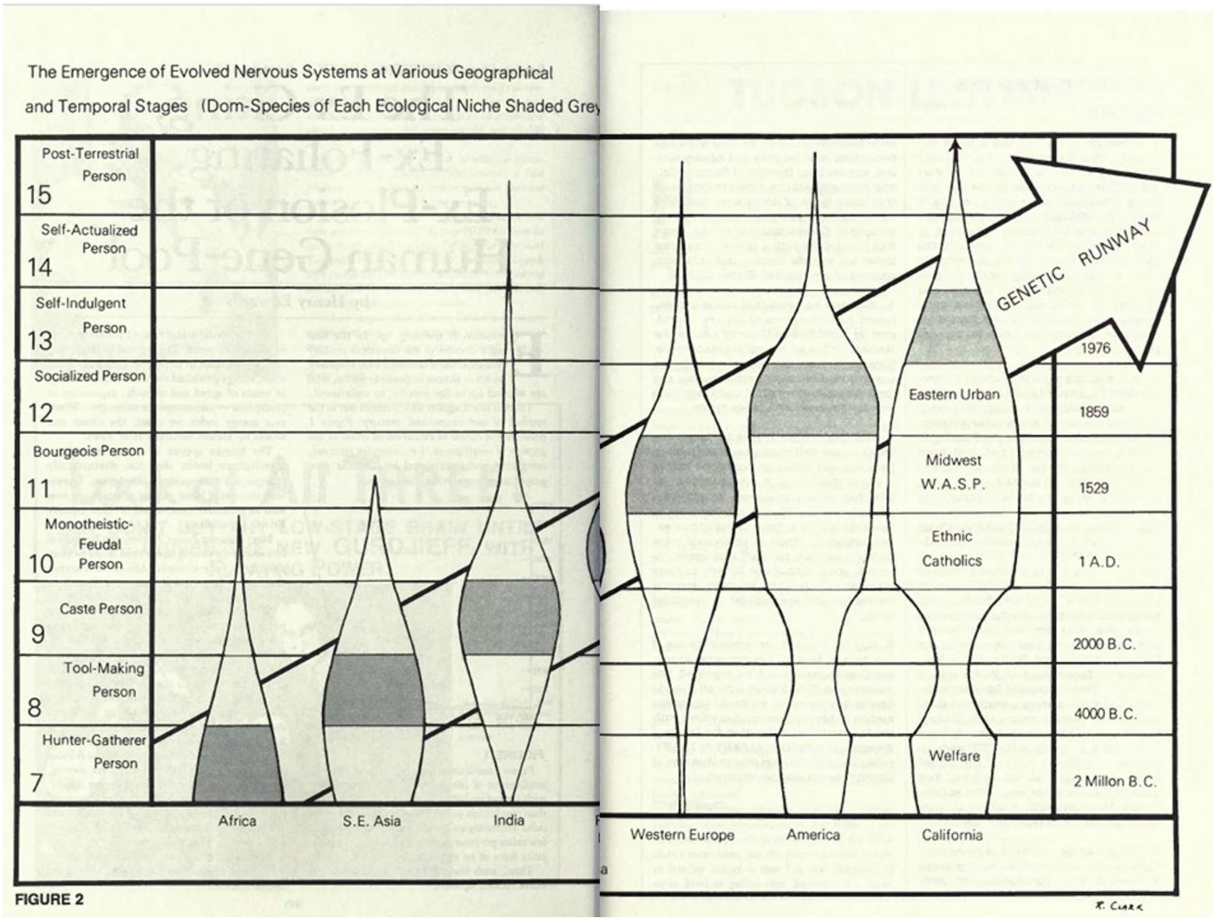

FIGURE 1
A diagram from Learys's *Intelligence Agents* (1979). Reproduced with permission from Timothy Leary's son, Zach Leary, who is responsible for the Leary literary estate.

Spencer believed that evolution was guided by a spiritual force he called 'the Unknowable', and it naturally led to progressively higher forms through the 'survival of the fittest' (a phrase he coined). He wrote, "The whole effort of nature is to get rid of [the unfit], to clear the world of them, to make room for better" (Spencer, 1892, p. 205). He suggested that "a finer type of man than has ever hitherto existed" would naturally evolve, as long as governments do not impede natural selection by excessive support for the poor. His evolutionary spirituality was popular with Gilded Age oligarchs like Andrew Carnegie and John D. Rockefeller (Hofstadter, 1944).

Friedrich Nietzsche, arguably a more enduring influence on evolutionary spirituality than Herbert Spencer, also thought the world was over-populated and the weak and 'unfit' should be left to die so that higher beings can evolve. He wrote, "Far too many live and far too long they hang on their branches. Would that a storm came to shake all this rot and worm-food from the tree!" (Nietzsche, 2006, p. 54). His social Darwinism influenced early-20th-century spiritual thinkers like Aleister Crowley, whose Book of the Law declares:

> We have nothing with the outcast and the unfit: let them die in their misery. For they feel not. Compassion is the vice of kings: stamp down the wretched & the weak: this is the law of the strong: this is our law and the joy of the world.

To which Crowley adds the commentary, "there is a good deal of the Nietzschean standpoint in this … It is the evolutionary and natural view. Of what use is it to perpetuate the misery of Tuberculosis, and such diseases, as we now do? Nature's way is to weed out the weak" (Crowley, 2004, p. 11).

HG Wells and Julian Huxley, two early prophets of transhumanism, were both socialists who believed in social provisions for the poor. But they were also members of the Malthusian League (Bashford, 2014, p. 1) who believed that 'overcrowding of the planet' is "the fundamental evil out of which all the others … arose" (Wells, 1923, p. 1060). They thought over-population leads to demagogic politics, war, pandemics and environmental collapse. Malthusian attitudes could often be found in later prophets of environmental spirituality, like the biologist Paul Erlich, a preacher of 'conscious evolution' and author of the doomsday book, *The Population Bomb* (Erlich, 1968), which wrongly predicted that over-breeding in the Third World would lead to mass starvation in the 1970s.

Another member of the Malthusian League was Annie Besant, the Victorian radical who converted to Theosophy in the middle of her life. Like other Theosophists, Besant believed in spiritual evolution, which guides the "survival of the fittest nations and races" and enacts a 'cleansing process' for the "unfit ones – the failures" (Blavatsky, 2012, p. 1565). Besant wrote that when she walked through the slums of

Britain, she felt "that for those men and women, as they were, degraded, brutal, drunken, profligate … the best mercy that God could show them would be an earthquake that would swallow the whole great city" (Besant, 2020, p. 31).

One encounters an apocalyptic tone in later prophets of evolutionary spirituality as well. Timothy Leary wrote a 'declaration of evolution' in 1968, announcing that the 'new mutants' must "acquiesce to genetic necessity [and] detach ourselves" from previous generations. It is time, the declaration announced, "for the old mind to die, so that a new one, with expanded sensitivities, could be born" (Leary, 1970). Rajneesh Bhagwan/Osho declared:

> I want to be finished with the whole past completely, I want it to be erased completely … Only then the new humanity is possible, a new world, a new man … This world is not worth saving … it will be better if the third world war happens and destroys this whole stupid humanity (Osho, 2022, vol 1: 1).

A good example of this desire for an apocalyptic separation of the fit from the unfit can be found in the thinking of Barbara Marx Hubbard, a champion of evolutionary spirituality and transhumanism from the 1970s to the 2010s. Hubbard claimed her cosmic mission was to midwife the birth of a new species, *homo universalis*. In books like *The Evolutionary Testament of Co-Creation* (Hubbard, 2015), she channeled and interpreted the message of God/Evolution to the 'evolutionary children of God' (Hubbard, 2015, p. 126). She described evolution as a mountain — most only get a little way up, but a few special beings get to the top and become intergalactic immortal gods:

> At the top we meet everyone who has also kept growing … in a universe full of other beings who have also had the courage to rise to the tops of their mountains, on their own planets in galaxies everywhere … Our time is coming. We who survive the transition … shall identify increasingly with the perspective of God as we build new worlds, create new microorganisms and redesign our bodies for cosmic time and space (Hubbard, 2015, p. 39, p. 74).

Not everyone will make the evolutionary Leap. There will be a 'bifurcation of humanity' and selection of the fit from the unfit. It's up to humans if they make the cut or not:

> Individually we can choose to embrace options for evolutionary choices such as longevity, space migration and evolved consciousness. Those who choose these paths will evolve differently from those who choose to remain in the terrestrial/mammalian life cycle … (Hubbard, 2015, p. 59). Just as Neanderthal man passed away, so too will self-centered Homo sapiens retire once it has finished the work of preparing the way for Homo universalis … we will weed out the unworkable from the workable (Hubbard, 2015, p. 96).

As Nietzsche had argued, the elite need to be steely in their acceptance of the passing away of the unfit.

> Evolution is compassionate, but not nice … There are missions of mercy to nurse the sick … There is also the new mission of the future: a mission to the strong, the whole, the builders, the scientists, the artists … The New Order of the Future consists of self-selected souls attracted to the future of the world (Hubbard, 2015, p. 36, 106, 369).

It is, of course, offensive for a rich white heiress to suggest those less fortunate than her have somehow 'chosen' not to evolve and failed a cosmic evolutionary test. Her prophecy of a bifurcation between the evolved superbeings and the left-behind masses finds echoes in contemporary transhumanism.[5] Psychedelic entrepreneur Christian Angermayer, who founded atai Life Sciences, has suggested:

> humanity could split up into two species, because you have a part of humanity who says 'hey bring it on, lets fly to Mars'. If you want to go to Mars you will need to change your bodies. We're going to have to modify, everyone knows it. But there might be a part of humanity who says 'this is not for me, I don't want to merge with machines'. So humanity might split into two species (The Rubin Report, 2021).[6]

One notes Social Darwinian attitudes in some psychedelic transhumanists, particularly in their rejection of mass welfare democracy in favour of offshore crypto-libertarianism. The Extropian movement of the 1990s, who included some of the founders of cryptocurrency, were typically anarcho-libertarians who believed in exiting the nation-state and starting up their own crypto utopias, where they could engineer themselves into superbeings, free from the intrusion of the IRS and FDA (Evans, 2022c). That dream lives on in contemporary transhumanists like psychedelic and crypto investor Peter Thiel, who funded the Seasteading Institute to explore the possibility of crypto-libertarian offshore utopias, in expectation of the collapse of mass welfare democracies (Lanier and Glenn Weyl, 2022).[7]

2.4. Spiritual eugenics

The sense of a coming bifurcation between the Elect and the Passed Over is not unique to evolutionary spirituality. But in Abrahamic religions, it is God who selects the Wheat from the Chaff. In evolutionary spirituality, in some instances at least, it is humans who select the fit and the unfit. As Nietzsche put it, "the ruling caste of the future … must now take the place of God … They deliver the physiologically botched by teaching them the doctrine of 'swift death'"(Nietzsche, 1911, p. 266).

5 In *LSD and the Mind of the Universe* (Bache, 2019), philosopher Chris Bache recounts taking high doses of LSD over several years and communicating with the Mind of the Universe. It tells him there will be a 'Great Death' and 'global purification' of the species followed by the evolution of the 'future human'.

6 In fact, Angermayer thinks psychedelics could be an 'antidote for future shock', helping the alienated to cheer up and join the Singularity.

7 This sort of transhumanist libertarianism may not be indicative of everyone in the tradition of evolutionary spirituality of course. In Pew Research's 2014 study of the 'Spiritual But Not Religious' in the US, a majority believe government aid to the poor does more good than harm, though a near-majority also believed in smaller government: https://www.pewresearch.org/religion/religious-landscape-study/religious-denomination/spiritual-but-not-religious/

It is not the case that all the leading figures in pre-war evolutionary spirituality supported eugenics in one form or another. Many did not, and a few actively opposed it, like William James and Alfred Russell Wallace. But it's worth noting how many leading figures *did* support eugenics in some form: Friedrich Nietzsche, George Bernard Shaw, Ernst Haeckel, Julian and Aldous Huxley, HG Wells, Gerald Heard, WB Yeats and several other members of the Golden Dawn, Rudolf Steiner and other German Theosophists, Jan Smuts, several members of the Society for Psychical Research, Sri Aurobindo, Luther Burbank, John Harvey Kellogg, and Alexis Carrel all supported positive and/or negative eugenics to steer evolution and produce higher beings. One also occasionally finds a support for eugenics in post-war evolutionary spirituality, for example in the thinking of Abraham Maslow, Aldous and Julian Huxley, Teilhard de Chardin, William Luther Pierce and Osho.[8]

Eugenics was a science-religion launched by Francis Galton, Charles Darwin's cousin, in 1883. Galton noted that many human characteristics, including intelligence and some illnesses and disabilities, seemed to be hereditary. He suggested that the science of heredity could be combined with animal breeding techniques to steer evolution and create 'master-minds' (Galton, 1865). Although eugenics has typically been described as a pseudo-science, it was embraced by its followers as an evolutionary religion (Galton, 1909, p. 42), which would replace *homo sapiens* with a 'new born Apollo' (Pearson, 1930, p. 217). Scientists would be the priests of this new religion, measuring and quantifying the value of humans through psychometric and biometric tests to sort the superior from the inferior. These scientist-priests would guide human evolution by encouraging the 'fittest' to breed more and with each other (positive eugenics) and discouraging those deemed 'unfit' from breeding at all (negative eugenics) through voluntary or involuntary sterilization, segregation, racial miscegenation laws and, at its most extreme, euthanasia, or mass murder (Bashford and Levine, 2010). This 'jehad or Holy War' (Galton, 1909, p. 99) would save civilization from being swamped by imbeciles (Huxley, 1994, p. 150).

The eugenic 'religion of the future' was extremely popular from the 1880s to the 1940s, across the political spectrum and in many countries of the world. Many different policies and activities were promoted in eugenic terms as helping to create a superior race or species, including everything from body-building and yoga to organic farming and psychedelics. For example, in 1941, the German poet-soldier-physician Gottfried Benn called for a "systematic educational effort in the direction of conscious enhancement of vitality. One could, by increasing visionary states say with mescaline or hashish, supply the race with a stream of spiritual insights which could lead to a new creative period" (Benn, 2007, p. 44). The fact that psychedelics could be promoted using eugenic rhetoric does not mean one can say psychedelic culture 'is' eugenicist (or body-building, organic farming or yoga). Rather, it is indicative of the general popularity of eugenic rhetoric before World War Two.

But quite often, those who used eugenic rhetoric to promote a particular policy or activity also supported positive and/or negative eugenics. Gottfried Benn, for example, wrote in his 1933 essay 'Eugenics', written following the Nazis' ascent to power, "It seems to me certain that once again a new man will emerge from this transformation in Europe, half as a mutation and half as a result of eugenics" (Benn, 2013, p. 207). Several other important figures in western psychedelic history saw both psychedelics and eugenic breeding laws as technologies to assist the evolution of superbeings, and this overlap highlights an illiberal tendency in evolutionary spirituality.

For example, the first British paper on psychedelics was published by Havelock Ellis in 1897. Ellis was a free-thinking, left-leaning physician, one of the first English disciples of Nietzsche, and a follower of evolutionary spirituality. He believed in the possibility of steering evolution to develop 'the divine possibilities of man' (Ellis, 1912, p. 404), and he suggested that mescaline was one method to enhance humans' evolutionary potentialities (Ellis, 1898). He also believed some humans are degenerating, and that the 'feeble-minded' 'dilute the spiritual quality of the community'. Ellis was a member of the Eugenics Education Society from 1907 to 1939 and supported the voluntary sterilization of those deemed 'unfit'. Eugenic policies would bring about a new millennium, he believed, "Not until the earth is purified of untold millions of its population will it ever become the heaven of old dreamers, in which the elect walk spaciously and nobly, loving one another" (Ellis, 1912, p. 404).

One of the participants in Ellis' mescaline experiments was his friend WB Yeats, the Irish poet and member of the Hermetic Order of the Golden Dawn (Jay, 2019, p. 92). Yeats, like other adepts, used occult techniques in his attempt to ascend up the spiritual-evolutionary scale, including mind-altering drugs such as hashish and mescaline. At the other end of the evolutionary scale, Yeats suggested that western civilization was in danger of collapse because "the better stocks have not been replacing their numbers, while the stupider and less healthy have been more than replacing theirs." He thought state-enforced eugenics was necessary, "Sooner or later we must limit the families of the unintelligent classes" (Yeats, 1962, p. 423).

HG Wells and Julian Huxley, two early transhumanists, promoted both mind-altering drugs and eugenics as technologies to guide human evolution towards the creation of superbeings. In *The Science*

8 On Nietzsche's support for eugenics, see Holub, 2018, pp. 408–454. On George Bernard Shaw and WB Yeats' support for eugenics, see Carey, 1992, pp. 13–22. Other members of the Golden Dawn and affiliated organisations supported positive and/or eugenics, including Isabelle de Steiger, Florence Farr, Aleister Crowley and Dion Fortune, see Evans (2021c). For Haeckel's comments in support of euthanasia and infanticide, see Weikart (2002). On Julian Huxley's support for positive and negative eugenics, see Weindling, 2012. On Aldous Huxley's support for positive and negative eugenics, see Huxley, 1994, pp. 105–114, 147–158. On HG Wells' support for negative eugenics, see Partington (2002). Gerald Heard promoted eugenics in talks and articles like 'Eugenics and the New Order' (Heard, 1933) – see also Fallby (2020), p. 33. For Steiner's views on racial evolution and miscegenation, see Staudenmaier (2014). Jan Smuts supported laws on segregation and miscegenation as prime minister of South Africa (Schwarz, 2011, pp. 277–340). For the overlap between membership of the Eugenics Society and the Society for Psychical Research see Evans (2022d). On Sri Aurobindo's call for eugenic breeding laws, see Singleton, 2007. For Luther Burbank's support for positive eugenics, see Burbank, 1907. For the place of eugenics in Kellogg's 'religion of biologic living', see Wilson, 2014, pp. 148–168. On Alexis Carrel's fusion of eugenics and evolutionary religion, see Reggiani, 2006. For Teilhard de Chardin's comments in support of eugenics, see Slattery, 2017. For Luther Pierce's racist eugenic religion, see Whitsel, 1998. For Maslow and Osho's comments on eugenics, see quotes later in the essay.

of Life, a 1929 book co-written by HG Wells, his son Gip Wells and Julian Huxley, the authors note the recent discovery of psychoactive drugs like mescaline, and remark, "It is not only that these drugs illuminate our capabilities. A time will come when they may be used to assist and enhance them" (Wells et al., 1934, p. 1388). They also say the new science of eugenics is essential for counteracting a steep rise in "defectives," "pockets of evil germ-plasm responsible for a large amount of vice, disease, defect and pauperism" (Wells et al., 1934, p. 1470). In his 1901 book *Anticipations,* Wells suggested a biological underclass might need to be exterminated (Wells, 1902, p. 300), although he later moved to the slightly-more-liberal position of Julian Huxley, who suggested the 'unfit' could be bribed into getting sterilized (Weindling, 2012).

Julian's brother, Aldous, promoted eugenic policies from the 1920s until his death in 1962, as a means of lowering the quantity and raising the quality of the population. His 1931 novel, *Brave New World*, is frequently read an anti-eugenic dystopian satire. However, his essays from the late 1920s and early 1930s show the extent to which he supported the sort of caste-based scientific-eugenic dictatorship proposed in *Brave New World.*[9] In a radio broadcast in 1932, Aldous said, "in a scientific civilization society must be organized on a caste basis. The rulers and their advisory experts will be a kind of Brahmins controlling, in virtue of a special and mysterious knowledge, vast hordes of the intellectual equivalent of Sudras and Untouchables." He called for "a society compelled by law to breed more and more exclusively from its most gifted and socially most successful members." (Huxley, 1994, pp. 113, 152).

In the last decade of his life, Aldous embraced an optimistic evolutionary spirituality influenced by his brother's transhumanism. In 1961, he declared:

> I think there are still a great many potentialities … still lying latent in man. And it may be that … we will find methods for going beyond where we are now, in a few hundred years, as far as we have succeeded in going beyond our Aurignacian ancestors in 20,000 years (Huxley, 1961).

He thought psychedelics were one method to expand human potentialities – his friend, the psychiatrist Humphrey Osmond, suggested psychedelics would enable a new form of human to evolve. And Aldous still endorsed eugenics as another method for expanding human potential. In his 1958 lecture series at UC Santa Barbara, he said:

> Sooner or later eugenics will be practiced, although it is certainly going to take a tremendous revolution in our present ethical ideas on the subject. It may be added that the first nation that does practice such eugenic methods will in a few decades be enormously superior to all its rivals (Huxley, 1978, p. 105).

Abraham Maslow also believed humans could evolve through 'peak experiences', attained by psychedelics or other means. And he privately expressed support for negative eugenics and even euthanasia to raise the genetic quality of the species. In his journals one can find comments such as:

> We keep alive many of the people whom nature left to itself would kill off. So we are hurting the human gene pool, which must be deteriorating … The right to reproduce must surely become rather a privilege which is socially controlled and socially granted … (Maslow, 1979, p. 833) … One day we'll have to talk about the exposure or killing of monster-babies, or even of healthy surplus babies (Maslow, 1979, pp. 1230–1231).

In a paper on 'Humanistic Biology: Elitist Implications of the Concept of Full Humanness', which he delivered at the Salk Institute in 1968, he suggested the 'biological aristocracy' should become 'a kind of priestly class', which decides who gets to reproduce and who does not:

> Who is to judge how to evolve ourselves, which type of individual should be favored and selected, or who is to live and to die?..Will the decision makers be a federal commission, a global board, or a special group of physicians, biologists, or other scientists?..The question of how to select the most adequate and wise, the best people to make these awe-full decisions must, therefore, be considered an urgent program (Maslow, 1996a,b).

Another leading figure in the human potential movement, Osho, argued that, to create the 'new man', there needs to be a global eugenic law:

> We need more stronger bodies, we need more intelligent people, and we need people who are clean of all old crap. That is possible only if we make a clinical, medical arrangement for the birth of man … bioengineering certainly can create far superior men, healthier, more talented (Osho, 2022, 1: 3).

He said there should be a total global ban on births for 20 years, and then a medical-spiritual board of control should regulate all reproduction, authorizing births through artificial insemination so that only genetically-gifted children were born. The human population should be reduced by 75%. Aid to the third world "should completely stop." (Osho, 2022, 1: 5).

From the 1970s on, transhumanists have tended to propose voluntary genetic enhancement, rather than coercive eugenic breeding laws, as a means to steer evolution and create superbeings. Figures like Timothy Leary in the 1970s, or Nick Bostrom and David Pearce in the 1990s, argued for humans' right to genetic enhancement (see Evans, 2022b,c). Leary suggested that a genetic 'elite of elites', 5,000 humans selected for their genetic superiority, should jet into space, establish an off-world colony, and there use genetic technologies to create a more intelligent, blissful and longer-living species (Leary, 1974). This may be far-fetched and elitist, but is not an illiberal as 1920s-style enforced mass eugenics.[10] Instead, transhumanists defend what

9 "Our civilization is menaced with total collapse. Dictatorship and scientific propaganda may provide the only means for saving humanity from the misery of anarchy." (Huxley, 1994, p. 111).

10 Leary, ever the provocateur, did say Hitler was an evolutionary visionary for his support of eugenics (see Leary and Wilson, 1978, p. 254).

Nicholas Agar has called 'liberal eugenics' (Agar, 1998) – your right to modify yourself and your children, free from government interference.

But sometimes transhumanists still argue for state-sponsored programmes of biochemical and genetic enhancement, and these do seem potentially illiberal and coercive. For example, www.eugenics.org is a website launched by British philosopher David Pearce, who co-founded the World Transhumanist Association in 1994. He suggests 'a bio-happiness revolution is imminent' and wants to create a more blissful ecosystem, using techniques ranging from psychedelics to 'wireheading' to genetic engineering. He says, "Genome reform to engineer lifelong loved-up MDMA-like consciousness would be my vision of paradise" (What's It Like To Be A Philosopher, 2022). He looks forward to the day when the World Health Organization can alter our genes and raise our hedonic level with one injection. His plan to 'abolish suffering' entails the genetic modification not just of humans but of all species. He insists this is eugenics, but 'not 1920s-style eugenics' (Evans, 2022a). His intentions are of course altruistic, nonetheless, here the line between 'liberal eugenics' and enforced eugenics seems perilously thin.

2.5. Illiberal medical-spiritual utopias

The biggest ethical problem with evolutionary spirituality, as I see it, is its marriage of science and religion. Every religion has its particular values and prejudices, but apostles of evolutionary spirituality insist their dogmas are objective 'empirical facts', as Aldous Huxley liked to say. They invariably commit what GE Moore called the naturalistic fallacy—they shift from the Is of scientific data to the Ought of moral preaching. And often the data is extremely weak. With eugenics, psychiatrists could deem someone a 'moral defective' based on a snap judgement, confining them to incarceration, sterilization or even extermination if, for example, they had a child outside of marriage, or were the wrong ethnicity, or even if they smiled too much. This was William James' critique of eugenics. He wrote, "The trouble is that [eugenicists] use the descriptive names of symptoms merely as an artifice for giving objective authority to their personal dislikes. The medical terms become mere 'appreciative' clubs to knock men down with" (Richardson, 2006, p. 338). Eugenics is obviously an extreme case but I see a similar risk in any science-religion that claims it can quantify people according to their level of self-actualization as more or less 'fully human'.

If the dogma of science-religions become enshrined in laws, you have a risk of what Alfred Russell Wallace (referring to eugenics) called a 'medical tyranny' run by 'an arrogant scientific priestcraft' (Wallace, 2003, p. 214). All religions are potentially illiberal when imposed onto an entire population, but science-religions are insidiously so, because their devotees insist they are not imposing their particular theology onto a populace, but rather an 'objective science' of flourishing/self-actualization/mystical oneness (Evans, 2018). It's worth noting that many of the leading champions of evolutionary spirituality argued for illiberal and anti-democratic utopian projects. HG Wells, Julian and Aldous Huxley, Gerald Heard, Alexis Carrell, Sri Aurobindo, Abraham Maslow and Osho all put forward political schemes in which a Platonic caste of scientist-priests decide how the rest of us should think, live and breed. In all of their spiritual utopias, there is one presumed goal for the entire population – the evolution of humanity to a higher state. All means and all lives serve that goal and those who do not agree with it are excised from the body-politic. Multicultural, liberal, secular society is replaced by a medical-mystical cult.

Aldous Huxley's *Island*, for example, is often celebrated as a hippy utopia, and it inspired Esalen and later spiritual communes. Huxley describes Pala as a decentralized democracy which encourages non-dogmatic critical thinking. Yet it is a completely closed, static, theocratic society, in which there is one presumed goal for all: mystical self-actualization. There is one neuro-theological culture, established by the Raja and an enlightened Scottish doctor a century before and unchanged since. Every citizen of Pala is indoctrinated in this culture, through the island's bible, mantras, hypnotherapy and the psychedelic ritual that every child must go through to become an adult. Population is strictly controlled, and the nuclear family is replaced by collective 'mutual adoption clubs'. Second children are encouraged to be born *via* artificial insemination from genius sperm banks, to raise the general IQ of the society. Any delinquents are spotted as infants and given drugs for the rest of their life. Huxley suggests this will be about one fifth of all males. And if they are not cured? "In the long-run … they always are" (Huxley, 2005, p. 154).

His friend Gerald Heard, another important influence on psychedelic culture in the 1950s and 1960s, preached a similar medical-spiritual utopia in his 1939 book, *Pain, Sex and Time*. Heard argued that humanity had reached the limit of its current evolutionary phase, and needs to advance to the next level and become superbeings. This required intense spiritual training. Heard sees two possibilities. Either the mass of humanity will degenerate and go extinct, while a few special humans gather in spiritual 'Collegiums' and evolve to the next stage; or a new type of human arises, which he calls 'Neo-Brahmins', and through sheer charisma they lead humanity into a 'new order'. This goes beyond liberal democracy, which Heard says is ruled by lower appetites, and is instead a medical-spiritual caste-based theocracy with one central goal, "the further evolution of consciousness beyond individuality." He writes:

> Instead of a remnant being saved, a few pioneers getting through to the new level, the whole vast column of mankind … might be in its entirely shifted upwards toward an increasing awareness … of the comprehensive purpose of their existence (Heard, 1939, p. 310).

This new order would be non-violent, he insists, though he also says all of humanity would be guided by an 'International Police Force', a cross between policemen, psychiatrists and priests, dedicated to helping humanity achieve 'complete liberation from the self'. Again, this is a rejection of secular, liberal, multicultural society in favor of a medical-mystical theocratic cult.[11]

11 Could such utopias work as small voluntary spiritual communes, rather than as prescriptions for entire societies? Maybe, but even at the level of the commune, evolutionary spirituality seems often to lead to authoritarian and illiberal cults, like those of Osho, Andrew Cohen, Scientology or NXIVM. In seeking authenticity and liberation, devotees can end up enslaved to the whims of their charismatic leader, mindlessly repeating slogans. But this may emerge from cult dynamics rather than anything specific to evolutionary spirituality.

3. Conclusion

What I have described are tendencies in the tradition of evolutionary spirituality, and for each of these tendencies, one can find exceptions and counter-examples. A good counter-example to the tendency to spiritual narcissism and spiritual eugenics is William James, who denounced eugenics perhaps because he recognized his own mental vulnerability, and also because he was a pluralist. He thought human consciousness could evolve in many different directions, some of which might seem aberrant or even pathological to outsiders. You cannot fit all of humanity into one map of development – there are many potential peaks in the 'fitness landscape' and not all of them can necessarily be quantified and measured scientifically. I suspect James would be appalled that psychedelic science now seeks to grade people's mystical experiences on a scale from 1 to 10 (Evans, 2018).

In response to evolutionary spirituality's tendency to social Darwinism and contempt for the unevolved masses, one could re-incorporate traditional religious virtues and beliefs, such as a belief in the essential value of human life, and a commitment to humility, charity and service to others, particularly those less fortunate than you. As for evolutionary spirituality's tendency to illiberal utopian projects, a good counterexample would be John Stuart Mill. He believed in the possibility of self-cultivation to higher states of being, but did not think you should impose one model of the good life onto an entire society, least of all a pseudo-scientific religion like Comte's 'religion of humanity', which Mill accused of 'spiritual despotism' (Mill, 1873, p. 213).

Instead of imposing one model of self-actualization onto humanity, Mill argued for a secular, liberal, tolerant framework within which multiple 'experiments in living' could be pursued. An example of this sort of Millsian 'experiment in living' might be Esalen, an organisation dedicated to evolutionary spirituality, which has avoided the cultishness of other human potential movements thanks to two principles: 'hold your dogmas lightly' and 'no one captures the flag' (Kripal, 2007). Of course, Esalen has been accused of being a country club, only accessible to the well-off. How could one make such programmes pluralist, non-coercive, as safe as possible, and accessible to those without great wealth, but with an inclination to follow a particular form of training? [12]

As to 'spiritual eugenics', the risk of coercive 1920s-style eugenic programs seems low today. But we do see transhumanists and biotech entrepreneurs (including some prominent investors in psychedelics like Peter Thiel and Christian Angermayer) arguing for individuals' right to alter their genes as well as their consciousness. This 'liberal eugenics' raises a different ethical dilemma – not the risk of the violent imposition of genetic technologies onto the masses, but the risk of new genetic technologies being only available to the wealthy. Already, we are seeing an underground market for genetic enhancement technologies like embryo selection by polygenic risk scores, which are only available to the wealthy and well-connected (Black, 2022). We're seeing the rise of 'genetic tourism' like 'psychedelic tourism'—the rich go to Costa Rica for ayahuasca retreats, and Cyprus for stem-cell injections. The fact that genetic enhancement technologies are largely confined to the wealthy has led some to express concern that humanity could bifurcate into two species—GenRich (the genetically enriched) and Naturals (Silver, 1997). This concern seems hyperbolic, but certainly health, education and income inequalities could get a lot worse.

Today, transhumanism—the leading contemporary form of evolutionary spirituality—is effectively a religion for the extremely rich of Silicon Valley. Billionaires like Elon Musk, Sergey Brin, Larry Page, Mark Zuckerberg, Peter Thiel, Christian Angermayer, Steve Jurvetson, Larry Ellison and others believe in humanity's capacity to evolve into superhumans through technologies like AI, VR, genetic modification and psychedelics (Evans, 2022c). They see a glorious intergalactic future, but not necessarily for everyone, not in the short-term anyway. There is a risk the ultra-rich could retreat into offshore and off-world gated ashrams to enhance themselves and weather out the apocalypse while everyone else suffers decades of climate change and system collapse (Rushkoff, 2022).

If transhumanism remains merely a religion for the rich and powerful, it is unlikely to survive. Already it has provoked an anti-transhumanist backlash—the conspiracy-obsessed masses rail against the invidious agenda of the globalist elite to turn themselves into superbeings while culling the rest of us (Istvan, 2014). The more such anti-transhumanist conspiracy theories flourish, the more there is a risk the general public will reject new technologies and the progress of science will be slowed. We need to communicate the benefits of new technologies (including psychedelics and genetic medicines), and make them affordable, safe, and accessible. This would be democratic transhumanism (Hughes, 2004). The more it focuses on healing ordinary people of sickness, rather than creating an elite of superbeings, the more popular it will be.

But why turn evolution into a religion at all? Why worship new technologies or the coming superbeings? Aldous Huxley said humans weave religions like spiders weave webs (Huxley, 2005, p. 177). We cannot help it. And maybe religions play a useful role in inspiring people and giving them a sense of meaning and purpose. But religions are also prone to dogmatism, apocalyptic eschatologies and collective spiritual narcissism. Evolutionary spirituality is no different. And it's not necessarily more rational, evidence-based or true than other religions.

Thomas Huxley, the great Victorian scientist and grandfather of Aldous and Julian, started off promoting the religion of science, and suggested evolution could teach us moral values. But by the end of his life, he became more agnostic (a word he coined) and decided evolution was not a good basis for ethics, religion or politics. In 'Evolution and Ethics' (Huxley, 1997, pp. 283–304) he points out that what is evolutionarily fitter is not necessarily what is morally better. And the church of evolution often leads to arrogant scientist-priests ranking human beings in value and even dictating who deserves to live and breed. Is it necessary, desirable or scientifically-valid to fasten one's spirituality onto evolutionary theories? I do not think so. It's possible to believe in spiritual development without thinking it somehow makes you 'more evolved'.

12 It's worth noting that the first time Aldous Huxley discussed places for the development of human potentialities, it was after vising an unemployment centre during the Great Depression. He argued that such places could become 'universities for common life' where people are able to explore and develop their preferred potentialities, for free (Huxley, 1994, p. 235).

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The original contributions presented in the study are included in the article/Supplementary material, further inquiries can be directed to the corresponding author.

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References

Agar, N. (1998). Liberal Eugenics. *Public Aff. Q.* 12, 137–155.

Bache, C. M. (2019). *LSD and the mind of the universe*. New York: Park Street Press.

Bashford, A. (2014). *Global population: history, geopolitics and life on earth*. New York: Columbia University Press.

Bashford, A., and Levine, P. (2010). *The Oxford handbook of the history of eugenics*. Oxford: Oxford University Press.

Benn, G. (2007). "Provoked life: an essay on the anthropology of the ego" in *The psychedelic reader*. eds. T. Leary, G. Weil and R. Metzner (New York: Citadel Press)

Benn, G. (2013). *Selected prose and poems*. London: Carcanet Press.

Besant, A. (2020). *Evolution of life and form*. London: BoD.

Black, J. (2022). Can Superbabies save the world? Business insider. Available at: https://www.businessinsider.com/pronatalism-elon-musk-simone-malcolm-collins-underpopulation-breeding-tech-2022-11 (Accessed January 16, 2023)

Blavatsky, Helena. (2012). *The secret doctrine*. Los Angeles, CA: Library of Alexandria.

Bowler, P. J. (2000). "Evolution" in *The history of science and religion in the Western tradition: an encyclopedia*. eds. G. B. Ferngren, E. J. Larson and D. W. Amundsen (London: Routledge)

Bowler, P. J. (2003). *Evolution: the history of an idea*. Berkeley, CA: University of California Press.

Brown, D. J. (2015). *Frontiers of psychedelic consciousness*. New York, NY: Park Street Press.

Bucke, R. M. (2000). *Cosmic consciousness: a study in the evolution of the human mind*. Carlisle: Applewood Books.

Burbank, L. (1907). *The training of the human plant*. New York, NY: Century Co.

Carey, J. (1992). *The intellectuals and the masses: pride and prejudice among the literary intelligentsia, 1880–1939*. London: Faber & Faber.

Chonaill, S. (2007). 'Why may not man one day be immortal?': Population, perfectibility, and the immortality question in Godwin's political justice. *History of European Ideas* 33, 25–39. doi: 10.1016/j.histeuroideas.2006.06.003

Crowley, A. (2004). *The book of the law*. New York, NY: NuVision Publications.

Doblin, R. (2014). *Introduction to Shroder, T, acid test: LSD, MDMA and the power to heal*. Novel York, NY: Plume Books.

Dunnington, K. (2019) *Humility, pride, and Christian virtue theory*. Oxford: Oxford University Press.

Elcock, C. (2013). From acid revolution to Entheogenic evolution: psychedelic philosophy in the sixties and beyond. *J. Am. Cult.* 36, 296–311. doi: 10.1111/jacc.12051

Ellis, H. (1898). Mescal: a new artificial paradise. *Contemp. Theatr. Rev.* 1866–1900, 130–141.

Ellis, H. (1912). *The task of social hygiene*. London: Constable & Company.

Emerson, R. W. (1975). *The journals and miscellaneous notebooks of Ralph Waldo Emerson: 1848–1851*. Harvard: Harvard University Press.

Erlich, P. R. (1968). *The population bomb*. New York: Ballantine Books.

Evans, J. (2018). Is psychedelic research closer to theology than science? Aeon, June 17. Available at: https://aeon.co/essays/is-psychedelics-research-closer-to-theology-than-to-science (Accessed January 15, 2023).

Evans, J. (2021a). Jamie wheal on going beyond alpha burner party crowd spirituality, July 22. Available at: https://www.youtube.com/watch?v=XG89xUm8Hz0 (Accessed January 16, 2023).

Evans, J. (2021b). Abraham Maslow, empirical spirituality and the crisis of values. Medium, March 31. Available at: https://julesevans.medium.com/abraham-maslow-empirical-spirituality-and-the-crisis-of-values-34148b775f1a (Accessed January 15, 2023).

Evans, J. (2021c). Occult eugenics and the hermetic order of the Golden Dawn. Medium, December 10. Available at: https://julesevans.medium.com/6-dune-the-hermetic-order-of-the-golden-dawn-and-occult-eugenics-8a6f0d3e04e7 (Accessed January 15, 2023)

Evans, J. (2022a). David Pearce and the eugenics of bliss. November 6. Available at: https://www.youtube.com/watch?v=qYupaIL-8aw (Accessed January 15, 2023).

Evans, J. (2022b). Timothy Leary's psychedelic eugenics. Medium, October 6. Available at: https://medium.com/spiritual-eugenics/timothy-learys-psychedelic-eugenics-7cd28f42764d (Accessed January 15, 2023).

Evans, J. (2022c). How did transhumanism become the religion of the super-rich?. Medium, October 28. Available at: https://julesevans.medium.com/how-did-transhumanism-become-the-religion-of-the-super-rich-d670a410b01a (Accessed January 15, 2023).

Evans, J. (2022d). On psychical research and eugenics. Philosophy for Life, January 12. Available at: https://www.philosophyforlife.org/blog/9-on-psychical-research-and-eugenics (Accessed January 16, 2023).

Fallby, A. (2020). *Between the pigeonholes: Gerald Heard 1889–1971*. Cambridge: Cambridge Scholars Publishing.

Ferguson, M. (1981). *The Aquarian conspiracy: personal and social transformation in the 1980s*. London: Routledge.

Ferriss, Tim. (2016). Eric Weinstein interview (full episode)|the Tim Ferriss show (podcast), January 30. Available at: https://www.youtube.com/watch?v=8LPwyy4scAc (Accessed January 15, 2023).

Galton, F. (1865). Hereditary talent and character. *Macmillan's Magazine* 12, 157–166.

Galton, F. (1883). *Inquiries into Human Faculty and its Development*. London: Macmillan and Company.

Galton, F. (1909). *Essays in eugenics*. London: The Eugenics Education Society.

Grof, S. (1996). Consciousness evolution and planetary survival: psychological roots of human violence and greed. *World Fut.* 47:243262, 243–262. doi: 10.1080/02604027.1996.9972599

Heard, G. (1933). Eugenics and the new order. New Britain 1.

Heard, G. (1939). *Pain, sex and time: a new outlook on evolution and the future of man*. London: Harper & Co.

Herrick, J. A. (2003). *The making of the new spirituality: The eclipse of the Western religious tradition*. Downers Grove: Intervarsity Press.

Hofstadter, R. (1944). *Social Darwinism in American thought, 1860–1915*. Philadelphia, PA: University of Pennsylvania Press.

Holub, R. C. (2018). *Nietzsche in the nineteenth century: Social questions and philosophical interventions*. Philadelphia, PA: University of Pennsylvania Press.

Hubbard, B. M. (2015). *The evolutionary testament of co-creation*. Livermore: Muse Harbour Publishing.

Hughes, J. (2004). *Citizen cyborg: Why democratic societies must respond to the redesigned human of the future*. Boulder, CO: Westview Press.

Huston, T. (2007). A brief history of evolutionary spirituality. *Enlighten Next* 2007, 76–80.

Huxley, J. (1933). *What dare I think?: The challenge of modern science to human action and belief*. London: Chatto.

Huxley, A. (1961). Human Potentialities. Lecture at MIT. Available at: https://psychedelicsalon.com/podcasts-454-aldous-huxley-human-potentialities/ (Accessed January 15, 2023).

Huxley, A. (1978). *The human situation: Lectures at Santa Barbara 1959*. London: Random House.

Huxley, A. (1994). *Between the wars: Essays and letters*. Chicago, IL: Ivan R. Dee.

Huxley, T. H. (1997). *The major prose of Thomas Henry Huxley*. Athens: Georgia University Press.

Huxley, A. (2005). *Island*. London: Random House.

Huxley, A., and Osmond, H. (2018). *Psychedelic prophets: The letters of Aldous Huxley and Humphry Osmond*. Montreal: McGill-Queen's University Press.

Huzel, J. P. (1969). Malthus, the poor law, and population in early nineteenth-century England. *Econ. Hist. Rev.* 22, 430–452. doi: 10.2307/2594120

Hyatt, C. S. (1984). *An interview with Israel Regardie: His final thoughts and words*. Phoenix: Falcon Press.

Istvan, Z. (2014). Transhumanism has a conspiracy problem. Vice, October 2. Available at: https://www.vice.com/en/article/z4myn4/transhumanist-a-conspiracy-theory-problem (Accessed January 16, 2023).

Jay, M. (2019). *Mescaline: a global history of the first psychedelic*. New Haven, CT: Yale University Press.

Kripal, J. (2007). *Esalen: America and the religion of no religion*. Chicago, IL: University of Chicago Press.

Lamarck, J. B. (2011). *Zoological philosophy: an exposition with regard to the natural history of animals*. Cambridge: Cambridge University Press.

Lanier, J, and Glenn Wyl, E. (2022). The invasion of Ukraine dramatizes the folly of the sovereign individual. The information, February 24. Available at https://www.theinformation.com/articles/the-invasion-of-ukraine-dramatizes-the-folly-of-the-sovereign-individual (Accessed January 15, 2023)

Leary, T. (1970). *The Politics of Ecstasy*. London: Granada Publishing.

Leary, T. (1974). Terra II: a way out. Internet Archive. Available at: https://archive.org/details/TerraIIAWayOut../mode/2up (Accessed January 15, 2023s).

Leary, T. (1979). *The intelligence agents*. Los Angeles, CA: Peace Press.

Leary, T., and Wilson, R. A. (1978). *The game of life*. Los Angeles: Peace Press.

Lipka, M., and Gecewicz, C. (2017). More Americans now say they're spiritual but not religious. Pew Research, September 6. Available at: https://www.pewresearch.org/fact-tank/2017/09/06/more-americans-now-say-theyre-spiritual-but-not-religious/ (Accessed February 7, 2023).

Lovejoy, A. O. (1936). *The great chain of being: a study of the history of an idea*. New Jersey: Transaction Publishers.

Lovelock, J. (2019). *Novacene: The coming age of Hyperintelligence*. Boston: MIT Press

Malthus, T. R. (1966). *First Essay on Human Population*. London: Palgrave MacMillan.

Manson, M. (2018). The Rise and Fall of Ken Wilber. Markmanson.net. Available at: https://markmanson.net/ken-wilber (Accessed February 27, 2023).

Maslow, A. (1971). *The farther reaches of human nature*. New York, NY: Penguin.

Maslow, A. (1979). *The journals of a. H.* Maslow Monterey: Brooks/Cole.

Maslow, A. (1996a). *The dynamics of American management, in future visions: the unpublished papers of Abraham Maslow*. New York, NY: Sage Publishing.

Maslow, A. (1996b). *Humanistic biology: Elitist implications of the concept of full humanness, in future visions: The unpublished papers of Abraham Maslow*. New York, NY: Sage Publishing.

McKenna, T. K. (1992). *Food of the gods: The search for the original tree of knowledge—A radical history of plants, drugs, and human evolution*. New York, NY: Bantam.

Metzner, R. (1968). On the evolutionary significance of psychedelics. *Main Curr. Modern Thought* 25:1.

Midgley, M. (1985). *Evolution as a Religion*. London: Methuen.

Mill, J. S. (1873). *Autobiography*. London: H. Holt.

Murphy, M. (2013). "The emergence of evolutionary Panentheism" in *Panentheism across the World's traditions*. eds. L. Berniacki and P. Clayton (Oxford: Oxford University Press)

Nietzsche, F. (1911) *Twilight of the idols*. London: TN Foulis

Nietzsche, F. (1997). *Untimely meditations*. Cambridge: Cambridge University Press.

Nietzsche, F. (2006). *Beyond good and evil*. New York, NY: Vintage Books.

Oroc, J. (2018). *The new psychedelic revolution: The genesis of the visionary age*. New York, NY: Park Street Press.

Osho. (2022). The last testament. Available at: https://oshosearch.net/Convert/Articles_Osho/The_Last_Testament_Volume_1/Osho-The-Last-Testament-Volume-1-index.html (Accessed January 15, 2023).

Palmeri, F. (2013). *'State of nature, stages of society': Enlightenment conjectural history and modern social discourse*. New York, NY: Columbia University Press.

Partington, J. S. (2002). "HG Wells' eugenic thinking 1892–1944." in *Paper presented at the Institute of Historical Research Seminar*, University of London, May 22.

Pearson, K. (1930). *The life, letters and Labours of Francis Galton*. Cambridge: Cambridge University Press.

Perrigo, B. (2017). Sean Parker says wealth disparity will create class of 'immortal overlords. Money, November 9. Available at: https://money.com/sean-parker-healthcare-immortal-overlords/ (Accessed January 15, 2023).

Reggiani, A. H. (2006). *God's eugenicist: Alexis carrel and the sociobiology of decline*. Oxford: Berghahn Books.

Richardson, R. D. (2006) *William James: in the maelstrom of American modernism*. Boston, MA: HMH.

Rose, J. (1986). *The Edwardian temperament*. Athens: Ohio University Press.

Rushkoff, D. (2022). *Survival of the richest: Escape fantasies of the tech billionaires*. New York: W.W. Norton & Company.

Schwarz, B. (2011). *The white Man's world*. Oxford: Oxford University Press.

Silver, L. (1997). *Remaking Eden: Cloning and beyond in a brave New World*. Essex: Phoenix Books.

Singleton, M. (2007). Yoga, eugenics, and spiritual Darwinism in the early twentieth century. *Int. J. Hindu Stud.* 11, 125–146. doi: 10.1007/s11407-007-9043-7

Slattery, J. P. (2017). Dangerous tendencies of cosmic theology: the untold legacy of Teilhard de Chardin. *Philosophy Theol.* 29, 69–82. doi: 10.5840/philtheol201611971

Spencer, H. (1892). *Social statics*. London: D. Appleton.

Staudenmaier, P. (2014). *Between occultism and Nazism: Anthroposophy and the politics of race in the fascist era*. Leiden: Brill Publishing.

Steiner, R. (1993). *Vom Leben des Menschen und der Erde*, Dornach: Rudolf Steiner Verlag.

Taylor, B. (2010). *Dark green religion: Nature spirituality and the planetary future*. Los Angeles, CA: University of California Press.

The Diary of a CEO. (2021). A billionaire's guide to healing your mind and extending your life: Christian Angermayer, March 15. Available at: https://www.youtube.com/watch?v=yH5YplNDjJM (Accessed January 15, 2023).

The Harvard Crimson. (1966). Leary says he'll stop LSD use, warns of 'new race of mutants', April 23. Available at: https://www.thecrimson.com/article/1966/4/23/leary-says-hell-stop-lsd-use/

The Rubin Report. (2021). Psychedelics as medicine: What you need to know, July 4. Available at: https://www.youtube.com/watch?v=z055L12weww (Accessed January 15, 2023).

Urban, H. B. (1997). Elitism and Esotericism: Strategies of Secrecy and Power in South Indian Tantra and French Freemasonry. *Numen*, 44, 1–38. Available at: http://www.jstor.org/stable/3270380

Valiunas, Algis. (2011). Abraham Maslow and the all-American self. New Atlantis. Fall 2011. Available at: https://www.thenewatlantis.com/publications/abraham-maslow-and-the-all-american-self (Accessed January 16, 2023).

Wallace, A. R. (2003). *Infinite tropics: an Alfred Russel Wallace anthology*. London: Verso Books

Weikart, R. (2002). Darwinism and death: devaluing human life in Germany 1859–1920. *J. Hist. Ideas* 63, 323–344. doi: 10.2307/3654200

Weindling, P. (2012). Julian Huxley and the continuity of eugenics in twentieth-century Britain. *J. Mod. Eur. Hist.* 10, 480–499. doi: 10.17104/1611-8944_2012_4

Wells, H. G. (1902). *Anticipations of the reaction of mechanical and scientific progress upon human life and thought*. London: Chapman & Hall.

Wells, H. G. (1923). *Men Like Gods*. London: Macmillan.

Wells, H. G., Wells, G., and Huxley, J. (1934). *The science of life*. New York: The Literary Guild.

Whitsel, B. (1998). The Turner diaries and Cosmotheism: William Pierce's theology. *Nova Religio J. Altern. Emerg. Religions* 1, 183–197. doi: 10.1525/nr.1998.1.2.183

Wilber, K. (1993). The great chain of being. *J. Humanist. Psychol.* 33, 52–65. doi: 10.1177/00221678930333006

Wilber, K. (2017). Your superhuman potential. Awaken. Available at https://awaken.com/2017/02/ken-wilber-your-superhuman-potential/ (Accessed January 15, 2023).

Wilson, R. W. (1983). *Prometheus rising*. Los Angeles, CA: New Falcon Publications.

Wilson, B. C. (2014). *Dr John Harvey Kellogg and the religion of biologic living*. Bloomington, IN: Indiana University Press.

Wolfe, T. (1968). *The electric Kool-aid acid test*. New York, NY: Farrar, Straus & Giroux.

Yeats, W. B. (1962). *On the boiler*. London: Macmillan.

Yudkowsky, E. (2008). Competent Elites. Alignment Forum, September 27. Available at: https://www.alignmentforum.org/posts/CKpByWmsZ8WmpHtYa/competent-elites (Accessed January 16, 2023).

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On the need for metaphysics in psychedelic therapy and research

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The essential proposal of this text is that psychedelic-induced metaphysical experiences should be integrated and evaluated with recourse to metaphysics. It will be argued that there is a potential extra benefit to patients in psychedelic-assisted therapy if they are provided with an optional, additional, and intelligible schema and discussion of metaphysical options at the integrative phase of the therapy. This schema (the "Metaphysics Matrix") and a new Metaphysics Matrix Questionnaire ("MMQ") stemming therefrom will be presented, the latter of which can also be used as an alternative or additional tool for quantitative measurement of psychedelic experience in trials. Metaphysics is not mysticism, despite some overlap; and certainly not all psychedelic experience is metaphysical or mystical—all three terms will be defined and contrasted. Thereafter psychedelic therapy will be presented and analysed in order to reveal the missing place for metaphysics. Metaphysics, with epistemology (theory of knowledge) and axiology (ethics and aesthetics), is a defining branch of Philosophy. Metaphysics, in contrast to mysticism, is considered to be based on argument rather than pure revelation. Thus, in psychedelic-assisted psychotherapy one sees here the potential bridge between reason-based philosophy and practical therapy—or, more broadly, with psychedelic-assisted psychotherapy there is the potential and mutually beneficial fusion of philosophy with practical science.

KEYWORDS

metaphysics, mysticism, psychedelics, integration, philosophy, psychedelic-assisted psychotherapy, ontology, questionnaires

Introduction

Metaphysics should be used to integrate and understand psychedelic-induced metaphysical experiences. That this proposition is near tautologically obvious yet not implemented in practice is the deficiency which this text seeks to remedy. Metaphysics is taken to be one of three core pillars of the discipline of Philosophy.[1] Adorno (2001 [1965], p. 1) goes as far as to claim that "philosophy owes its existence to metaphysics." Psychiatrist Humphry Osmond, in the 1957 paper in which he coined the word "psychedelic,"[2] wrote that "perhaps most important: there are social, philosophical, and religious implications

1 The other two are epistemology (theory of knowledge) and axiology (ethics and aesthetics).

2 Osmond wrote here that psychedelic meant "mind-manifesting" (Osmond, 1957, p. 429). Though this was the first published use of the word, Osmond had proposed the word a year earlier in his correspondence with Aldous Huxley (see Dickins, 2022).

in the discoveries made by means of these agents" (1957, p. 432), paying heed therein to philosophers William James, Henri Bergson, John R. Smythies, and Immanuel Kant. There are indeed philosophical implications of psychedelic use,[3] interwoven with the social and religious, and these implications can be used, I submit, to facilitate the integrative phase of psychedelic-assisted psychotherapy.

In this text we shall see how certain psychedelic experiences that seem to effect therapeutic outcomes in psychedelic-assisted psychotherapy can be viewed as intuitions or *experiences of* established metaphysical systems (outlined in Figure 1). For instance, experiencing the cosmos as sentient can be identified with the metaphysical system of Cosmopsychism (fourth column, first row of the Metaphysics Matrix). Enabling the recognition of such experiences as experiences of metaphysical systems through an additional and optional Metaphysics Integration strand within psychedelic-assisted psychotherapy could fortify, it will be proposed, the integration of a number of psychedelic experiences and thereby, it will be conjectured, lead to longer-term positive outcomes for certain patients—and life enrichment for others. Metaphysics is not mysticism (their differences are examined below); metaphysics is broader and its positions can be logically deliberated—as such metaphysics can *encompass* mystical experiences induced by psychedelic intake yet metaphysics can also *ground* those experiences in a manner that can be more intelligible, comprehensive, viable, and acceptable to participants than that which the framework of mysticism alone can offer. In brief, Metaphysics Integration could enhance psychedelic therapy.

Metaphysics concerns the fundamental nature of reality. It explores, as we shall see in the following section, issues such as the relation of mind to matter, to the cosmos, the nature of space, time, and causation, of self and identity, the possible and the eternal, of the nature of existence itself. Metaphysics—though it is neither mysticism nor physics—can perhaps be situated as a strict rational discipline between (or above, or below) both. Russell (1951 [1914], p. 1), in his essay on "Mysticism and Logic," contends that "Metaphysics, or the attempt to conceive the world as a whole by means of thought, has been developed … by the union and conflict of two very different human impulses, the one urging men towards mysticism, the other urging them towards science." Metaphysics is a rigorous subject that demonstrates its conclusions through logical argument rather than through empirical data, revelation, or intuition—*though certain metaphysical intuitions may trigger exploration of the arguments*. To give two examples: Bergson argued that Plato was catalysed in his dualistic metaphysical positions partly through initiation at the Mysteries (Bergson, 1935, p. 185–186; see also Inge, 1938, p. 392ff). Deleuze argued that the metaphysical position that is Spinozism could be attained *via* an "extraordinary conceptual apparatus" *or via* a "sudden illumination … a flash. Then it is as if one discovers that one is a Spinozist" (Deleuze, 1988 [1970], p. 129). Thus, metaphysics has both *intellectual* and *experiential* facets (Bossart, 1961; James, 1977 [1902], p. 373; Adorno, 2001 [1965], p. 137–145). Certain, but certainly not all, psychedelic experiences are metaphysical experiences. That such metaphysical experiences have accompanying metaphysical intellectualizations is a fact that can be utilised for psychedelic therapy and research.

Let us look more practically at the proposal: The protocol for psychedelic-assisted psychotherapy should, as its final phase—the *integrative phase* where the psychedelic-induced experience is reflected upon as regards its significance—include as an *optional* and *additional* element an intelligible metaphysical discourse based upon the Metaphysics Matrix (Figure 1). This matrix seeks to outline a reasonably comprehensive "menu" of metaphysical options, some of which may help experiencers to frame and thus make sense of, and give significance to, their experiences. In turn, it is conjectured that such additional metaphysical sense-making will increase the long-term benefits of psychedelic-assisted psychotherapy. This conjecture stems from two main seeds: First, there is compelling evidence that psychedelic-induced metaphysical experiences *per se* are a mechanism of positive psychological benefit (Roseman et al., 2018; Mollaahmetoglu et al., 2021; Rothberg et al., 2021; Yaden and Griffiths, 2021; Ko et al., 2022; McCulloch et al., 2022). Second is the thought that there may be less reason for the individual to come to reject the significance of such experiences as delusional once they realise that there may be more reason to bestow potential veridicality to the experience. The metaphysical positions of Platonism (a type of Universal Realism) and Spinozism (a type of Neutral Monism)—see Appendix 1: MMQ for a glossary of terms—for example, have, regardless of their truth or falsity, centuries of exacting arguments in their favour and thus cannot be dismissed flippantly. In this way, even a simple understanding of metaphysics may endow a lasting significance to the person who has undergone an associated metaphysical experience. At least, this is the conjecture, *a conjecture that can be tested*.

Psychedelic-assisted psychotherapy, though it has roots in the mid-20th century (Grof, 2008 [1980]), is still in its sapling stage. Much of it is based on psychotherapies and psychological theories that were developed without any explicit consideration of intensive metaphysical experience. That is to say that we are trying to repurpose a tool not designed for the matter at hand—using a hammer to correct grammar. From this perspective, it can be understood that integrating metaphysics within psychedelic-assisted psychotherapy is an adjustment that expedites the alignment of the therapy with its subject matter: metaphysics for metaphysical experience. Furthermore, it should be noted that integrating certain psychedelic experiences *via* metaphysics is not merely of potential benefit to those seeking help from mental ailments, but, outside the clinic, such metaphysical integration of psychedelic experience could be beneficial to "healthy" individuals and groups in terms of life enrichment.

A secondary proposal is that this same Metaphysics Matrix can be used in clinical psychedelic trials to gauge the metaphysical nature of psychedelic experiences. A new questionnaire (Appendix 1), the Metaphysics Matrix Questionnaire (MMQ), can be used in addition to, or instead of, current questionnaires (see Herrmann et al., 2022) that are generally based on definitions of mystical experience alone (especially those based on Stace, 1960). But, as immediately concerns this paper, the MMQ can be used, as mentioned, as a *glossary* for the (capitalised) metaphysical positions referred to throughout. As we shall see,

3 See Hauskeller et al. (2022), for an overview and analysis of the relations between philosophy and psychedelics.

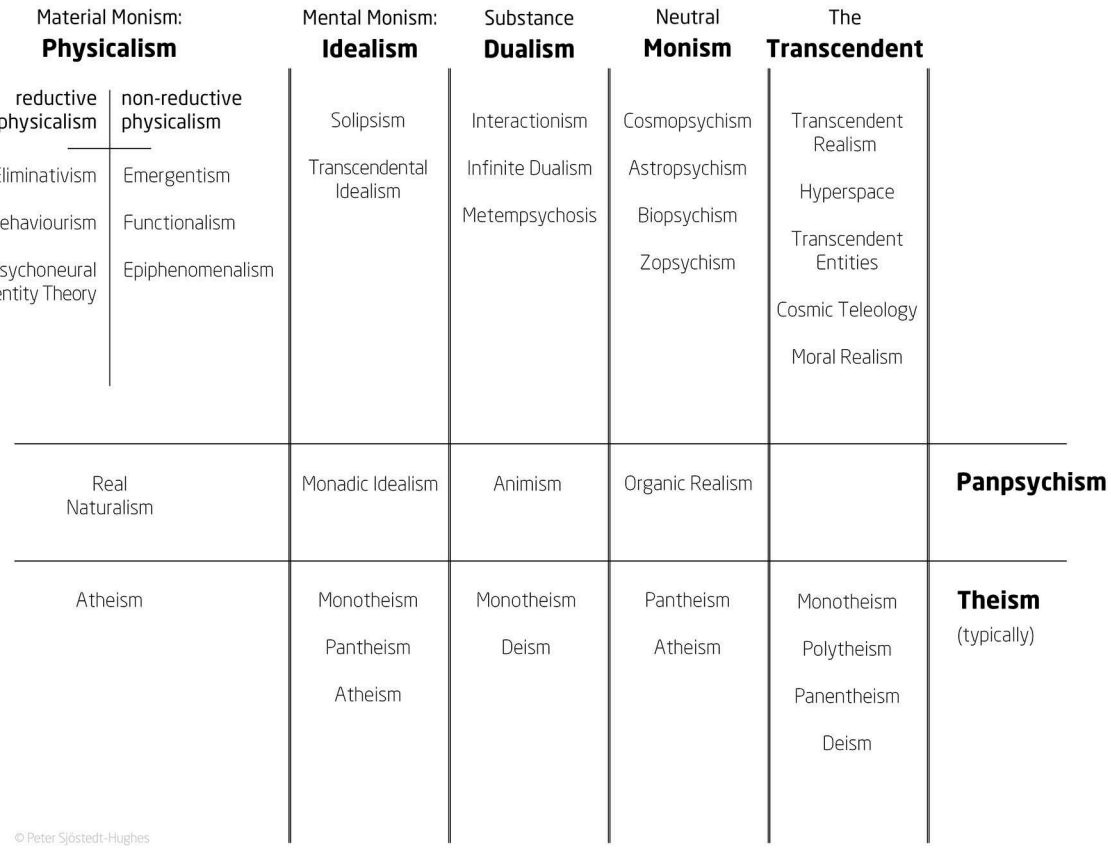

FIGURE 1
Metaphysics Matrix.

mystical experience—including "transpersonal experience" (Grof, 2009 [1975], p. 157–217) and "numinous experience" (Otto, 1926 [1917]; Spilka et al., 2003)—is not the same as metaphysical experience, even though there are overlaps (see Figures 2, 3). There are many metaphysical options that are not covered by mystical experience questionnaires—as will be explained in the sections below—which entails that the MMQ can augment the quantitative data in psychedelic trials and research, as well as in other research concerning metaphysical experience.[4]

In order to show how metaphysics may aid psychedelic-assisted psychotherapy, we shall examine what metaphysics is, how it maps on to particular psychedelic experiences and how it differs and has similarities to mysticism, what psychedelic-assisted psychotherapy is with a focus on integration, and how its deficiencies may be aided *via* augmentation with metaphysical integration conducing to, it is conjectured, longer-term mental health benefits. *In sum*, the proposal is to include Metaphysics Integration within psychedelic-assisted psychotherapy; the conjecture is that this will lead to longer-term therapeutic benefits.

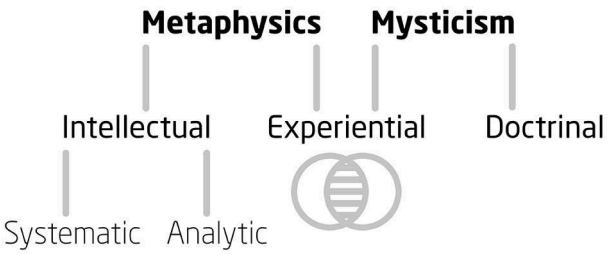

FIGURE 2
Metaphysics and Mysticism.

What is metaphysics?

The word "metaphysics" comes from the title of one of Aristotle's (384–322BC) texts (Aristotle, 2004), and the subject matter of metaphysics is thus related (yet developed) from that of the book. Aristotle's *Metaphysics* was named as such—by a later editor, possibly Andronicus of Rhodes, fl. c. 60BC (Marmodoro and Mayr, 2019)—because the texts that comprise the volume came *after* (*meta*) Aristotle's writings on physics (Aristotle, 2008). That bundle we now call Aristotle's book, *Physics*, however, also contains much of what we today would

4 The MMQ is already being used in one such research project: https://blogs.exeter.ac.uk/philosophyandpsychedelics/affiliates/projects/metaphysics-matrix-project/.

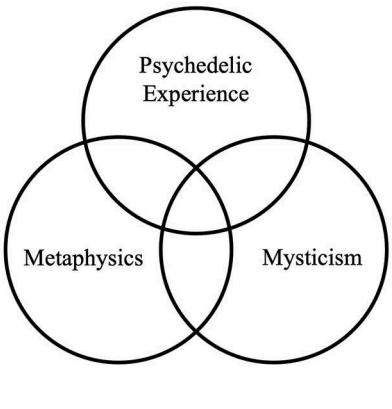

FIGURE 3
The PEMM Tristinction.

include within metaphysics (viz. change, infinity, time, an eternal cause). But, to step back, metaphysics, or "First Philosophy," is, Aristotle writes, a "science whose remit is being *qua* being" (2004, p. 79 [Book Gamma, §1]). In other words, metaphysics' concern is the fundamental nature of existence itself. The Greek word for being, existence, is *óntos*, from which we get the term, "ontology," which is at times used synonymously for metaphysics and at other times used as a subset of metaphysics. Yet if the latter, it is still the case that at "the heart of metaphysics is *ontology*" (Heil, 2021, p. 5). The way in which Aristotle analyses existence provides fundamental subject areas of metaphysics to this day, namely substance, causation, properties, relations, plurality and unity, species and genera, movement, identity, universals, particulars, categories, modality (potentiality, impossibility, actuality, necessity), form, space, time, matter, and divinity (the Prime Mover). Aristotle refers to and reviews the metaphysics of earlier thinkers such as Democritus (Physicalism), Pythagoras (mathematical Transcendent Realism), Parmenides (Neutral Monism), and especially his teacher Plato (Transcendent Realism, Substance Dualism)—it would therefore be an error to claim that metaphysics began with Aristotle: the discipline preceded the book.

In the 20th century, following the ascension of philosophies of language, logical behaviourism, and logical positivism, metaphysics became a derogatory term (Carr, 1987, p. 1; Beards, 2008, p. 10–19). It was a commonplace belief in philosophy (and other) departments that many, if not all, metaphysical issues—such as the relation of consciousness to matter, or the ontological status of time—could be reduced to, or explained away as, errors or meaningless expressions produced by the deceptive by-products of language. Though common, this negative evaluation of metaphysics was certainly not ubiquitous (see for instance Collingwood, 1940). Regardless, as the 21st century began to draw in, the limitations of these popular reductive philosophies—in the English-speaking world especially—were realised, and their own hidden metaphysical assumptions were brought to light. Consequently "there has been a quite remarkable revival of interest in metaphysics in Anglo-American philosophical circles during the last 30 years or so" (Beards, 2008, p. 10)—the so-called "metaphysical turn" (ibid., p. 11). This turn can be represented by the trajectory of the thought of Oxford philosopher A. J. Ayer, the most celebrated English advocate of logical positivism—the doctrine that a proposition is only meaningful if it is either empirically verifiable in principle or true by definition. In 1934, Ayer wrote an article named "Demonstration of the Impossibility of Metaphysics" declaring metaphysics annulled by these tenets of logical positivism (Ayer, 1934). But when asked in 1978 what the main shortcomings were of logical positivism, Ayer replied that "nearly all of it was false,"[5] and in 1982 admitted that "Metaphysics is no longer a term of opprobrium" (Ayer, A. J., 1987 [1982], p. 140). Incidentally, in 1988 Ayer reported an intense psychedelic-like cosmic trip induced by a 4-min cardiac arrest brought on by choking on smoked salmon whilst already suffering pneumonia. The result of this single experience was his metaphysical supposition speculating that "death does not put an end to consciousness" (Ayer, 1990, p. 201).[6] He died the following year.

Metaphysics is a demanding subject at university level. One might bifurcate the subject into two pathways. The first is the more traditional study of the work of established metaphysicians who often present an intellectual metaphysical *system*—figures such as the aforementioned Greeks, the neo-Platonists (Plotinus to Proclus), the "canonical seven philosophers" (Beaney, 2018) of the West (Descartes, Locke, Spinoza, Leibniz, Berkeley, Hume, and Kant), non-Western thinkers such as Rāmānuja, Lao Tzu, Nezahualcoyotl, or the more recent Nishida Kitaro (1870–1945) of the Kyoto School, et al. The second pathway is that of "analytic metaphysics" which is more concerned with the logic of separated-rather-than-systematic aspects such as the concepts of "substance," "cause," "disposition," "identity," "self," "property," "freedom," "supervenience," "possibility," "space," "time," etc. (Carr, 1987; Kim and Sosa, 1999; Lowe, 2002; Marmodoro and Mayr, 2019; Heil, 2021).[7] Both pathways inherit subject matter from Aristotle's *Metaphysics*, yet both develop and augment the discipline.

There is an (aforementioned) second sense in which metaphysics can be bifurcated, by which the previous bifurcation becomes the first branch of this more general one. There is what might be named *intellectual metaphysics* (divided into *systematic* and *analytic metaphysics*, as above), and there is *experiential metaphysics* (see Figure 2). Intellectual metaphysics is an abstract, *non-empirical* study—located as such between logic and physics. Experiential metaphysics is, on the other hand, as its name

5 This was said in an interview about logical positivism with Bryan Magee, on the BBC television show, *Men of Ideas*.

6 The reference is to Ayer's posthumous collection of essays, but the original article, "What I Saw When I was Dead" was published in *The Sunday Telegraph* (28th August 1988).

7 If we take the volume edited by Kim and Sosa (1999) as an exemplar of analytic metaphysics, we can learn what the subject concerns by looking at the sections of the volume: existence, identity, modalities and possible worlds, universals, properties, kinds, things and their persistence, the persistence of self, causation, emergence, reduction, supervenience, and realism/antirealism.

suggests, empirical. But it is not empirical in the normal sense of course: these doors, to employ Blake and Huxley's metaphor, are open. William James refers to experiential metaphysics when he writes that "in the nitrous oxide trance we have a genuine metaphysical revelation" (1977 [1902], p. 373; see also James, 1882, p. 206). To provide an example of the difference between intellectual and experiential metaphysics, respectively: one might give intellectual arguments for the feasibility of Pantheism (e.g. Sprigge, 1997, 2008), yet one may also, or instead, undergo an experience of feeling a beatific sentience that rolls through Nature. In the well-trodden words of Wordsworth:

> "… And I have felt
> A presence that disturbs me with the joy
> Of elevated thoughts; a sense sublime
> Of something far more deeply interfused,
> Whose dwelling is the light of setting suns,
> And the round ocean and the living air,
> And the blue sky, and in the mind of man:
> A motion and a spirit, that impels
> All thinking things, all objects of all thought,
> And rolls through all things. Therefore am I still
> A lover of the meadows and the woods and mountains.
> …." (Wordsworth, 1994, p. 207: The Tintern Abbey Ode)[8]

Physics and metaphysics both seek to understand the structure of reality. They may differ in their methods and content, but they are not of necessity in competition. A number of eminent physicists have been enamoured with metaphysics, such as Einstein, Schrödinger,[9] and Heisenberg.[10] Einstein was an ardent Spinozist, for instance, stating that "Spinoza is the greatest of modern philosophers, because he is the first philosopher who deals with the soul and the body as one…" (stated in an interview for Viereck, 1930, p. 373). And it is here where physics and metaphysics essentially differ: metaphysics is very much concerned with *mind* and its relation to body, or to physicality and the cosmos as a whole—whereas physics has little to no concern for mind. The reasons for this distinction are historical (see Whitehead, 1935 [1925]; Collingwood, 1945) and not relevant here. What is relevant is that this mind-matter problem is a core issue in metaphysics and one that relates intellectual to experiential metaphysics. We can move down within metaphysics, into ontology, into the issue of *substance*—that which "sub-stands" under all, that which is the fundamental stuff (or process)[11] of reality. The question is what substance *is*. Is it matter (Physicalism)? Is it mind (Idealism)? Is it both matter and mind (Substance Dualism)? Is it something that incorporates matter and mind (Neutral Monism)? Is it something that transcends matter and mind (Transcendent Realism)? Are there further options? All known options have numerous arguments in their favour, and innumerable criticisms. There is no default, standard option. Even Physicalism is, ironically, a metaphysical position and should not be adopted without due caution. One cannot avoid metaphysics. As mathematician and philosopher Alfred North Whitehead said, "If you don't go into metaphysics, you assume an uncritical metaphysics" (quoted in Petek, 2022, p. 43). One can only judge a viewpoint and its experience to be *delusional* if one knows what reality is[12]—and there is no agreement. We do not know the solution to the "hard problem of consciousness," *the mind-matter problem*—what the *relation* is between mind and matter (Chalmers, 1995; Kim, 2005, p. 7–31). More specifically, to use philosophic parlance, we do not know the necessary and sufficient conditions for mind. We should therefore keep our minds open to a range of metaphysical positions.

These aforementioned metaphysical, ontological positions have been placed as the columns of the Metaphysics Matrix (Figure 1). These positions, defined here *via* the MMQ (Appendix 1), are capable of being understood both intellectually and experientially. Indeed, it is the intention here to relate psychedelic- (and otherwise-) induced metaphysical experiences (experiential metaphysics) to their associated intellectually cognized metaphysics so to gain a greater understanding of people's experience and, in so doing, to attain the possibility of bestowing more significance to the experience. If it is the case that it is metaphysical experiences that provide the mechanism for positive outcomes in psychedelic therapy (see below), then—to reiterate—it is the conjecture here that the ability to frame the experience metaphysically will yield longer-term positive outcomes because one is less likely later to reject an experience that correlates to an intellectual position supported by reason through an established, eminent lineage of rigorous debate.

The Metaphysics Matrix is non-exhaustive—there are many other options not there presented. This is because it is designed for practicality rather than exhaustivity. It contains the main strands of metaphysics, in the core sense of ontology, as five columns and two rows. Panpsychism (that minds are ubiquitous in Nature, from the human to the subatomic) takes its own row in order to traverse varieties physicalist, idealist, dualist, and neutral monist. As Skrbina (2007, p. 2) argues, panpsychism "is a meta-theory of mind." Popper and Eccles (1985 [1977], p. 67–71), Strawson and Freeman (2006), and Strawson (2016) for

8 Extract from "Lines Composed a few miles above Tintern Abbey, On Revisiting the Banks of the Wye during a Tour. July 13, 1798." Wordsworth at this time was inspired by the Pantheism of Spinoza. Bullett (1950) classifies Wordsworth as an English mystic.

9 Schrödinger expresses sympathies with biopsychism, Spinoza's Neutral Monism and Cosmopsychism, and a Transcendental Idealism (inspired by Kant, Schopenhauer, and Vedanta) (Schrödinger, 2008 [1961/4]).

10 In Heisenberg's book *Physics and Philosophy* (Heisenberg, 2000 [1958]) he expresses much attraction to Kant's system of Transcendental Idealism.

11 I add this process qualification because it is the qualm of process philosophy, sired by Whitehead (1861–1947), that the fundamental reality is not substance but process alone (see Sjöstedt-Hughes, 2021, p. 87–97).

12 I claim this against those who believe that metaphysical reality is obviously physical (e.g., Sanders and Zijlmans, 2021). The so-called "comforting delusion objection"' to psychedelic-assisted psychotherapy (Pollan, 2015; Letheby, 2021) that claims that therapy is unethical if it does not abide by one particular metaphysical position—namely, Physicalism—may hinder therapy and may hinder it on the basis of an erroneous metaphysics—and ethics: with Stuart Hampshire, one might argue that "Ethics without metaphysics must be non-sense" (Hampshire, 1951, p. 115). An ethical reprimand against metaphysics would be seen as a reprimand against ethics' very condition of existence.

example, classify (with qualifications) Panpsychism as a Physicalist (or, Material Monist) theory; Schopenhauer (1969 [1818]) and Leibniz (1991 [1686, 1714]) offer an Idealist (Mental Monist) version of Panpsychism [Popper and Eccles (ibid., p. 68) quips that "Schopenhauer is a Kantian who has turned panpsychist"]; Spinoza offers a Neutral Monist Panpsychism (1988 [1677], p. 457–458: *Ethics*, IIP13s), which despite its age is still considered by some leading metaphysicians as the most feasible variety. Heil (2021, p. 130), for example, posits that "for Spinoza, consciousness is an attribute pervading the universe, something like a field suffusing spacetime. ... [M]inds might be local concentrations ... the most plausible form of panpsychism."

Consequently, it is inadequate to simply differentiate Panpsychism in opposition to Physicalism, Dualism, etc. In a recent empirical study reported in a paper named "Psychedelics alter metaphysical beliefs" by Timmermann et al. (2021), it was attested that psychedelics tend to shift people's beliefs away from Physicalism ("hard materialism") to Panpsychism. Though this may be suggestive of the truth, it should be treated with a little caution. Firstly because, as noted, Panpsychism is a meta-theory and so can be seen as a type of Physicalism, etc. Secondly, the thirteen-item Metaphysical Beliefs Questionnaire, developed for the study, defined Panpsychism in a way that could also be mistaken for Idealism. There are also certain omissions in the study, notably that of Neutral Monism, and its associated doctrines of Cosmopsychism or Pantheism (God is Nature)—metaphysical views considered by many as central to a peak psychedelic experience (Stace, 1960, p. 207–218; Shanon, 2010 [2002], p. 163ff; Lundborg, 2014, p. 87ff). Though anecdotal, there are also documented cases of psychedelic experience bolstering the metaphysical belief in Physicalism (Langlitz, 2013, p. 204–241).[13] Nonetheless, the general empirical finding that psychedelics have a tendency to shift metaphysical beliefs also implicitly suggests that more focus needs to be placed on metaphysics in psychedelic-assisted psychotherapy.

Theistic views also cut across the ontological columns of the Metaphysics Matrix as a row so to allow for beliefs in divinity without need for specific beliefs in any particular mind-matter ontology. Theism was a part of Aristotle's *Metaphysics* (Book Lambda) wherein he argued for a (non-religious) god (the "Uncaused Cause," or the "Prime Mover"). Whitehead (1935 [1925], p. 249) notes that "Aristotle found it necessary to complete his metaphysics by the introduction of a Prime Mover—God. ... [He] was entirely dispassionate; and he is the last European metaphysician of first-rate importance for whom this claim can be made. After Aristotle, ethical and religious interests began to influence metaphysical conclusions."

It is not the ambit (or possibility) of this paper to explicate the various multicultural, metaphysical positions outlined in the Matrix and its MMQ. This will be the ambition of a separate forthcoming handbook for use by practitioners, patients, and various other psychonauts. Here, it is sufficient to describe what metaphysics is, how it relates to psychedelic experience, and how it differs from, and has similarities with, mystical experience. The notion of "mystical experience" has dominated psychedelic surveys and trials hitherto, so let us look at it.

What is mystical experience?

To ask for a definition of "mystical experience" is to immediately become embroiled within three controversies. The first is simply that the modern definition is ambiguous and thus the scene of embattled conceptual nets (Spilka et al., 2003, p. 299). The second is that it is disputed whether there exists one qualitatively identical, transcultural, perennial, common core mystical experience to be defined. This "perrenialism," or "perennial philosophy" (*philosophia perennis*) was coined and developed by Roman Catholic (Augustinian) theologian and Renaissance (neo-) Platonist Agostino Steuco in 1540 (Schmitt, 1966). Against this lineage of perennialism that maintains that there is such a common core mystical experience (Leuba, 1925; Stace, 1960; Staal, 1975; James, 1977 [1902]; Huxley, 2004 [1954/1956]) is opposed the "contextualism" that asserts (Katz, 1978, 1983) that personal and cultural contexts condition not merely the interpretation and report of an experience but the very experience itself. To simplify: Perennialism claims that mystical experience *deconditions* one from culture; contextualism claims that mystical experiences are *conditioned by* culture. There is a third way of course—Ann Taves, for example, argues that though culture determines much of a psychedelic-induced mystical experience, a high-enough dose of a potent psychedelic drug is also a significant causal factor: "the differential effects of both types and doses of psychedelics on participants clearly establish that the subjects' experiences are not simply the result of these [cultural] factors" (Taves, 2020, p. 679). Set and setting play an important role, but drug and dose play one too. Here is not the place to explore this debate (see Baier, 2017), though it obviously has potential ramifications for the objectivity of certain psychedelic phenomenological studies. It should further be noted that perennialism can be divided into those who believe the common core mystical experience is veridical, and those who believe that, though it is a transcultural, human experience, it is nonetheless a delusion. The third controversy, that will also be avoided, is the question as to whether psychedelic drugs, rather than seasoned religious practice, can occasion genuine mystical experience (if there is such a thing). Zaehner (1961 [1957], 1972) and Suzuki (1971), for instance, argued they cannot (see Odin, 2022 on the latter).

We will have to enter the first controversy, however, to loosely define and thereby make intelligible for discussion "mystical experience," so that we can thereafter compare and contrast it to metaphysics. We begin with the etymology of "mystical experience," reducible to "mystic."

From the Greek root *myo*, meaning "to close" (the eyes), we get *mys-tes*, meaning an "initiate" into secret rites (Oxford Classical Dictionary), a "mystic." This relates to the Mystery sects of ancient Greece, the most established of which were the Eleusinian Mysteries (Kerényi, 1967). The first known reference to "mystic" (*mys-tes*) comes from the philosopher Heraclitus (fl. c. 500BC) (frg. B15 DK; ibid.). Plato also speaks of the Mysteries,

13 This page range covers the sixth chapter named "Mystic Materialism." The case of Honza Samotar therein (p. 214–220) is especially noteworthy.

wanting himself to be counted a mystic (*Phaedo*: Plato, 2002, 69c–d), and we glimpse here Bergson's and Russell's contention that mysticism had a catalytic effect upon metaphysics. Aristotle also spoke of the Mysteries, writing that (frg. 15) "initiation did not teach (*matheîn ti*) but rather conveyed an experience (*pathein ti*)" (Oxford Classical Dictionary), reflecting another relation between metaphysics and mysticism, respectively. Before the Mysteries were closed down after two millennia late in the fourth century by the Christian Roman Emperor Theodosius I, the pagan philosopher Plotinus (AD204/5–270) had developed a monistic mystical metaphysics that would found a school (Neoplatonism) and that would have much influence upon Christianity and thus the Western understanding of "mystical experience" (Spilka et al., 2003; Gertz, 2022, p. 299 (referencing Albrecht Ritschl); Katz, 1978, p. 41; Leuba, 1925, p. 305). The central tenet of Plotinus' metaphysical system is "The One." Plotinus arrives at this tenet through means both intellectual (*via* Plato and Philo) and experiential. In the *Enneads*, Plotinus writes that:

> "The man who obtains the vision becomes, as it were, another being. He ceases to be himself, retains nothing of himself. Absorbed in the beyond he is one with it, like a center coincident with another center. While the centers coincide, they are one. They become two only when they separate. It is in this sense that we can speak of The One as something separate.
>
> This, doubtless, is what is back of the injunction of the mystery religions which prohibit revelation to the uninitiated. The divine is not expressible, so the initiate is forbidden to speak of it to anyone who has not been fortunate enough to have beheld it himself. The vision, in any case, did not imply duality; the man who saw was identical with what he saw. Hence he did not 'see' it but rather was 'oned' with it." (*Ennead* VI, 9 [9], §§10–11: O'Brien, 1964, p. 87)

This sense of unity of the self with a greater existence thus lies at the heart of the current understanding of mysticism. Underhill (1914, p. 3) writes that "Mysticism is the art of Union with Reality." In James H. Leuba's 1925 tome, *The Psychology of Religious Mysticism*—wherein incidentally there is a chapter on mystical ecstasy produced by drugs (viz. alcohol, mescaline, hashish, ether, and nitrous oxide)—Leuba (1925, p. 1) defines "mystical" thus: "[The] term 'mystical' … will mean for us any experience taken by the experiencer to be a contact (not through the senses, but 'immediate,' 'intuitive') or union of the self with a larger-than-self, be it called the World-Spirit, God, the Absolute, or otherwise." This definition takes inspiration from Plotinian philosophy, but also from the then-concurrent milieu of Hegelian Idealism ("World-Spirit," *Weltgeist*) and its offshoot, Absolute Idealism ("the Absolute") (see Robbins, 1982). Leuba speculates that Plotinus was also inspired by Vedanta philosophy (1925, p. 305)—regardless of the scarcely substantiated truth of which, the influence and fusion of such Eastern thought upon Western notions of mysticism cannot be doubted (see Lenson, 1995, p. 144ff: "Acid Metaphysics"). Philosopher and psychologist James (1977 [1902], p. 404) too epitomises mystical experience in likewise fashion: "In mystic states we both become one with the Absolute and we become aware of our oneness." Carpenter (1892) named such a state "Cosmic Consciousness";[14] Freud (2002 [1930], p. 3ff), borrowing from personal letters from Romain Rolland, referred to this unbounded feeling as the "Oceanic" (Rolland used it originally in reference to "the flash of Spinoza"—see Sjöstedt-Hughes, 2022). In terms of this paper's intention, it can be noted here that though mystical experience appears intuitive rather than intellectual, *the intuition is framed from the historical start in intellectual metaphysics* for intelligibility and added *significance*. The neo-Cambridge Platonist W. R. Inge laments, against the dominantly psychological study of mysticism inaugurated in the 20th century, that "mysticism is essentially ontological; the contemplative cares nothing for states of consciousness. His business is with the ultimately real." (1938, p. 388). There is then an overlap between mystical and metaphysical experience: "Union" (of Self and Greater) can be intellectualised through a number of metaphysical systems such as Transcendent Realism and Idealism. Wider still, if mystical experience is essentially and concisely defined as believed "direct experience of ultimate reality" (Carmody and Carmody, 1996, p. 10), and if metaphysics is defined as concerning "the fundamental structure of reality" (Lowe, 2002, p. 2–3), then metaphysics concerns itself with the ultimate reality that mystics claim to experience, as well as aspects of reality beyond mystical experience (see Figure 3). Thus psychedelic-assisted psychotherapy might attain more meaningful and significant outcomes were it to employ metaphysics *to frame* such metaphysical experiences.

William James, in his 1902 book *The Varieties of Religious Experience*, catalysed the academic interest into mystical states (Inge, 1938, p. 387), and furthermore advanced the view that such states can be occasioned through chemical agents — though there were earlier exponents of this view: it was Benjamin Paul Blood who pushed James into this very idea with his unusual little book of 1874: *The Anaesthetic Revelation and the Gist of Philosophy* (Blood, 2020 [1874]). Almost a decade after *The Varieties*, William James put forward an explicitly Fechnerian theory of mystical consciousness, related to Cosmopsychism and psychophysics which he fused with the philosophy of Hegel and Bergson (James, 1909, 1910). However, mysticism is obviously understood in ways other than this, and in ways other than mere union with reality, or reality as union. It is beyond the ambit of this text to elaborate on all of these varying definitions and classifications of mystical experience. But let us enumerate certain criteria (not exhaustive) by which "mystical experience" has been understood, so to provide a little more overview of what "mystical experience" is taken to be, and to provide references for further exploration.

- James (1977 [1902], p. 367ff)
  1. Ineffability
  2. Noetic quality

14 See Ganeri (2022) for the Indian influence upon Carpenter's notion of the term. But note, in addition to Ganeri's insightful analysis, that another influence of the name and concept was most likely the Hegelian term 'eternal consciousness' that was popular in the Anglo-American Absolute Idealist circles of the time. Note also that psychiatrist R. M. Bucke named his 1901 book *Cosmic Consciousness* and took this state of mind to be an evolutionary development (Bucke, 1947 [1947 [1901]]).

3. Transiency
4. Passivity

- Underhill (1911, p. 78ff)

1. Activity and Practicality
2. Transcendent intentionality
3. Love of The One
4. Unitive State

- Russell (1951 [1914], p. 12ff)

1. Intuitive (not Rational)
2. Unitive (not Plural)[15]
3. The Unreality of Time
4. Beyond Good and Evil

- Otto (1926 [1917], p. 12–41)[16]

1. Awefulness
2. Overpoweringness
3. Energy
4. The wholly other

- Stace (1960, p. 79ff)

A. Introvertive and Extrovertive Mysticism

1. The Unitary consciousness; The One, the Void, Pure Consciousness
2. The immanence of The One in all things
3. Sense of objectivity or reality
4. Blessedness, peace, etc.
5. Feeling of the holy, sacred, or divine
6. Paradoxicality
7. Alleged by mystics to be ineffable
8. Non-spatial, non-temporal (introvertive only)

- Zaehner (1961 [1957], p. 93ff)

1. Transcendence of Space (thus Unity)
2. Transcendence of Time (thus Unity)
3. Contraction into The One (Being not Becoming)
– Peaceful, Joyful
– Beyond Good and Evil
4. The Love of God (Beyond The One)
A. Zaehner also distinguished Nature Mysticism, Soul Mysticism, and Theistic Mysticism.

Stace's criteria—*via* Pahnke, Richards, Hood, et al.—were those that informed the most common mystical experience questionnaires, viz. the Mystical Experience Questionnaire (MEQ) (Pahnke, 1963), and the Hood Mysticism Scale (the "M-Scale": Hood, 1975) that are today used in psychedelic trials (also in use are the Hallucinogen Rating Scale, and that of the Five Dimensions Altered State of Consciousness—see Herrmann et al., 2022 for a recent overview of all scales used in psychedelic research). Data derived in this manner is obviously limited and abstract not only because psychedelic experience need not be "mystical," but also because the definition of "mystical" could be expanded to include other criteria observed above (e.g., transcending good and evil), and even these are non-exhaustive. With regard to psychedelic-assisted psychotherapy, as we shall see, speaking about mystical experience *per se* will not be sufficient to provide a meaningful explanation of the significance of such experience to a person, for the simple reason that mystical experience is the phenomenon to be explained—*mystical experience is the explanandum rather than the explanation.* It is metaphysics that is the means of explanation, the *explanans* of the mystical *explanandum*.

One can distinguish an explanation of a psychedelic experience within therapy from an academic explanation. With regard to the latter, it should be noted that simply reducing mystical experience to neural correlates is *not a sufficient explanation* because the so-called neural correlates of consciousness (Koch et al., 2016) *present rather than solve* the mind-matter problem. As philosopher of mind Jaegwon Kim (2005, p. 13) makes clear, following James, "Making a running list of psychoneural correlations does not come anywhere near gaining an explanatory insight into why there are such correlations." Thus, when Carhart-Harris et al. (2018, p. 549) claim "Our work on the neural correlates of 'ego-dissolution' may be considered part of a progressive initiative to demystify the psychedelic experience … a candidate neural correlate of the unitive experience," they are only mystifying themselves. Though neural correlates are *part of* an explanation of such experience, they cannot be a *sufficient* explanation, because the relation between the phenomenology and the physiology is left unexplained. Again, the mind-matter problem keeps the metaphysical options open. Making aware the question of this basic openness would itself be part of the proposed Metaphysics Integration phase, outlined below.

We can now see the difference between metaphysics and mysticism; the two should not be conflated despite certain similarities (see Figure 2). Metaphysics is more comprehensive than mysticism, and as such provides secular frameworks *in which* to understand the significance of "mystical experiences." But metaphysics also provides frameworks for other forms of exceptional experience that are often excluded from mystical criteria. The Penzance-born "chemical philosopher" Humphry Davy, for instance, after inhaling 200 pints of nitrous oxide exclaimed a revelation of Idealism ("Nothing exists but thoughts!"—Davy, 1800, p. 490). In the following section we shall look at psychedelic-induced metaphysical experiences, matching them to the Metaphysics Matrix, in order to show how the Matrix can be used. Metaphysics is an ongoing, active discipline that can be fruitful to the emerging field of psychedelic studies, in terms of therapy as well as individual and cultural enrichment. In what follows, we shall also observe how metaphysics may be applied specifically to the integrative phase of psychedelic-assisted psychotherapy

15 "One of the most convincing aspects of the mystic illumination is the apparent revelation of the oneness of all things, giving rise to pantheism in religion and to monism in philosophy" (Russell, 1951 [1914], p. 18).

16 Because Otto defines this experience in terms not of unity but in terms of "The Wholly Other," some commentators have sought to distinguish such experience as "numinous" in contrast to "mystical" (see Spilka et al., 2003, p. 292).

so to potentially increase long-term mental health benefits to participants.

Psychedelic-induced metaphysical experiences

Humphry Osmond coined and defined "psychedelic" as "mind-manifesting" (1957, p. 429), not "brain-manifesting," and thus the term "psychedelic" should be determined by drug-induced ("agents") *phenomenology* rather than physiology. Moreover, Osmond was explicitly against defining the term by purely neuropharmacological determinants (ibid., p. 428)[17] so we cannot restrict "psychedelics" to agents that that act primarily on the serotonin receptors. Osmond included nitrous oxide in his paper, in reference to William James, and it would be implausible to exclude the potent *Salvia divinorum* from the categorisation of psychedelics.

There is thus a long range of chemicals that may be classified as psychedelics (see Shulgin and Shulgin, 2019 [1991], 2020 [1997]), and an even longer range of experiences that may be classified as psychedelic experiences. Even a single type of chemical can elicit a seemingly infinite variety of experiences, though psychedelic typologies have been attempted (Lewin, 1998 [1924]; Masters and Houston, 2000 [1966]; Grof, 2009 [1975]; Shanon, 2010 [2002]). It is, consequently, manifest that not all psychedelic experiences are either metaphysical or mystical. Even the popular writer on psychedelics, mysticism, and Eastern thought, Alan Watts, wrote that: "my first experiment with LSD-25 was not mystical. It was an intensely interesting aesthetic and intellectual experience" (Watts, 2013, p. 98). Psychedelic experience can elicit laughter, unusual or intensified bodily feelings, they can be used to sharpen the senses and endow a person with enhanced aptitude for courage and stamina (MacCreagh, 2016), for hunting or fighting, or they can be used with the intention of cursing or healing others through sorcery or *via* the invocation of beings—as documented by Yanomami shaman, Davi Kopenawa (Kopenawa and Albert, 2013, p. 113–151). Likewise, there are aspects of mystical experience that bear little relation to metaphysics or psychedelics, especially those experiences tied to certain religious doctrines or denominations, such as the Christological visions of the counter-Reformationist Carmelites, such as St Teresa of Ávila (1515–1582) and St John of the Cross (1542–1591). And thirdly, there are aspects of intellectual and experiential metaphysics that bear little relation to psychedelic or mystical experience, such as the dry study of causation, identity, supervenience, etc. There is, however, an area of overlap of all three—all of which is illustrated in the Venn diagram that is Figure 3, the "PEMM Tristinction": Psychedelic Experience, Metaphysics, and Mysticism. For this paper, we are concerned with the space of overlap between psychedelic and metaphysical experience, which also, as illustrated, overlaps with some mystical experience.

It should be reiterated that many of the items listed in the mysticism scales and in the mystical experience criteria lists, both presented above, are items that are *assimilated within* the metaphysical positions outlined in the Metaphysics Matrix. For instance, the felt Union with reality (and its derivatives such as "nature-connectedness" [see Inge's "Nature Mysticism" (1938, p. 396); or the Watts Connectedness Scale (Watts et al., 2022)], can be assimilated and thus made meaningful within Neutral Monism, and relatedly to varieties of Panpsychism. Yet we must be cautious of generalizing: the word "union" can have various meanings—as Katz (1978) made clear: e.g., Jewish *devekuth* and Buddhist *nirvana* appear to be different experiences yet both terms can be translated or conflated with the single word "union" (Katz, 1978, p. 29ff; see also Jylkkä, 2022). Further still, "Neutral Monism" has a variety of meanings or variants. The specificity of every term must be fathomed by qualitative discussion between the experiencer and the integrator—this is the core component of the Metaphysics Integration, outlined below. The possibility of assimilating psychedelic-induced metaphysical experiences into metaphysical positions is possible by definition, i.e., not impossible.

Further still, the types of psychedelic-occasioned mystical experience that show most correlation to, mediation of, and prediction of, therapeutic effect are those experiences that are also classified as metaphysical experiences and thus are experiences that can be *further explored and understood* through Metaphysics Integration (mysticism by definition stays at the stage of mystery). For instance, Roseman et al. (2018) found experiencing "oceanic boundlessness" predicted a decrease in depressive symptoms. The very term, as we have seen, derives, *via* Freud and Rolland, to Spinoza's variety of Neutral Monism (Sjöstedt-Hughes, 2022). What better method of integrating such a metaphysical experience than through discussion of the very metaphysics that spawned its term? Certainly, I submit, integration of such experiences without any recourse to metaphysics would be inadequate—with the qualification that Metaphysics Integration *alone* is certainly inadequate as well. Developed and established psychotherapeutic (or logotherapeutic)[18] methods that counsel a participant are no doubt necessary elements of psychedelic integration. Hence the proposal that Metaphysics Integration be an *additional* part of psychedelic-assisted psychotherapy. It should also be *optional*, to offer agency to the patient, and because a patient may not have undergone a psychedelic-induced metaphysical experience. Another point of metaphysical significance is that if it is the phenomenology rather than the physiology that is primarily therapeutically effective here (contra Olson, 2020), therewith comes an implicit assertion of *mental causation*. Mental causation is problematic for a number of metaphysical positions (such as Dualism and Physicalism—see Kim, 2005), and is related to the long-running metaphysical controversy between Free Will, Determinism, and Fatalism (Lucas, 1970). But here is not the

17 "These are not escapes from but enlargements, burgeonings of reality. In so far as I can judge they occur in violation of Hughlings Jackson's principle, because the brain, although its functioning is impaired, acts more subtly and complexly than when it is normal. Yet surely, when poisoned, the brain's actions should be less complex, rather than more so?" (Osmond, 1957, p. 428) One might suspect the influence of Osmond's friend and associate Aldous Huxley (referenced in the 1957 paper) and his view that the brain is not productive but extractive of mind (Huxley, 2004 [1954/1956], p. 10).

18 A "psychedelic-assisted logotherapy" whereby finding or giving a meaning to one's life is key to therapy (based on Frankl, 1969 [1946]) but aided *via* psychedelic experience, could be a worthwhile endeavour.

place to explore the hitherto-unregistered yet potentially serious ramifications of this issue for psychedelic research and therapy.

To further outline how such an additional and optional Metaphysics Integration scheme may be run, let us give a few more examples of how psychedelic-induced metaphysical experiences can be assimilated within metaphysical positions, many of which overlap with one another. The discreteness of terms often masks the interrelation of realities.

In *The Antipodes of the Mind: Charting the Phenomenology of the Ayahuasca Experience*, Benny Shanon (2010 [2002], p. 163) writes that, "Overall, Ayahuasca induces a comprehensive metaphysical view of things," continuing to aver that the "experience forced ontology on me" (ibid., p. 165). But of which type? Shanon: "I would characterise it as idealistic monism with pantheistic overtones" (ibid., p. 163). As well as referencing Plato, Plotinus, and Hegel, Shanon makes reference to certain Hindu philosophies in this respect. Shanon also points out that cognitive psychology is inadequate to deal with such experience (ibid., p. 380). We can locate such an experience in the Metaphysics Matrix (second column, third row), and note that Pantheism (God is the Universe) is a rather commonly reported psychedelic-induced experience that encompasses and provides an explanatory framework for other experiences such as nature-connectedness, union, timelessness, ego-loss, etc. A classic exclamation of such an experience is given by Alan Watts as "peculiar states of consciousness in which the individual discovers himself to be one continuous process with God, with the Universe" Watts (1968 [1962], p. 74). Pantheism was coined by Joseph Raphson in 1697 in reference to Spinoza's metaphysical system (Spinoza, 1985/1988). Spinozism is more a Neutral (than Idealist) Monism (i.e., mind and matter are fundamentally identical because they are expressions of a more ultimate reality: God/Nature) and is one that can be used to discuss relevant psychedelic-induced experiences. Albert Hofmann sympathised and entertained such a view when he used as an epigraph for the final chapter of his book, *LSD: My Problem Child*, a line from Goethe referencing Spinoza: "What more can a person gain in life than that God-Nature reveals Himself to him?" (Hofmann, 2009 [1979], p. 197; see also Sjöstedt-Hughes, 2022 for a comparative analysis between Spinozan ontology and psychedelic, particularly 5-MeO-DMT, phenomenology). In his chapter, Hofmann is incidentally in alignment with the purpose of this paper when he writes that: "[A] type of 'metamedicine,' 'metapsychology,'… is beginning to call upon the metaphysical element in people … and to make this element a basic healing principle in therapeutic practice." (ibid., p. 206).

Pantheism is related to Panpsychism (that minds are ubiquitous in Nature), and we see such a view expressed throughout the psychedelic literature. The aforementioned Timmermann et al. (2021) study indicated a general metaphysical shift from Physicalism to Panpsychism *via* psychedelics, thereby also showing the commonality of the position in psychedelic experience. In 1957, Richard H. Ward described a panpsychological experience induced by 100 micrograms of LSD:

> "This insight into the hidden nature of things, which in itself swept away time and distance and left me with a new understanding the authenticity of which I could not doubt, was indescribably thrilling: this was really to know, really to feel, and to transcend the mean limitations of our ordinary ways of perceiving …. I realized that the whole universe is made-up of things which have their own natures, relationships, significances, and that in some universal scale each thing has its proper place and even its proper degree of awareness, whether we call it animate or inanimate." (Ward, 1957, p. 85–86)

A variant of Panpsychism is Animism, an essential stance of Amerindian cultures related to the use of psychedelic substances such as ayahuasca (see Shanon, 2010 [2002]; Kopenawa and Albert, 2013; Luna, 2020, p. 167f). The relation between Animism and Panpsychism is an interesting one to unravel, as is the fact that experiencing the seemingly inner life of things is an experience common to both Western and Amerindian cultures, and beyond (e.g., in Shintoism—see Yoneyama, 2017).

With regard to Substance Dualism (that the soul is separate from the body), the reports are manifold. Reports of psychedelic-induced past lives—metempsychosis (Grof, 2009 [1975])—imply a Substance Dualism as a soul must, by this doctrine, survive one body to enter the another. Reports of "astral projection" also entail such a dualism as the soul is supposed to leave the body (Foss, 1973). Moreover, the vast literature of reports on encountering sentient beings (Strassman, 2001; Gallimore, 2019; Michael et al., 2021) *generally* implies that those supposed sentiences—with their own subjective perspectives—have an existence without a physical subvenient base. This would in turn imply a type of substance dualism as the sentience is, as it were, free floating. Though Substance Dualism is not a currently popular viewpoint in philosophy or science today, it does have its forceful proponents (e.g., Popper and Eccles, 1985 [1977], p. 36–99; Feser, 2010, p. 19–48), and can be intelligently discussed without necessary reduction to mere religious faith or intuition alone. For certain Plotinian purists who confine "mysticism" with union—understood as such through a Monism—experiences of Dualism are ruled out as mystical *a priori*. Inge (1938, p. 404), for example, contends that "Metaphysical dualism is inconsistent with mystical philosophy." This issue is irrelevant to our purpose here because we are looking at metaphysical rather than purely mystical experiences with regard to integration. But it again reveals that psychedelic-assisted psychotherapy will gain more advantage by extending its scope beyond mysticism to metaphysics.

With regard to Idealism, we have seen its evocation *via* nitrous oxide for Humphry Davy. William James also arrived at Idealism *via* nitrous oxide, Idealism of the Hegelian variety. In the extensive endnote to his 1882 paper, "On Some Hegelisms," he writes:

> "I have made some observations on the effects of nitrous-oxide-gas-intoxication which have made me understand better than ever before both the strength and the weakness of Hegel's philosophy. … [The] keynote of the experience is the tremendously exciting sense of an *intense metaphysical illumination*. … [Its] first result was to make peal through me with unutterable power the conviction that Hegelism was true after all, and that the deepest convictions of my intellect hitherto were wrong. … [U]nbroken continuity is of the

> essence of being; and … we are literally in the midst of *an infinite*, to perceive the existence of which is the utmost we can attain." (James, 1882, p. 206)

We have looked briefly at how certain psychedelic-induced experiences can be framed and more adequately understood through certain metaphysical systems: Neutral Monism, Pantheism, Panpsychism, Animism, Substance Dualism, and Idealism. But it should be noted that many elements of the psychedelic experience are not as systematic, not as totalizing. There are many interesting non-systematic experiences that can also be meaningfully understood through metaphysics. I refer to experiences such as the contraction or protraction of timerate, or of the specious present; of timelessness ("the Eternal"); of lost memories (in relation to the ontological status of the past); of spacelessness or of a space of other than three dimensions; of the platitudinous "ego-loss" (assimilated within Neutral Monism, etc.); of nature-connectedness (related to Panpsychism, Pantheism, etc.); of other realms (in relation to Transcendent Realism, and to "Possible World" modal realities); to supreme aesthetic experiences; to the seeming diffusion and proliferation of the mind; to the amplification of the feelings and emotions; to the divine (following Aristotle's legacy, we consider non-denominational, natural theology as one part of metaphysics). All such experiences, and others, can be discussed using the discourse of metaphysics.

If certain such metaphysical experiences promote therapeutic benefits it would behove us to endeavour to accentuate through exploration these experiences in the integrative phase of psychedelic-assisted psychotherapy (and perhaps, in time, beyond that).

Psychedelic-assisted psychotherapy

Gorman et al. (2021) have defined psychedelic-assisted psychotherapy thus: "the administration of a psychedelic in the context of a psychotherapeutic environment and relationship, with the therapist providing psychological support and in some cases specific intervention designed to align with the psychedelic experience and promote change in the target diagnosis" (p. 3). It is, and has been, used to attempt to treat diagnoses of posttraumatic stress disorder, depression (major depressive disorder, treatment-resistant depression), addiction, pain, anxiety, obsessive compulsive disorder, schizophrenia, end-of-life care (thanatophobia, etc.), and other afflictions deemed harmful (ibid.; Grof, 2008 [1980]; Morgan et al., 2017; Garcia-Romeu and Richards, 2018).

The therapeutic use of psychedelics appears to have a long history in ancient and indigenous cultures (Osmond, 1957, p. 419; Schultes et al., 1998 [1979]; Escohotado, 1999 [1996]; Rinella, 2012). In the clinical sphere of the West, therapeutic use of psychedelics, at first LSD—synthesised in 1938; taken first by Albert Hofmann in 1943 (Hofmann, 2009 [1979])—began in the early 1950s (Grof, 2008 [1980], p. 26; Garcia-Romeu and Richards, 2018, p. 292). From the 1950s to the start of the 1970s (when prohibition of such substances was implemented by the UN), there were two general tendencies of psychedelic-assisted psychotherapy. Firstly, there was European "psycholytic therapy" that was heavily based on psychoanalysis, i.e., Freudianism, that used small doses to *facilitate* the already-established psychoanalytic therapy (Passie, 1997; Majić et al., 2015, p. 245–246). Secondly, concurrently, in North America was practiced "psychedelic therapy" which, in contradistinction, used few but high doses of psychedelics (Grof, 2008 [1980], p. 21–47; Garcia-Romeu and Richards, 2018, p. 294). There were many other varieties of psychedelic-assisted therapy during these decades (ibid.), but these were the main strands. In addition to this therapeutic dichotomy, there is another: (i) psychedelic experience can assist psychotherapy, or (ii) psychotherapy can assist psychedelic experience and its effects. As psychiatrist Stanislav Grof—who conducted more than 4,000 psychedelic sessions (Grof, 2008 [1980], p. 13)—puts it:

> "The first category involves approaches in which the emphasis is on systematic psychotherapeutic work; LSD is used to enhance the therapeutic process or to overcome resistances, blocks, and periods of stagnation. The approaches in the second category are characterized by a much greater emphasis on the specific aspects of the drug experience and the psychotherapy is used to prepare the subjects for the drug sessions, give them support during the experiences, and to help them integrate the material." (Grof, 2008 [1980], p. 33)

After a couple of decades following prohibition, licences were granted to a few researchers, the most known of which is Rick Strassman's work on DMT between 1990 and 1995 (Strassman, 2001). Along with some others, this research was carried out *not* primarily for therapy but for understanding biological process correlated to the mind using "healthy normal volunteers" (Garcia-Romeu and Richards, 2018, p. 294). As the 21st century arrived, psychedelic research returned its gaze again to therapy.

The purpose of this text is primarily to enrich therapy. However, the Metaphysics Integration proposed below can also be implemented for those with no desire for therapy but rather for enrichment of life. Let us look at the current state of integration in psychedelic-assisted psychotherapy so to provide context and reasons for its development.

Integration is the third, final phase of psychedelic-assisted psychotherapy. The first is the preparatory phase where a rapport—or "therapeutic alliance" (Garcia-Romeu and Richards, 2018, p. 300)—is developed between the participant and the therapists [often two, of different sexes (ibid., p. 298)]. The second phase is the drug session itself, again supervised by the same therapists. The final phase, integration, "typically begins 1–2 days after the drug session in a follow-up meeting between patient and therapist(s) to discuss the patient's experience and reflect upon its content in more depth" (ibid., p. 299–300; see also Krupitsky and Grinenko, 1997, p. 167; Grof, 2008 [1980], p. 147–149). These integrative meetings can occur weekly, sometimes for a number of months—practices vary. Can we ask what precisely "integration" is here?

There is no precision to be found here. It is a practice in its infancy. A recent overview of psychedelic integration (Bathje et al., 2022) begins by acknowledging that there are "many definitions of psychedelic integration, and the term encompasses a range of practices and techniques. This seems to have led to confusion about what integration is" (ibid., p. 1). Nonetheless, the authors submit what they consider to be a synthesised definition. I quote

all but the last clause of the definition (as it is metaphysically presumptuous)[19]:

> "Integration is a process in which a person revisits and actively engages in making sense of, working through, translating, and processing the content of their psychedelic experience. Through intentional effort and supportive practices, this process allows one to gradually capture and incorporate the emergent lessons and insights into their lives..." (ibid., p. 4)

Bathje et al. go on to identify ten models of integration (ibid., p. 5–7), "based on Indigenous worldviews and practices, Transpersonal Psychology, Jungian Psychology, Acceptance and Commitment Therapy, Psychodynamic Psychology, Somatic Psychology, Nature Relatedness, Biopsychosocialspiritual Models, and Harm Reduction" (ibid., p. 5). We have not the scope to explore each model here, but note that none of them involve recourse to metaphysics, through which mystical experience can attain meaning.

What is distinctive about psychedelic-assisted psychotherapy is the prefix. As psychedelics can occasion metaphysical experiences, some of which appear to bestow the most therapeutic benefit (see below), it seems that an integrative approach that omits metaphysics as one *element* of a broader integrative phase will be an inadequate form of psychedelic-assisted psychotherapy. We have seen Hofmann (2009 [1979], p. 206) and Shanon (2010 [2002], p. 380) make this point, but Bathje et al. make it more explicitly:

> "[T]hese models may not provide a broad enough framework for practitioners or journeyers [participants] to respond to this full range of psychedelic experiences. … We believe integration will be most complete when expanding to address the full range of experiences people have with psychedelic substances. … In attempting to work holistically, those assisting journeyers with integration will need the humility to recognise the limitations of their training and knowledge, and limitations of their cultural conditioning and worldview. A skilled range of collaborators and referral sources are likely to be valuable in facilitating the integration process." (Bathje et al., 2022, p. 11).

Concurrent to the integration phase, there is some evidence of a phenomenon that follows certain psychedelic experiences, named the "afterglow" (Majić et al., 2015; Sampedro et al., 2017; Gorman et al., 2021, p. 11). In this period of a few weeks, one finds in the participant "heightened mood, psychological flexibility, openness" which "may enable patients to explore new behaviours and ways of thinking" (Gorman et al., 2021, p. 11). Such an afterglow phase running parallel to the integration phase would naturally be conducive to the intelligible presentation and integration of various metaphysical positions potentially relevant to a participant who had a corresponding metaphysical experience.

Of more therapeutic effect than the afterglow phase is the *type* of experience that the participant undergoes. As Ko et al. (2022, p. 10) conclude in their overview: "[The] presence and intensity of the mystical psychedelic experience contributes to therapeutic efficacy, to include both symptom reduction and improved quality of life. This was clearly indicated in the studies reviewed, in forms of correlation, prediction, and/or mediation." (see also especially Roseman et al., 2018; Mollaahmetoglu et al., 2021; Rothberg et al., 2021; Yaden and Griffiths, 2021; McCulloch et al., 2022). It is "mystical psychedelic experience" that has been shown to have the greatest therapeutic effects in psychedelic trials. The meaning of "mystical psychedelic experience" is always, as the term suggests, a little mysterious. Ko et al., refer to items on (the aforementioned) questionnaires that refer back especially to Stace's (1960) criteria, outlined above [in turn based on James' (1902) criteria and thought]. Walter Pahnke was the first to develop Stace's criteria into a questionnaire (the MEQ) and a study which involved questions relating to the following factors that comprise mystical states (using Pahnke's own words): Transcendence of Time and Space (loss of usual sense of time or of space), Positive Mood (joy, love, peace, or blessedness), Sense of Sacredness, Unity (Internal and External), Transiency of Unity, Objectivity, or Reality (insights into being and existence in general), Paradoxicality, and Alleged Ineffability (Pahnke, 1963, p. 283–296). Ralph Hood's M-Scale (1975) is also based on Stace, 1960, and therefore rather similar to Pahnke's scale (though it omits paradoxicality). Of these factors, all but ineffability are part of experiential metaphysics (ineffability is not really an experience, but rather an expression of the inability to report an experience). Time and space are core phenomena studied in Metaphysics that especially relate to the positions of Idealism, Neutral Monism, and the Transcendent. The transcendental idealist Immanuel Kant, for instance, argued that time and space were not real but merely projections of our mind (Kant, 2000 [1781/7], p. 155–192, A19/B33–A49/B73). The feeling of the unity of one's mind into the mind of Nature, along with joy and blessedness, finds a place of comprehension in Spinoza's Neutral Monism and Pantheism, through the concept of "the intellectual love of God/Nature" (Spinoza, 1985/1988, p. 609–617, *Ethics*, VP25–P42). Unity in terms of nature-connectedness or -exaltation can be framed within the panpsychological metaphysics of thinkers such as Alfred North Whitehead (e.g., Whitehead, 1958 [1938]; Gibson, 2020; Buchanan, 2022; Segall, 2022). The notion of "Objectivity or Reality" (related to the "noetic quality" of James, 1977 [1902]) refers to an intuition that the alternate reality one experiences is veridical rather than delusional (Pahnke, 1963, p. 290–291), which relates, for instance, to metaphysics vis-à-vis "possible worlds" (Lewis, 1986). Moreover, Pahnke's definition of "Objectivity or Reality" as "insights into being or existence in general" (ibid.) takes us back to Aristotle's original remit of metaphysics: the exploration of being *qua* being. We have seen further examples above of psychedelic-induced metaphysical experiences. For our purposes, what is important is that such experiences

19 The final clause reads, "... thus moving toward greater balance and wholeness, both internally (mind, body, and spirit) and externally (lifestyle, social relations, and the natural world)." (ibid.) The problem here is that there is a metaphysical presumption of a differentiation of "mind, body, and spirit," as well as other implicit assumptions regarding nature, etc. It is such questions that psychedelic experience elicits; thus, it should not be imposed from the start thereby restricting avenues of thought.

are regarded as therapeutically most effective, and that they are "mystical" experiences that can be more broadly reclassified as *metaphysical* experiences (see Figure 3). This reclassification assimilates them into a discipline that can foster a more meaningful and significant relationship between participants and their experiences.[20]

Conclusion: The proposal and conjecture

Let us now bring together all that has been said to make the case for Metaphysics Integration as a part of psychedelic-assisted psychotherapy.

1. The psychedelic experiences which appear to have most (but not exclusive) therapeutic efficacy are metaphysical experiences. (Roseman et al., 2018; Mollaahmetoglu et al., 2021; Rothberg et al., 2021; Yaden and Griffiths, 2021; Ko et al., 2022; McCulloch et al., 2022).
2. There is evidence of an afterglow period after such experiences in which participants are open to new ideas about themselves and reality (Majić et al., 2015; Sampedro et al., 2017; Gorman et al., 2021, p. 11).
3. This afterglow period is concurrent to the Integration phase of psychedelic-assisted psychotherapy.
4. Psychedelic-assisted psychotherapy has been the province of psychologists, psychiatrists, and other counsellors who, as such, have not been trained in metaphysics.
5. Introducing an additional and optional Metaphysics Integration element into Psychedelic-assisted psychotherapy can be a more effective means of integrating metaphysical experience into a participant's sense of themselves and the reality in which they exist.
6. It is *conjectured* that this proposal, of Metaphysics Integration for psychedelic-induced metaphysical experiences, will produce *longer-term benefits* to participants. This is because (i) the experience can be more comprehensively framed, (ii) there will be less reason to dismiss the experience as delusional once a participant realises that each metaphysical position has an established legacy of discourse, (iii) relatedly, that the worldview hitherto adopted by the participant is but one metaphysical position amongst others, and (iv) that Metaphysics Integration *amplifies* the significance of the psychedelic experience that is regarded (point 1) as having the most therapeutic efficacy.

This is the proposal and the conjecture. There are many issues and questions that stem therefrom, as well as a number of potential projects and studies. One of the immediate issues is practical: how might Metaphysics Integration be implemented? This is an issue for another paper that considers how the complexity of metaphysics could be made intelligible to participants and practitioners through resources such as a handbook or practitioner training. The Metaphysics Matrix and its accompanying MMQ, provided here, can be used as the basis of such resources—and they show the possibility of simplification for intelligibility and practical use. Furthermore, we have seen throughout this text how certain psychedelic experiences can be discussed and made meaningful in terms of metaphysical positions. In practice this would need to be further bridged by the therapist to the participant's life, concerns, values, aims, and outlook. Since the 1950s there have been many varieties of psychedelic therapy, and there is no reason why Metaphysics Integration should not be an augmentation of such therapies currently in development. In fact, as I have sought to show, Metaphysics Integration may offer an advance in psychedelic-assisted psychotherapy—because integrating metaphysical experience requires recourse to metaphysics.

20 The sense of a grander scheme of reality that may emerge from psychedelic-induced metaphysical experiences may make participants' everyday problems appear in a new light of *relative insignificance*, thereby lessening the problems' emotional impact, and in turn lessening their need to be masked by alcohol abuse, etc. To speculate, this may be one reason for the therapeutic efficacy of such metaphysical experiences.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

Adorno, T. W. (2001 [1965]). *Metaphysics: Concept and Problems*. Stanford, CA: Stanford University Press.

Aristotle (2004). *The Metaphysics*. Transl. by H. Lawson-Trancred. London: Penguin.

Aristotle (2008). *Physics*. Transl. by R. Waterfield. Oxford: Oxford University Press.

Ayer, A. J. (1934). Demonstration of the impossibility of metaphysics. *Mind* 43, 335–345. doi: 10.1093/mind/XLIII.171.335

Ayer, A. J. (1987 [1982]). *Philosophy in the Twentieth Century*. London: Unwin Hyman Ltd.

Ayer, A. J. (1990). *The Meaning of Life and Other Essays*. London: Weidenfeld and Nicolson.

Baier, K. (2017). "High mysticism: on the interplay between the psychedelic movement and academic study of mysticism," in *Constructions of Mysticism as a Universal: Roots and Interactions Across Borders*, eds A. Wilke, R. Stephanus, and R. Suckro (Wiesbaden: Harrassowitz), 363–396.

Bathje, G. J., Majeski, E., and Kudowor, M. (2022) Psychedelic integration: An analysis of the concept and its practice. *Front. Psychol.* 13, 824077. doi: 10.3389/fpsyg.2022.824077

Beaney, M. (2018). Editorial: 25 years of the british journal for the history of philosophy. *Br. J. Hist. Philos.* 26, 1–10. doi: 10.1080/09608788.2018.1423735

Beards, A. (2008). *Method in Metaphysics: Lonergan and the Future of Analytical Philosophy*. Toronto, ON: University of Toronto Press.

Bergson, H. (1935). *The Two Sources of Morality and Religion*. Transl.by R. Ashley Audra, and C. Brereton. London: Macmillan.

Blood, B. P. (2020 [1874]). *The Anaesthetic Revelation and the Gist of Philosophy*. New Delhi: Isha Books.

Bossart, W. (1961). Metaphysical experience. *Rev. Metaphy.* 15, 34–50.

Buchanan, J. H. (2022). "What is real(ity)?" in *Philosophy and Psychedelics: Frameworks for Exceptional Experience*, eds C. Hauskeller, and P. Sjöstedt-Hughes (London: Bloomsbury Academic), 31–44. doi: 10.5040/9781350231641.ch-002

Bucke, R. M. (1947 [1901]). *Cosmic Consciousness: A Study in the Evolution of the Human Mind*. New York, NY: E. P. Dutton and co.

Bullett, G. (1950). *The English Mystics*. London: Michael Joseph.

Carhart-Harris, R. L., Erritzøe, D., Haijen, E., Kaelen, M., and Watts, R. (2018). Psychedelics and connectedness. *Psychopharmacology* 235, 547–550. doi: 10.1007/s00213-017-4701-y

Carmody, D. L., and Carmody, J. T. (1996). *Mysticism: Holiness East and West*. Oxford: Oxford University Press.

Carpenter, E. (1892). *From Adam's Peak to Elephanta: Sketches in Ceylon and India*. London: Swan Sonnenschein and Co.

Carr, B. (1987). *Metaphysics: An Introduction*. London: Macmillan. doi: 10.1007/978-1-349-18852-9

Chalmers, D. J. (1995). Facing up to the problem of consciousness. *J. Conscious. Stud.* 2, 200–219.

Collingwood, R. G. (1940). *An Essay on Metaphysics*. Oxford: Clarendon Press.

Collingwood, R. G. (1945). *The Idea of Nature*. Oxford: Clarendon Press.

Davy, H. (1800). *Researches, Chemical and Philosophical; Chiefly Concerning Nitrous Oxide or Dephlogisticated Nitrous Air, and Its Respiration*. London: Butterworths.

Deleuze, G. (1988 [1970]). *Spinoza: Practical Philosophy*. Transl. by R. Hurley. San Francisco, CA: City Light Books.

Dickins, R. (2022). "Power and the sublime in huxley's drug aesthetics," in *Philosophy and Psychedelics: Frameworks for Exceptional Experience*, eds C. Hauskeller, and P. Sjöstedt-Hughes (London: Bloomsbury Academic), 61–75. doi: 10.5040/9781350231641.ch-004

Escohotado, A. (1999 [1996]). *A Brief History of Drugs: From the Stone Age to the Stoned Age*. Rochester, NY: Park Street Press.

Feser, E. (2010 [2005]). *Philosophy of Mind*. Oxford: One World.

Foss, L. (1973). Does juan really fly? *Philos. Sci.* 40, 298–316. doi: 10.1086/288527

Frankl, V. E. (1969 [1946]). *The Doctor and the Soul: From Psychotherapy to Logotherapy*, 2nd ed. Transl. by A. A. Knopf. London: Penguin.

Freud, S. (2002 [1930]). *Civilization and Its Discontents*. Transl. by D. McLintock. London: Penguin.

Gallimore, A. (2019). *Alien Information Theory: Psychedelic Drug Technologies and the Cosmic Game*. London: Strange Worlds Press.

Ganeri, J. (2022). Cosmic consciousness. *Monist* 105, 43–57. doi: 10.1093/monist/onab022

Garcia-Romeu, A., and Richards, W. A. (2018). Current perspectives on psychedelic therapy: use of serotonergic hallucinogens in clinical interventions. *Int. Rev. Psychiatry* 30, 291–316. doi: 10.1080/09540261.2018.1486289

Gertz, S. (2022). "Plotinus, gnosticism, and christianity," in *The New Cambridge Companion to Plotinus*, eds L. P. Gerson, and J. Wilberding (Cambridge: Cambridge University Press), 41–64. doi: 10.1017/9781108770255.003

Gibson, L. (2020). "Amplified subject," in *Rethinking Consciousness: Extraordinary Challenges for Contemporary Science*, eds J. H. Buchanan, and C. M. Aanstoos (Anoka, MN: Process Century Press), 131–148.

Gorman, I., Nielson, E. M., Molinar, A., Cassidy, K., and Sabbagh, J. (2021). Psychedelic harm reduction and integration: A transtheoretical model for clinical practice. *Front. Psychol.* 12, 645246. doi: 10.3389/fpsyg.2021.645246

Grof, S. (2008 [1980]). *LSD Psychotherapy*, 4th ed. Santa Cruz, CA: MAPS.

Grof, S. (2009 [1975]). *LSD: Doorway to the Numinous*. Rochester, NY: Park Street Press.

Hampshire, S. (1951). *Spinoza*. London: Penguin.

Hauskeller, C., and Sjöstedt-Hughes, P., eds. (2022). *Philosophy and Psychedelics: Frameworks for Exceptional Experience*. London: Bloomsbury Academic. doi: 10.5040/9781350231641

Heil, J. (2021). *What is Metaphysics?* Cambridge: Polity Press. doi: 10.1093/oso/9780198865452.003.0001

Heisenberg, W. (2000 [1958]). *Physics and Philosophy*. London: Penguin.

Herrmann, Z., Earleywine, M., De Leo, J., Slabaugh, S., Kenny, T., and Rush, J. (2022). Scoping review of experiential measures from psychedelic research and clinical trials. *J. Psych. Drugs* 3, 1–17. doi: 10.1080/02791072.2022.2125467

Hofmann, A. (2009 [1979]). *LSD: My Problem Child*. Transl. by J. Ott. Santa Cruz, CA: MAPS.

Hood, R. W. (1975). The construction and preliminary validation of a measure of reported mystical experience. *J. Sci. Study Relig.* 14, 29–41. doi: 10.2307/1384454

Huxley, A. (2004 [1954/1956]). *The Doors of Perception and Heaven and Hell*. London: Vintage Books.

Inge, W. R. (1938). The philosophy of mysticism. *Philosophy* 13, 387–405. doi: 10.1017/S0031819100014182

James, W. (1882). On some hegelisms. *Mind* 7, 186–208. doi: 10.1093/mind/os-VII.26.186

James, W. (1909). *A Pluralistic Universe*. New York, NY: Longmans, Green, and Co.

James, W. (1910). A suggestion about mysticism. *J. Philos. Psychol. Sci. Methods* 7, 85–92. doi: 10.2307/2011271

James, W. (1977 [1902]). *The Varieties of Religious Experience*. Glasgow: Collins, Fount.

Jylkkä, J. (2022). "Mary on acid: experiences of unity and the epistemic gap," in *Philosophy and Psychedelics: Frameworks for Exceptional Experience*, eds C. Hauskeller, and P. Sjöstedt-Hughes (London: Bloomsbury Academic), 153–168. doi: 10.5040/9781350231641.ch-009

Kant, I. (2000 [1781/7]). *Critique of Pure Reason*. Transl. by P. Guyer and A. W. Wood. Cambridge: Cambridge University Press.

Katz, S. T. (1978). "Language, epistemology, and mysticism," in *Mysticism and Philosophical Analysis*, ed S. T. Katz (London: Sheldon Press), 22–74.

Katz, S. T. (ed) (1983). The 'conservative' character of mystical experience, in *Mysticism and Religious Traditions* (Oxford: Oxford University Press). p. 22–74.

Kerényi, K. (1967). *Eleusis: Archtypal Image of Mother and Daughter*. Princeton, NJ: Princeton University Press. doi: 10.1515/9780691213859

Kim, J. (ed) (2005). "Mental causation and consciousness: our two mind–body problems," in: *Physicalism, or Something Near Enough* (Princeton: Princeton University Press), 1–31.

Kim, J., and Sosa, E., eds. (1999). *Metaphysics: An Anthology*. Oxford: Blackwell.

Ko, K., Knight, G., Rucker, J. J., and Cleare, A. J. (2022). Psychedelics, mystical experience, and therapeutic efficacy: a systematic review. *Front. Psychiatry* 13, 917199. doi: 10.3389/fpsyt.2022.917199

Koch, C., Massimini, M., Boly, M., and Tononi, G. (2016). Neural correlates of consciousness: progress and problems. *Nat. Rev. Neurosci.* 17, 307–322. doi: 10.1038/nrn.2016.22

Kopenawa, D., and Albert, B. (2013 [2010]). *The Falling Sky: Words of a Yanomami Shaman*. Transl. by N. Elliott and A. Dundy. Cambridge, MA: Harvard University Press. doi: 10.2307/j.ctt6wppk9

Krupitsky, E. M., and Grinenko, A. Y. (1997). Ketamine psychedelic therapy (KPT): a review of the results of ten years of research. *J. Psych. Drugs* 29, 165–183. doi: 10.1080/02791072.1997.10400185

Langlitz, N. (2013 [2012]). *Neuropsychedelia: The Revival of Hallucinogen Research Since the Decade of the Brain*. Berkeley, CA: University of California Press. doi: 10.1525/9780520954908

Leibniz, G. W. (1991 [1686, 1714]). *Discourse on Metaphysics and Other Essays*. Transl. by D. Garber and R. Ariew. Indianapolis, IN: Hackett.

Lenson, D. (1995). *On Drugs*. Minneapolis, MN: University of Minnesota Press.

Letheby, C. (2021). *Philosophy of Psychedelics*. Oxford: Oxford University Press. doi: 10.1093/med/9780198843122.001.0001

Leuba, J. H. (1925). *The Psychology of Religious Mysticism*. London: Kegan Paul.

Lewin, L. (1998 [1924]). *Phantastica.* Rochester, NY: Park Street Press.

Lewis, D. K. (1986). *On the Plurality of Worlds*. Oxford: Blackwell.

Lowe, E. J. (2002). *A Survey of Metaphysics*. Oxford: Oxford University Press.

Lucas, J. R. (1970). *The Freedom of the Will*. Oxford: Oxford University Press.

Luna, L. E. (2020). Amerindian Animism, Sacred Plants and the Anthropocene. *ICEERS Lecture*. Available online at: https://youtu.be/KK3RNrl_NI0 (accessed December 10, 2022).

Lundborg, P. (2014). Note towards the definition of a psychedelic philosophy. *Fenris Wolf* 7, 77–92.

MacCreagh, G. (2016). "The drug that makes men brave," in *Ayahuasca Reader: Encounters with the Amazon's Sacred Vine*, eds L. E. Luna, and S. F. White (Santa Fe, NM: Synergetic Press), 145–151.

Majić, T., Schmidt, T. T., and Gallinat, J. (2015). Peak experiences and the afterglow phenomenon: when and how do therapeutic effects of hallucinogens depend on psychedelic experiences? *J. Psychopharmacol.* 29, 241–253. doi: 10.1177/0269881114568040

Marmodoro, A., and Mayr, E. (2019). *Metaphysics: An Introduction to Contemporary Debates and Their History*. Oxford: Oxford University Press.

Masters, R., and Houston, J. (2000 [1966]). *The Varieties of Psychedelic Experience*. Rochester, NY: Park Street Press.

McCulloch, D. E., Grzywacz, M. Z., Madsen, M. K., Jensen, P. S., Ozenne, B., Armand, S., et al. (2022). Psilocybin-induced mystical-type experiences are related to persisting positive effects: a quantitative and qualitative report. *Front. Pharmacol.* 13, 841648. doi: 10.3389/fphar.2022.841648

Michael, P., Luke, D., and Robinson, O. (2021). An encounter with the other: a thematic and content analysis of DMT experiences from a naturalistic field study. *Front. Psychol.* 12, 720717. doi: 10.3389/fpsyg.2021.720717

Mollaahmetoglu, O. M., Keeler, J., Ashbullby, K. J., Ketzitzidou-Argyri, E., Grabski, M., and Morgan, C. J. A. (2021). "This is something that changed my life": a qualitative study of patients' experiences in a clinical trial of ketamine treatment for alcohol use disorders. *Front. Psychiatry* 12, 695335. doi: 10.3389/fpsyt.2021.695335

Morgan, C., McAndrew, A., Stevens, T., Nutt, D., and Lawn, W. (2017). Tripping up addiction: the use of psychedelic drugs in the treatment of problematic drug and alcohol use. *Curr. Opin. Behav. Sci.* 13, 71–76. doi: 10.1016/j.cobeha.2016.10.009

O'Brien, E. (ed) (1964). *The Essential Plotinus*. Indianapolis, IN: Hackett.

Odin, S. (2022). "The unconscious in zen and psychedelic experience: a response to D. T. Suzuki's Zen critique of drug-induced satori," in *Philosophy and Psychedelics: Frameworks for Exceptional Experience*, eds C. Hauskeller, and P. Sjöstedt-Hughes (London: Bloomsbury Academic), 179–193. doi: 10.5040/9781350231641.ch-011

Olson, D. E. (2020). The subjective effects of psychedelics may not be necessary for their enduring therapeutic effects. *ACS Pharmacol. Transl. Sci.* 4, 563–567. doi: 10.1021/acsptsci.0c00192

Osmond, H. (1957). A review of the clinical effects of psychotomimetic agents. *Ann. New York Acad. Sci.* 66, 418–434. doi: 10.1111/j.1749-6632.1957.tb40738.x

Otto, R. (1926 [1917]). *The Idea of the Holy: An Inquiry into the Non-Rational Factor in the Idea of the Divine and Its Relation to the Rational*. Transl. by J. W. Harvey. Oxford: Oxford University Press.

Oxford Classical Dictionary, 'Mysteries, Elusinian'. doi: 10.1093/acrefore/9780199381135.013.8127 Available online at: https://oxfordre.com/classics/display/10.1093/acrefore/9780199381135.001.0001/acrefore-9780199381135-e-8127 (accessed December 10, 2022).

Pahnke, W. N. (1963). *Drugs and Mysticism: An Analysis of the Relationship Between Psychedelic Drugs and the Mystical Consciousness*. Cambridge, MA: Harvard University Press.

Passie, T. (1997). *Psycholytic and Psychedelic Research 1931–1995: A Complete International Bibliography*. Hannover: Laurentius.

Petek, J. (2022). *Unearthing the Unknown Whitehead*. Lanham, MD: Lexington Books.

Plato (2002). Five *Dialogues: Euthyphro, Apology, Crito, Meno, Phaedo*, 2nd ed. Transl. by G. M. A. Grube. Indianapolis, IN: Hackett.

Pollan, M. (2015). The trip treatment. *The New Yorker*, February 9. Available online at: https://www.newyorker.com/magazine/2015/02/09/trip-treatment (accessed December 10, 2022).

Popper, K., and Eccles, J. (1985 [1977]). *The Self and its Brain*. New York, NY: Springer.

Rinella, M. A. (2012). *Pharmakon: Plato, Drug Culture, and Identity in Ancient Athens*. Lanham, MD: Lexington Books.

Robbins, P. (1982). *The British Hegelians: 1875–1925*. New York, NY: Garland Publishing.

Roseman, L., Nutt, D. J., and Carhart-Harris, R. L. (2018). Quality of acute psychedelic experience predicts therapeutic efficacy of psilocybin for treatment-resistant depression. *Front. Pharmacol.* 8, 974. doi: 10.3389/fphar.2017.00974

Rothberg, R. L., Azhari, N., Haug, N. A., and Dakwar, E. (2021). Mystical-type experiences occasioned by ketamine mediate its impact on at-risk drinking: results from a randomized, controlled trial. *J. Psychopharmacol.* 35, 150–158. doi: 10.1177/0269881120970879

Russell, B. (1951 [1914]). *Mysticism and Logic and Other Essays*. London: George Allen and Unwin.

Sampedro, F., de la Fuente Revenga, M., Valle, M., Roberto, N., Domínguez-Clavé, E., Elices, M., et al. (2017). Assessing the psychedelic "after-glow" in ayahuasca users: post-acute neurometabolic and functional connectivity changes are associated with enhanced mindfulness capacities. *Int. J. Neuropsychopharmacol.* 20, 698–711. doi: 10.1093/ijnp/pyx036

Sanders, J. W., and Zijlmans, J. (2021). Moving past mysticism in psychedelic science. *ACS Pharm. Trans. Sci.* 4, 1253–1255. doi: 10.1021/acsptsci.1c00097

Schmitt, C. B. (1966). Perrenial philosophy: from agostino steuco to leibniz. *J. History Ideas*. 27, 505–532. doi: 10.2307/2708338

Schopenhauer, A. (1969 [1818]). *The World as Will and Representation, Vol. I*. Transl. by E. F. J. Payne. New York, NY: Dover.

Schrödinger, E. (2008 [1961/4]). *My View of the World*. Transl. by C. Hastings. Cambridge: Cambridge University Press.

Schultes, R. E., Hofmann, A., and Rätsch, C. (1998 [1979]). *Plants of the Gods: Their Sacred, Healing, and Hallucinogenic Powers*. Rochester, NY: Healing Arts Press.

Segall, M. (2022). "Altered consciousness after descartes: Whitehead's philosophy of organism as psychedelic realism," in *Philosophy and Psychedelics: Frameworks for Exceptional Experience,* eds C. Hauskeller, and P. Sjöstedt-Hughes (London: Bloomsbury Academic), 195–210. doi: 10.5040/9781350231641.ch-012

Shanon, B. (2010 [2002]). *The Antipodes of the Mind: Charting the Phenomenology of the Ayahuasca Experience*. Oxford: Oxford University Press.

Shulgin, A., and Shulgin, A. (2019 [1991]). *PiHKAL: A Chemical Love Story*. Santa Fe, NM: Transform Press.

Shulgin, A., and Shulgin, A. (2020 [1997]). *TiHKAL: The Continuation*. Santa Fe, NM: Transform Press.

Sjöstedt-Hughes, P. (2021). *Modes of Sentience: Psychedelics, Metaphysics, Panpsychism*. London: Psychedelic Press.

Sjöstedt-Hughes, P. (2022). "The white sun of substance: spinozism and the psychedelic amor dei intellectualis," in *Philosophy and Psychedelics: Frameworks for Exceptional Experience,* eds C. Hauskeller, and P. Sjöstedt-Hughes (London: Bloomsbury Academic), 211–235. doi: 10.5040/9781350231641.ch-013

Skrbina, D. (2007). *Panpsychism in the West*. Cambridge MA: MIT Press.

Spilka, B., Hood, R. W., Hunsberger, B., and Gorsuch, R. (2003). *The Psychology of Religion*, 3rd ed. New York, NY: Guilford Press.

Spinoza, B. (1985/1988). *The Collected Works of Spinoza, Vol. I*, ed and Transl. by E. Curley. Princeton, NJ: Princeton University Press.

Sprigge, T. L. S. (1997). Pantheism. *Monist* 80, 191–217. doi: 10.5840/monist199780210

Sprigge, T. L. S. (2008 [2006]). *The God of Metaphysics: Being a Study of the Metaphysics and Religious Doctrines of Spinoza, Hegel, Kierkegaard, T. H. Green,*

Bernard Bosanquet, Josiah Royce, A. N. Whitehead, Charles Hartshorne, and Concluding with a Defence of Pantheistic Idealism. Oxford: Clarendon Press.

Staal, F. (1975). *Exploring Mysticism*. London: Penguin. doi: 10.1525/9780520342446

Stace, W. T. (1960). *Mysticism and Philosophy*. London: Macmillan.

Strassman, R. (2001). *DMT: The Sprit Molecule: A Doctor's Revolutionary Research into the Biology of Near-Death and Mystical Experiences*. Rochester, NY: Park Street Press.

Strawson, G. (2016). "Mind and being: the primacy of panpsychism," in *Panpsychism: Contemporary Perspectives*, eds G. Brüntrup, and L. Jaskolla (Oxford: Oxford University Press), 75–112. doi: 10.1093/acprof:oso/9780199359943.003.0004

Strawson, G., and Freeman, A., ed. (2006). *Consciousness and Its Place in Nature: Does Physicalism entail Panpsychism*? Exeter: Imprint Academic.

Suzuki, D. T. (1971). Religion and drugs. *East. Buddh*. 4, 128–133.

Taves, A. (2020). Mystical and other alterations in sense of self: an expanded framework for studying nonordinary experiences. *Perspect. Psychol. Sci.* 15, 669–690. doi: 10.1177/1745691619895047

Timmermann, C., Kettner, H., Letheby, C., Roseman, L., Rosas, F. E., and Carhart-Harris, R. L. (2021). Psychedelics alter metaphysical beliefs. *Sci Rep*. 11, 22166. doi: 10.1038/s41598-021-01209-2

Underhill, E. (1911). *Mysticism: A Study in Nature and Development of Spiritual Consciousness*. Grand Rapids, MI: Christian Classics Ethereal Library.

Underhill, E. (1914). *Practical Mysticism: A Little Book for Normal People*. London: J. M. Dent and Sons.

Viereck, G. S. (1930). *Glimpses of the Great*: New York, NY: Macauley.

Ward, R. H. (1957). *A Drug-Taker's Notes*: London: Victor Gollancz.

Watts, A. (1968 [1962]). Psychedelics and religious experience. *California Law Rev*. 56, 4–85. doi: 10.2307/3479497

Watts, A. (2013). *The Joyous Cosmology: Adventures in the Chemistry of Consciousness*. Novato: New World Library.

Watts, R., Kettner, H., Geerts, D., Gandy, S., Kartner, L., Mertens, L., et al. (2022). The Watts connectedness scale. *Psychopharmacology* 239, 3461–3483. doi: 10.1007/s00213-022-06187-5

Whitehead, A. N. (1935 [1925]). *Science and the Modern World*. New York, NY: Macmillan.

Whitehead, A. N. (1958 [1938]). *Modes of Thought*. New York, NY: Capricorn Books.

Wordsworth, W. (1994). *The Works of William Wordsworth*. Ware: Wordsworth Editions.

Yaden, D. B., and Griffiths, R. R. (2021). The subjective effects of psychedelics are necessary for their enduring therapeutic effects. *ACS Pharmacol. Transl. Sci.* 4, 568–572. doi: 10.1021/acsptsci.0c00194

Yoneyama, S. (2017). "Animism: a grassroots response to socioenvironmental crisis in Japan," in *New Worlds from Below: Informal Life Politics and Grassroots Action in Twenty-First-Century Northeast Asia*, eds T. Morris-Suzuki, and E. Jeong Soh (Canberra: Australian National University Press), 99–130. doi: 10.22459/NWFB.03.2017.05

Zaehner, R. C. (1961 [1957]). *Mysticism Sacred and Profane*. Oxford: Oxford University Press.

Zaehner, R. C. (1972). *Zen, Drugs, and Mysticism*. New York, NY: Pantheon Books.

Appendix 1:

Metaphysics Matrix Questionnaire (MMQ)/Glossary.

Based on the *Metaphysics Matrix* (Figure 1).

This pre-validated MMQ has been developed by Peter Sjöstedt-Hughes and Joseph Rennie

Answers: 1–7 (1. Strongly Agree 2. Agree 3. Somewhat Agree 4. Neutral 5. Somewhat Disagree 6. Disagree 7. Strongly Disagree)

Physicalism

1. Everything is fundamentally physical. [physicalism generally]
2. There is no such thing as the mental. [eliminativism]
3. What is meant by 'mental' is only a person's behaviour. [logical behaviourism]
4. Mental activity is identical to patterns of brain activity. [psychoneural identity theory]
5. The mental is a functional network that as such can be realised by the brain but also by a machine. [functionalism]
6. Mental activity is not the same thing as brain activity but emerges from brain activity. [emergentism].
7. Mental activity *emerges* from brain activity and has power to alter the brain and body *via* desires, thoughts, and so on. [emergentism + mental causation]
8. Mental activity emerges from brain activity but has no power to alter the brain and body [epiphenomenalism]
9. Everything is fundamentally physical, but the physical always has a mental element. [real naturalism]
10. Everything is fundamentally physical and there are no gods. [physicalist atheism]

Idealism

11. Only my mind exists. [solipsism]
12. The reality we perceive is a projection of our minds. [idealism generally]
13. Every entity has a mind and reality appears differently to each such entity. [monadic idealism]

Dualism

14. The soul is distinct from the body. [substance dualism]
15. The soul is distinct from the body, yet they interact. [interactionism—non-interactionism (occasionalism, pre-established harmony)]
16. Everything has a soul. [animism]
17. The soul is infinite before and after birth. [infinite dualism]
18. The soul reincarnates. [metempsychosis]

Neutral monism

19. The physical and the mental are two aspects of the same fundamental substance. [neutral monism generally]
20. When we perceive something, it becomes part of us. [organic realism]
21. All entities have their own mental activity, from complex organisms to subatomic particles. [panpsychism]
22. All organisms, from humans to bacteria, have their own mental activity. [biopsychism]
23. All animals have their own mental activity. [zopsychism]
24. Stars and planets have their own mental activity. [astropsychism, polytheism]
25. The universe as a whole has its own mental activity. [cosmopsychism and pantheism]
26. My self extends beyond my brain, body, into the surroundings. [extended mind theory]

The transcendent

27. There exist conscious entities beyond ordinary human perception. [transcendent entities: demons, angels, ghosts, DMT entities, etc.]
28. There exists a realm outside time and space. [transcendent realm]
29. There exist more than three dimensions of space. [hyperspace]
30. The future already exists. [fatalism]
31. The universe has a purpose. [cosmic teleology]
32. Good and Evil are fundamental aspects of reality. [moral realism—nihilism]
33. Good alone is a fundamental aspect of reality. [moral realism]

Theism

34. There are gods. [polytheism]
35. There is a god. [monotheism]
36. God is the universe. [pantheism]
37. God is the universe and more. [panentheism]
38. God created the universe but then left it to itself to develop. [deism]
39. God is evil. [dystheism]
40. I hold no beliefs/Knowledge. [agnosticism]

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Not in the drug, not in the brain: Causality in psychedelic experiences from an enactive perspective

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Psychedelics are psychoactive substances that receive renewed interest from science and society. Increasing empirical evidence shows that the effects of psychedelics are associated with alterations in biochemical processes, brain activity, and lived experience. Still, how these different levels relate remains subject to debate. The current literature presents two influential views on the relationship between the psychedelic molecule, neural events, and experience: The integration view and the pluralistic view. The main aim of this article is to contribute a promising complementary view by re-evaluating the psychedelic molecule-brain-experience relationship from an enactive perspective. We approach this aim *via* the following main research questions: (1) What is the causal relationship between the psychedelic drug and brain activity? (2) What is the causal relationship between brain activity and the psychedelic experience? In exploring the first research question, we apply the concept of *autonomy* to the *psychedelic molecule-brain relationship*. In exploring the second research question, we apply the concept of *dynamic co-emergence* to the *psychedelic brain-experience relationship*. Addressing these two research questions from an enactive position offers a perspective that emphasizes interdependence and circular causality on multiple levels. This enactive perspective not only supports the pluralistic view but enriches it through a principled account of how multi-layered processes come to interact. This renders the enactive view a promising contribution to questions around causality in the therapeutic effects of psychedelics with important implications for psychedelic therapy and psychedelic research.

KEYWORDS

psychedelics, neuroscience, phenomenology, drug, enaction, causality, psychedelic therapy, biopsychosocial model

1. Introduction

The recent resurgence of psychedelic research shows promising evidence of the clinical benefits of psychedelics. This is likely to increase the use of psychedelic treatments in psychiatry and society at large. Motivated by the clinical potential of psychedelics, basic research into pharmacological mechanisms, neuroscientific underpinnings, and into the phenomenological features of psychedelics and their therapeutic outcomes has become a research priority. While

increasing empirical evidence shows that the effects of psychedelics are associated with their partial agonism for the serotonin 5-HT_{2A} receptors, with substantial alterations in brain activity, and with certain aspects of the subjective experience, there are two different views in the current literature on how these various processes on different levels relate: The first view, the *integration* view, concludes that the different levels converge on a similar linear causal cascade: The psychedelic molecule creates changes in brain activity and the brain creates the psychedelic experience. The second view, the pluralistic view, however, holds that psychedelic experiences cannot be reduced to a single causal pathway and argues instead for the interplay of multiple causal pathways. In this article, we aim to contribute to this debate through re-evaluating the psychedelic molecule-brain-experience relationship from a promising third perspective: the enactive approach. Enactive cognitive science provides a framework of interrelated ideas that emphasize the lack of ultimate foundations on various levels: Following the thread of interdependence, the enactive approach questions the causally linear and reductionist notions of various seemingly dualistic relationships, including those between parts and whole, self and world, and subject and object.

1.1. Psychedelics and their relevance

Psychedelics are psychoactive substances that temporarily alter perception, emotions, cognition, and the sense of self (Griffiths et al., 2016; Carhart-Harris et al., 2016a,b; Muttoni et al., 2019).

After decades of dormancy, the number of publications on psychedelics has rapidly increased in recent years (Petranker et al., 2020; Hadar et al., 2022). A fast-growing body of clinical studies shows increasing evidence of promising therapeutic effects of psychedelics for various conditions (Goldberg et al., 2020; Romeo et al., 2020; Andersen et al., 2021; Lawrence et al., 2021; Hadar et al., 2022), including major depression (Carhart-Harris et al., 2016a, 2021; Davis et al., 2021), anxiety and depression in patients diagnosed with a life-threatening disease (Griffiths et al., 2016; Ross et al., 2016), and substance use disorders (Johnson et al., 2014, 2017; Bogenschutz et al., 2015, 2022). These results demonstrate the psychedelics' potential for assisting psychotherapeutic processes (Garcia-Romeu and Richards, 2018; Reiff et al., 2020; Nayak and Johnson, 2021; Scheidegger, 2021b), rendering psychedelics a priority in psychiatric research and beyond, including pharmacological, neuroscientific, and phenomenological research.

1.2. State of psychedelic research: Pharmacology, neurobiology, and experience

Since these clinical results are promising, it is important to understand the specific conditions under which psychedelics' therapeutic effects unfold. Pharmacological research is targeted toward the primary therapeutic mechanism of psychedelics on a pharmacological or biochemical level. Neuroscientific research is targeted toward the neurobiological mechanisms underlying psychedelic therapeutic experiences (Vollenweider and Preller, 2020; Vollenweider and Smallridge, 2022). In contrast, psychological and phenomenological research is targeted toward the subjective features of psychedelic experiences that predict therapeutic success (Roseman et al., 2018; Yaden and Griffiths, 2021). It is evident that pharmacological, neurobiological, and psychological research on psychedelics have gained renewed interest.

1.2.1. Biochemical aspects of psychedelics

From a pharmacological perspective, classic serotonergic psychedelics can be defined with respect to their particular 5-HT_{2A} partial agonism (Nichols, 2016). This includes psilocybin, lysergic acid diethylamide (LSD), mescaline, and N,N-dimethyltryptamine (DMT). This particular 5-HT_{2A} partial agonism distinguishes classic serotonergic psychedelics from cannabinoids, and dissociatives such as ketamine, salvinorin A, and entactogens such as 3,4-methylenedioxymethamphetamine (MDMA), among other substances (Nichols, 2016). In addition to their 5-HT_{2A} partial agonism, classic psychedelics have been shown to increase levels of glutamate (Vollenweider and Kometer, 2010) and oxytocin (Holze et al., 2021a), to increase the production of brain-derived neurotrophic factor (BDNF) (De Almeida et al., 2019; Holze et al., 2020, 2021b), to promote neurogenesis (Ly et al., 2018), and to have anti-inflammatory effects (Nichols, 2016).

1.2.2. Neurobiological aspects of psychedelics

From a neurobiological perspective, several theoretical frameworks have been proposed to account for psychedelic experiences. The three most influential are (1) the cortico-striato-thalamo-cortical (CSTC) model, (2) the claustro-cortical circuit (CCC) model, and (3) the relaxed beliefs under psychedelics (REBUS) model (van Elk and Yaden, 2022).

The CSCT model, an early account of the neurocognitive mechanisms underlying psychedelics, proposes the human brain usually exerts feedback loops between cortical areas and various thalamic nuclei, preventing an overload of information from outside and inside the brain (Vollenweider and Geyer, 2001). While the thalamic nuclei are proposed to work as a selective filter regulated by the prefrontal cortex, the CSCT model states that psychedelics release this inhibition of the prefrontal cortex over the thalamus, leading to an overload of information sent to other sensory brain regions (Vollenweider and Preller, 2020). In brief, the CSCT model assumes that psychedelics reduce the efficacy of thalamo-cortical filtering.

The CCC model, in contrast, is based on neuroimaging observations suggesting that psychedelics activate 5-HT_{2A} neurons in the claustrum which may cause a decoupling between prefrontal regions and the claustrum (Doss et al., 2022). The CCC model is supported by neuroimaging observations, suggesting that psilocybin resulted in significantly altered neural networks associated with cognitive control and with the functioning of the claustrum while subjective effects predicted changes in claustrum activity (Barrett et al., 2020). In brief, the CCC model suggests that psychedelics lead to an activation of the claustro-cortical circuit.

The REBUS model, on the other hand, is an influential account of psychedelic effects based on a synthesis of the entropic brain hypothesis and the free-energy principle (Carhart-Harris and Friston, 2019). Interestingly, the REBUS model not only provides an account on the neurobiological level but also a perspective on how to integrate it with multiple other levels, including the biochemical level and the experiential level. Therefore, the REBUS model could be understood

as a twofold account: (1) as a neurobiological model and (2) as an integrative model on the relationship between various levels of analysis (see section Connecting the Various Levels of Psychedelic Effects). According to the REBUS model, psychedelics initiate a series of neurobiological changes on multiple levels (Carhart-Harris, 2019). On the molecular level, classic serotonergic psychedelics primarily affect serotonin 2A receptors (5-HT_{2A} receptors) (Carhart-Harris, 2019; Vollenweider and Preller, 2020). On the anatomical and functional level, this leads to increased neuroplasticity (Carhart-Harris, 2019; Banks et al., 2021), including changes in functional and directed connectivity between the thalamus and cortical areas (Müller et al., 2017; Preller et al., 2018, 2019; Vollenweider and Preller, 2020). On the dynamic level, increased entropy can be measured in certain aspects of brain function, indicating more unconstrained and less ordered neurodynamics (Carhart-Harris et al., 2014). On the systems level, network disintegration and desegregation are increased, i.e., global functional integration is increased (Petri et al., 2014; Palhano-Fontes et al., 2015; Tagliazucchi et al., 2016; Müller et al., 2018; Carhart-Harris, 2019), including increased synchrony of "sensory" brain regions and decreased integrity of "associative" brain regions, including the DMN and the frontoparietal control network (Carhart-Harris et al., 2012; Muthukumaraswamy et al., 2013; Palhano-Fontes et al., 2015; Kometer and Vollenweider, 2016; Carhart-Harris et al., 2016b; Müller et al., 2018; Preller et al., 2018, 2020; Lord et al., 2019; Vollenweider and Preller, 2020). Ultimately, the REBUS model uses a cascade of differentiating levels to describe how psychedelics lead to increased brain entropy. This reflects a loosening top-down weighting of priors and corresponds with increased liberation of bottom-up signaling which eventually culminates to a relaxation of high-level beliefs (Carhart-Harris, 2019; Carhart-Harris and Friston, 2019).

1.2.3. Experiential aspects of psychedelics

On a more experiential level, psychedelics are associated with transient but significant alterations in perception, cognition, emotion, and the sense of self (Griffiths et al., 2016; Carhart-Harris et al., 2016a,b; Muttoni et al., 2019).

While there is a large variety of psychedelics-related subjective effects, recent research has mainly focused on a subset of psychedelic experiences, including so-called *ego dissolution experiences*, *unitive experiences,* and *mystical-type experiences*.

There is convergent evidence that high doses of psychedelic substances can elicit states of ego dissolution (Nour and Carhart-Harris, 2017; Millière et al., 2018). Ego dissolution is defined as a significant disruption of the sense of self (Nour and Carhart-Harris, 2017; Millière et al., 2018) to the point of temporary loss of one's sense of self and self-world boundaries (Letheby and Gerrans, 2017; Millière, 2017, 2020). This experiential phenomenon is correlated with disintegration and desegregation on the neural systems level (Tagliazucchi et al., 2016; Carhart-Harris et al., 2016b). Related to this profound disruption of one's sense of self, so-called "unitive experiences" signify a sense of personal, interpersonal, and existential interconnectedness (Nour and Carhart-Harris, 2017; Carhart-Harris et al., 2018). Interestingly, psilocybin administered to experienced meditators reliably induces this core element of the mystical-type experience (Smigielski et al., 2019a), which, in turn, is associated with changes in brain default-mode network connectivity and lasting behavioral effects (Smigielski et al., 2019b).

Mystical-type experiences, on the other hand, are rarely defined upfront but rather with relation to certain questionnaires targeting mystical experiences, such as the *Mystical Experience Questionnaire* (MEQ; Pahnke, 1969; MacLean et al., 2012; Barrett et al., 2015), the *Mysticism Scale* (Hood et al., 2001), and subscales of the *5-Dimension Altered States of Consciousness* questionnaire (*5D-ASC;* Dittrich, 1998). As an example, the MEQ comprises four subscales, inquiring into (1) a sense of unity or connectedness, (2) positive feelings such as love or peace, (3) alterations to the sense of time and space, and (4) ineffability, i.e., difficulty with articulating the experience with words (Barrett et al., 2015). In the field of psychedelic research, it has been repeatedly reported that psilocybin can occasion mystical-type experiences (Griffiths et al., 2006, 2008, 2011, 2016, 2018; Scheidegger, 2021a). However, the concept of the mystical experience has also become subject of debate in which potential risks from the scientific study of mystical experiences (Sanders and Zijlmans, 2021) are confronted with the objective of understanding the therapeutic effects of psychedelics and the tools available to study said effects (Breeksema and van Elk, 2021).

Notably, psychedelic studies, especially those with psilocybin, have repeatedly shown that participants frequently rate their psychedelic experiences as among the most meaningful in their lives (Griffiths et al., 2006, 2008, 2011, 2016, 2018; Ross et al., 2016). Scores on mystical-type experience questionnaires have been shown to predict treatment success at long-term follow-up in clinical studies (Garcia-Romeu et al., 2015; Griffiths et al., 2016; Davis et al., 2021; Ko et al., 2022). This underscores that the quality of subjective experience predicts positive mental health outcomes (Roseman et al., 2018) and may account for the majority of the lasting beneficial effects of psychedelics (Jungaberle et al., 2018; Yaden and Griffiths, 2021). These findings on the psychological and experiential level importantly suggest a potential *causal* role of the subjective experience on the therapeutic effects of psychedelics.

1.3. Connecting the various levels of psychedelic effects

These empirical findings on the biochemical, the neural, and the experiential level suggest that processes on each level may exhibit a causal role on the effects of psychedelics. This warrants the question how to relate these different levels of analysis to each other. van Elk and Yaden (2022) have recently distinguished two ways to relate these levels using two most common views in the current psychedelic literature: an *integration* view and a *pluralistic* view on causation.

The integration view on psychedelics targets a common pathway underlying the therapeutic effects of psychedelics for a variety of disorders. It aims to integrate various levels of description by converging them into a unified causal mechanism (van Elk and Yaden, 2022). One most influential integrative approach to psychedelic effects is the aforementioned REBUS model. The REBUS model describes a *cascade* of events, starting at the molecular level, then causing anatomical and functional changes in the brain that eventually culminate in the subjective experience of relaxed prior beliefs. In the words of Carhart-Harris (2019, p. 16), "it is proposed that psychedelics initiate a cascade of neurobiological changes that manifest at multiple scales and ultimately culminate in the relaxation of high-level beliefs".

Thereby, the REBUS model focuses on one specific aspect of the effects of psychedelics: the ability to acutely relax beliefs and assumptions. As a main cause of psychedelic effects, it suggests a single mechanism and reduces their complexity to a single cognitive process. While the REBUS model acknowledges the significance of how other factors should be considered for a comprehensive understanding of psychedelic effects, it proposes a specific neural mechanism as a key factor in shaping the therapeutic effects of psychedelics (see Figure 1). This single-pathway focus can be considered reductionist. When reduced to its proposition of a key neural mechanism leading to the relaxation of prior assumptions and expectations, the REBUS model implies a unidirectional linear molecule-to-brain and brain-to-experience relationship. The psychedelic molecule creates changes in brain activity and the brain creates the psychedelic experience.

The REBUS model, as one integrative view, has provided an influential and important contribution to the field of psychedelic research, incorporating significant insights from the entropic brain hypothesis, the free-energy principle, and predictive processing. Simultaneously, this integrative view has also received criticism. While the REBUS model illuminates a single neural mechanism, it may neglect other important aspects, other possible mechanisms, and the multi-faceted subjective nature of psychedelic experiences.

The pluralistic or *holistic* view on psychedelics shares this critique by emphasizing that psychedelic experiences cannot be reduced to a single cause-and-effect pathway: It needs an account of the interplay of multiple causal pathways to comprehensively understand a given phenomenon (Johnson et al., 2019). Accordingly, the pluralistic view, such as the biopsychosocial model to psychiatry, emphasizes the complex, multidimensional nature of causation involving multiple factors at different levels including biological, psychological, and social influences (Engel, 1977). Applied to psychedelic research, pluralistic theories of causation emphasize that social, cultural, and historical factors need to be considered in the study of psychedelic experiences (van Elk and Yaden, 2022). Likewise, it is argued that psychopharmacology needs to embrace interactions at various levels through multiple top-down and bottom-up causal pathways in order to account for therapeutic effects (Aftab and Stein, 2022).

While the integration view and the pluralistic view are distinct perspectives, they are not mutually exclusive. The causal mechanism described by the REBUS model to account for therapeutic effects of

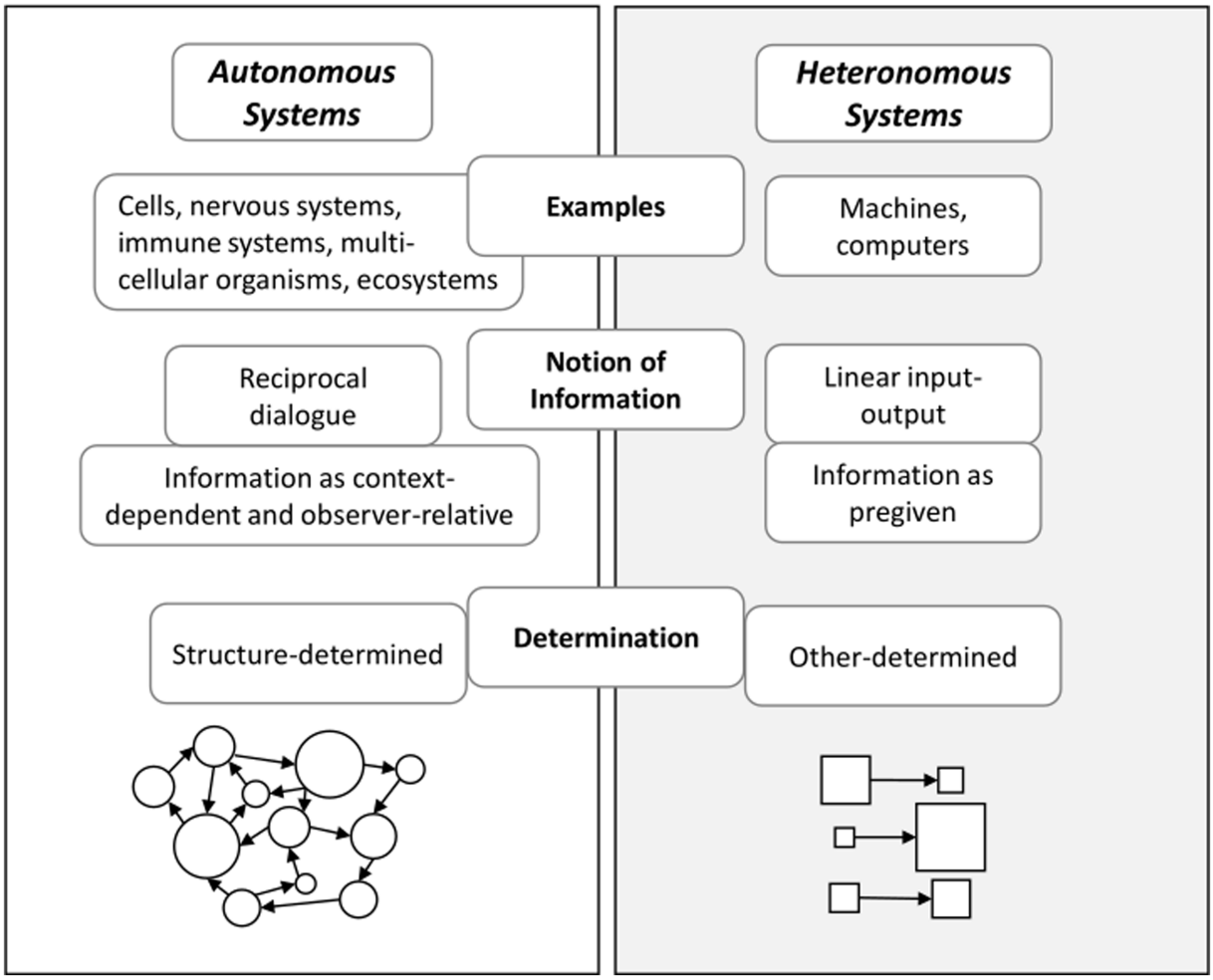

FIGURE 1
Autonomous systems in comparison to heteronomous systems.

psychedelics can be seen as one of the multiple factors identified by the pluralistic view. The pluralistic view can incorporate the integration view but the integration view, if postulating a mono-causal cascade, cannot accommodate the pluralistic view.

Moreover, it has been argued that, in order to fully account for the multi-faceted nature of psychedelic experiences, a pluralistic theory of experience may be needed (van Elk and Yaden, 2022). In support of the pluralistic inclination toward the complexity and multidimensionality of causation, we wish to address this need through contributing a third and distinct but complementary and promising perspective on causality in psychedelic experiences: an enactive view. We argue that the enactive view on psychedelics complements the integration view by adding multiple pathways from the psychological and contextual level, while enriching the pluralistic view by explaining how biopsychosocial levels interact.

1.4. The enactive approach

The enactive approach is a cognitive science framework that has its origin in *The Embodied Mind* from 1991 by Varela, Thompson, and Rosch. Since then, it has gained substantial influence in the field of cognitive science. In this article, when referencing "the enactive approach," we will refer to the work by Varela et al. (2017) and to its consistent advancement by Thompson (2007) and Di Paolo et al. (2010) among others. The enactive approach has its roots in various fields, including the autopoiesis theory by Maturana and Varela, phenomenological philosophy such as Merleau-Ponty's *Phenomenology of Perception* and Hans Jonas' philosophy of life. Moreover, it is inspired by dynamical systems theory and complex system science (Thompson, 2007) and Buddhist *Abhidharma* and *Mādhyamaka* philosophies (Varela et al., 2017). In recent years, the enactive approach has been applied to psychiatry (de Haan, 2020), placebo effects (Arandia and Di Paolo, 2021), pain (Stilwell and Harman, 2019; Coninx and Stilwell, 2021), consciousness research (Høffding and Martiny, 2016; Høffding et al., 2022; Valenzuela-Moguillansky and Demšar, 2022), artistic practices including dance and music improvisation (Schiavio and Høffding, 2015; Ravn and Høffding, 2022), meditation experiences (Meling, 2021, 2022), and ethics (Di Paolo and De Jaegher, 2022) among other fields.

The enactive approach provides a network of interrelated ideas including its central concepts of *autonomy*, *dynamic co-emergence*, *sense-making*, *groundlessness*, and *experience* (Thompson, 2007; Di Paolo et al., 2010; Varela et al., 2017). We propose that these are highly relevant for conceptualizing psychedelic drugs and their relation to psychedelic experiences. Some of them we will elaborate on in the main section of this article. The enactive approach's differentiating factor is that it requires us to confront the lack of ultimate foundations through consistently following the thread of interdependence in various seemingly dualistic relationships, including those between parts and whole, self and world, and subject and object (Varela et al., 2017).

While the enactive approach has been widely ignored in the field of psychedelic research, the free-energy principle (FEP) and predictive processing (PP), two other recent and interrelated developments in cognitive science, have been very influential on neuroscientific research on psychedelics as they inspired the aforementioned REBUS model (Carhart-Harris et al., 2014; Carhart-Harris and Friston, 2019). Despite frequent claims from several authors about the compatibility between the FEP (or PP) and theories of autopoiesis and enaction (Clark, 2015; Allen and Friston, 2018; Constant et al., 2021; Korbak, 2021; Ramstead et al., 2021; Wiese and Friston, 2021), this has been recently criticized as misrepresenting enactive concepts (Di Paolo et al., 2022). While the details of this comparison go beyond the scope of this article, it underscores that applying FEP to psychedelics does *not* already entail applying the enactive approach to psychedelics. Therefore, a thorough application of enactive ideas to psychedelics is yet to be accomplished.

1.5. Aim and research questions

The main aim of this article is to explore psychedelics from an enactive perspective and more specifically to provide an enactive view on the causal relationship between psychedelic drugs, neural events, and experience. This aim is approached *via* the following two interconnected *research questions*:

1. What is the causal relationship between the psychedelic drug and brain activity?
2. What is the causal relationship between brain activity and the psychedelic experience?

2. An enactive approach to the psychedelic molecule-brain-experience relationship

In this section, we will address the two main research questions through analyzing the causal foundations of the psychedelic molecule-brain-experience relationships.

2.1. The molecule-brain relationship

In this subsection we address the first main research question. Guided by an enactive perspective, we re-evaluate the relationship between the psychedelic molecule and neural events through inquiring whether (1) the psychedelic molecule determines brain activity and (2) whether the psychedelic molecule transmits information.

2.1.1. Does the molecule determine brain activity?

The *first question* of whether the psychedelic molecule determines brain activity can also be addressed through the enactive concept of *autonomy*.

Autonomy signifies how living cognitive systems are organized to generate and sustain themselves as an identity (Varela, 1997; Thompson and Stapleton, 2009). Autonomous systems are found at various levels of systems, including single cells, microbial communities, nervous systems, immune systems, multicellular organisms (such as humans), and ecosystems (Thompson, 2007). One way to define an autonomous system is with regard to its *operational closure*: An autonomous system is constituted by interacting processes that (1) recursively depend on each other for sustaining their network

of activity, (2) constitute an identity or unity (e.g., a cell or neural pattern), and (3) determine the range of possible interactions with the environment (Thompson, 2007; Thompson and Stapleton, 2009).

This brings us to the core of the distinction between autonomous systems and heteronomous systems (see Figure 2). A heteronomous system is determined from the outside whereas an autonomous system is not. An autonomous system is self-determining in its interactions with its environment (Thompson, 2007). Accordingly, the state of an autonomous system depends on how it *interacts* with perturbations from its environment.

This structural determination of an autonomous system is especially relevant for our discussion of the *psychedelic* molecule-brain relationship: An autonomous system is not determined from the outside. Its state depends on the specific organism-environment interactions. Fittingly for our discussion on psychedelics, Maturana and Varela (1987) illustrated this point with the example of a cell including a "*molecule X*" into its autonomous organization: The consequences of the cell including a molecule X into its processes are not merely determined by the specific features of the molecule X but by how the particular structure of the cell *interacts* with this molecule when integrating it. This example applies to every kind of autonomous system, including the nervous system integrating a psychedelic molecule.

Superimposed over the psychedelic molecule-brain relationship, this concept of autonomy has important implications: The consequences of the human nervous system integrating a psychedelic molecule into its autonomous activity is *not* determined by the specific features of the psychedelic substance but by the interaction between the nervous system's particular autonomous activity and the psychedelic molecule. Therefore, the assumption of a linear causal impact of a psychedelic molecule on neural processes does not hold under the premise of autonomy. Autonomy confronts us with the lack of mono-causal foundation in the psychedelic molecule.

2.1.2. Does the molecule transmit specific information to the brain?

The *second question* of whether the psychedelic molecule transmits *information* can be addressed through the enactive framing of information related to its concept of autonomy.

Information in autonomous systems is different from information in heteronomous systems. A heteronomous system (including computers) operates in an input–output manner. It takes information from an outside world, processes it, and generates output. In contrast, an autonomous system does not work in a linear input–output manner (Thompson, 2007). Figure 2 summarizes these differences between autonomous systems and heteronomous systems. In an autonomous system, perturbations are structure-determined. Therefore, it rather works in a dialogical manner: For autonomous systems, information does not belong to the environment. Rather, it belongs to the *system-environment coupling*. Importantly, what counts as information is determined by the way the autonomous system's structure interacts with its environment. This includes the system's history of becoming this temporary structure (Di Paolo, 2021), and its particular needs in its environment. Therefore, for an autonomous system information is context-dependent and observer-relative (Thompson, 2007, pp. 51–52).

This autonomy-informed notion of information has major implications for the psychedelic molecule-brain relationship. All living animals including humans are autonomous systems. In interaction with them, the psychedelic drug does not transmit information to the

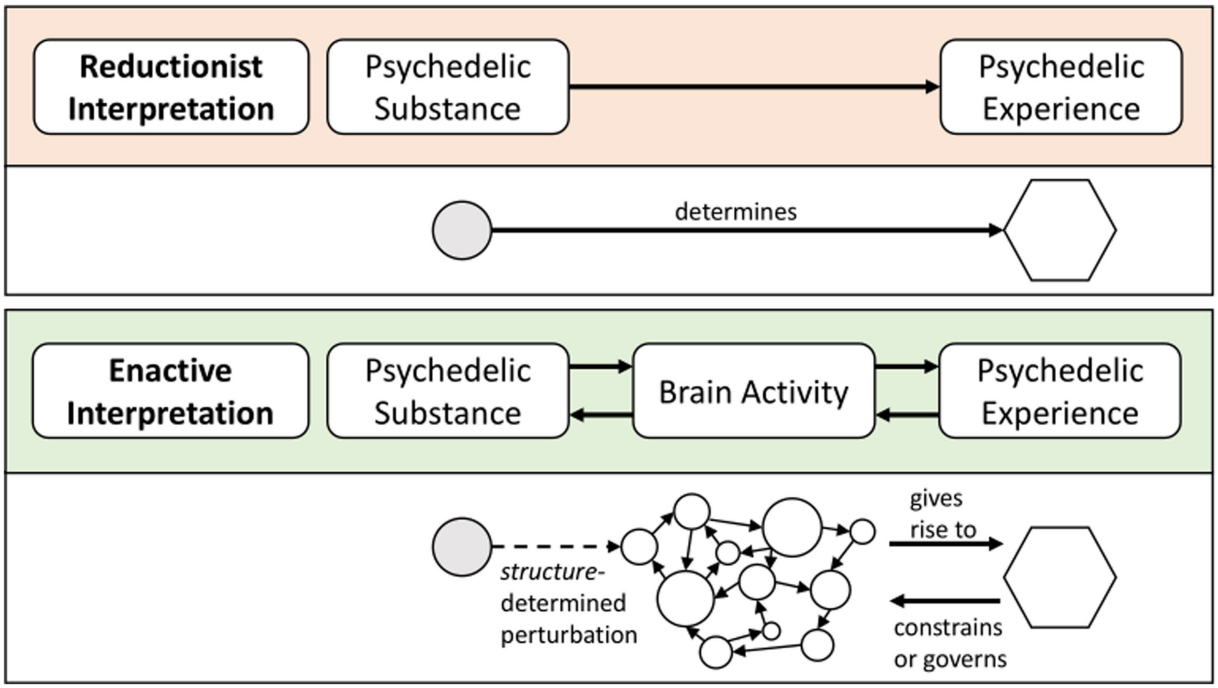

FIGURE 2
The psychedelic substance-experience link in a reductionist interpretation versus an enactive interpretation. In the enactive interpretation panel, links to the social and cultural environment are left out for conciseness purposes. However, the enactive approach includes an emphasis on the multiple interdependencies with the environment.

brain or body. Information does not belong to the psychedelic molecule. It must belong to the coupling of the psychedelic molecule with the structure of the autonomous system. Therefore, psychedelic drug effects are context-dependent and agent-relative.

2.2. The brain-experience relationship

In this subsection, we address the second main research question. From an enactive perspective, we re-evaluate the relationship between neural events and experience through inquiring whether the psychedelic-influenced brain determines the psychedelic experience. This can be addressed through the enactive concepts of *autonomy* and *dynamic co-emergence*.

2.2.1. Does the brain determine experience?

A traditional neuroscientific approach to consciousness assumes a one-way causality from neural activity to consciousness. In contrast, the enactive approach proposes a two-way reciprocal relationship:

> *"[w]e propose that there are two-way or reciprocal relationships between neural events and conscious activity. An attractive feature of this proposal is that it allows consciousness to be a causally efficacious participant in the cycles of operation constituting the agent's life."* (Thompson and Varela, 2001, p. 425).

The enactive approach arrives at this conclusion *via* applying the ideas of autonomy and dynamic co-emergence to neural assemblies and lived experience.

Dynamic co-emergence describes how an autonomous system works, signifying how an autonomous system as a *whole* is connected to the interaction of its *parts*. While there are different types and definitions of emergence, we focus here on a particular notion of emergence that emphasizes self-organization and circular causality and which is implicit in the concept of autonomy (Thompson, 2007). This notion of dynamic co-emergence involves a reciprocal influence of both a *local-to-global determination* (or "upward causation") and a *global-to-local determination* (or "downward causation") (Thompson, 2007). Local-to-global determination signifies that the parts give rise to the whole. This gives rise to novel processes that have "their own features, lifetimes, and domains of interaction" (Thompson and Varela, 2001, p. 419). Global-to-local determination signifies that the whole gives rise to the parts: Global characteristics of a system constrain or govern local interactions. Dynamic co-emergence refers to the idea that both local-to-global determination and global-to-local determination apply simultaneously (Thompson and Varela, 2001).

Importantly, the enactive approach proposes that this dynamic co-emergence applies to the brain-experience relationship:

> *[g]iven that the coupled dynamics of brain, body and environment exhibit self-organization and emergent processes at multiple levels, and that emergence involves both upward and downward causation, it seems legitimate to conjecture that downward causation occurs at multiple levels in these systems, including that of conscious cognitive acts in relation to local neural activity. Indeed, this point has been noted by authors concerned with the dynamical systems approach to cognition.* (Thompson and Varela, 2001, p. 421, emphasis added).

This dynamic co-emergence between local neural activity and global conscious cognitive acts implies that lived experience co-emerges with brain activity while being irreducible to it. Experience is not an epiphenomenal effect of neural activity but rather has causal efficacy. As an example for downward causation, Thompson and Varela (2001) present an experimental case study showing a particular way how experiential acts of perception can pull epileptic activities toward unstable periodic orbits. As a co-emergent phenomenon, experience gains its own characteristics and causal global-to-local efficacy on constraining local neural activity: Neural activity and lived experience co-emerge.

Applied to the psychedelic brain-experience relationship, the dynamic co-emergence between neural events and consciousness provides obvious implications: The psychedelic lived subjective experience is *not* epiphenomenal. It is not linearly determined by the neural activity in reaction to a psychedelic drug. Taking the concept of dynamic co-emergence seriously and applying it to the case of psychedelic experiences implies a *reciprocal causal relationship* between neural events and the psychedelic experience: While neural events (in structure-determined interaction with a psychedelic drug) give rise to the psychedelic experience as experiential cognitive acts (*via* local-to-global determination), these psychedelic experiential cognitive acts simultaneously limit the possible neural activity (*via* global-to-local determination). Therefore, the assumption that *the brain affects experience* through a one-way causal relationship does not hold under the premise of dynamic co-emergence. Psychedelic neural activity and psychedelic experiences co-emerge and dialogically affect each other.

2.2.2. Circular causality in the psychedelic brain-experience relationship

This notion of circular causality underlying the concept of dynamic co-emergence is well expressed in Merleau-Ponty's (1963, p. 50) *Structure of Behavior*: "The genesis of the whole by compositions of the parts is fictitious. It arbitrarily breaks the chain of reciprocal determinations". He distinguishes between linear causality and circular causality. Applied to the psychedelic brain-experience relationship, *linear causality* would imply that neural activity determines the psychedelic experience, but the psychedelic experience does *not* determine neural activity. In contrast, *circular causality* implies that neural activity and the psychedelic experience are part of the same system and therefore determine each other mutually. In psychology and biology, causality is never linear or mechanistic but circular (Merleau-Ponty, 1963; Thompson, 2007). This circular causal notion applies to both the psychedelic molecule-brain relationship and the psychedelic brain-experience relationship.

This view of circular causality is echoed in the *interventionist approach* to causation: If X is a cause of Y it must apply that by intervening on X we also intervene on Y. This interventionist approach can be applied to the brain-experience relationship (Thompson, 2009). First, intervening on biological events has consequences on one's experience. Triggering a change in one's *biological* state (for example by a psychedelic drug) may result in short-term or long-term changes in one's *experiential* state. Second, intervening on one's experience has consequences on one's biological state. Triggering a change in one's *experiential* state by purely psychological means (for example by contemplative training or psychotherapy) may result in short-term or long-term changes to neural activity or hormonal patterns. In other

words, to intervene on X is to intervene on Y; to intervene on Y is to intervene on X. They are part of the same system. Therefore, circular causality applies.

2.3. Summary on the specific research questions

In exploring the first research question, we applied the concept of *autonomy* to the *psychedelic molecule-brain relationship* (research question 1): The consequences of the human nervous system integrating a psychedelic molecule into its autonomous activity is *not* mono-causally determined by the specific features of the psychedelic substance but by the particular interaction between the temporary structure of the nervous system's autonomous activity and the psychedelic molecule. The consequences neither belong to the psychedelic molecule nor to the nervous system's activity. They depend on the specific molecule-organism interaction.

In exploring the second research question, we applied the concept of *dynamic co-emergence* to the *psychedelic brain-experience relationship* (research question 2): The psychedelic experience is not epiphenomenal or linearly determined by the neural activity in reaction to a psychedelic drug. Rather, they are co-dependently emerging. Neural events give rise to the psychedelic experience and the psychedelic experience limits the range of potential neural events. Rather than being a mere epiphenomenon of neural activity, the psychedelic experience is causally efficacious on neural activity: Neural activity and experience are co-emergent. As with the psychedelic molecule-brain relationship, from an enactive perspective the psychedelic brain-experience relationship is not unidirectional but bidirectional and circular (see Figure 1).

The inquiry into both research questions from an enactive view resulted in a perspective that emphasizes interdependence. Therefore, the main contribution of this article is a framework of ideas that accounts for the interdependence of psychedelic experiences including their nonlinear causality and non-reducibility. This results in a complex account of causality in psychedelic experiences.

3. Implications for psychedelic research and psychedelic therapy

The points presented here used the enactive view to offer an alternative perspective on causality in the psychedelic molecule-brain-experience relationship giving rise to important implications for the field of psychedelic research and for an understanding of therapeutic effects of psychedelics.

The presented enactive approach to psychedelics contributes a valuable perspective to psychedelic research in multiple ways. First, the enactive view complements the integration view as it accounts for empirical findings that cannot be explained by the REBUS model alone or by integrative or reductionist approaches in general. Second, it enriches pluralistic theories of causation by explaining how exactly processes on different levels (biological, psychological, and social processes) can causally interact. Third, the enactive view on psychedelics accounts for a plurality of causes of therapeutic effects in psychedelic-assisted therapy and thereby embraces a plurality of treatment forms. Fourth, from this perspective, suggestions for future research can be derived including further research questions.

3.1. The enactive approach and the integration view

While the REBUS model, as one exemplary integration view, proposes that the biochemical, neural, and experiential aspects of psychedelics converge on a single causal cascade, there is also contradicting evidence. First, while there are studies corroborating the REBUS model through showing LSD-induced reductions in electrophysiological responses to surprising stimuli (Timmermann et al., 2018), other studies have not observed such reductions in surprise responses (Umbricht et al., 2003; Vollenweider and Preller, 2020). Second, while the REBUS model proposes that effects on the default-mode network (DMN) are central in psychedelics, even stronger effects have been reported in changing activity in other networks (Lebedev et al., 2016; Mason et al., 2020). Third, psychedelics may elicit a broad variety of experiences rather than only the relaxation of high-level beliefs. It has been argued that psychedelics, depending on dosage, may also lead to a strengthening of beliefs (Safron, 2020). Fourth, there is evidence suggesting a potential causal role of subjective experiences on therapeutic outcomes (Roseman et al., 2018; Yaden and Griffiths, 2021). The REBUS model, however, with its focus on a key neural mechanism does not account for a causal role of the quality of subjective experience. Fifth, the role of *set and setting*, i.e., extrapharmacological or non-biological factors that shape the response to psychedelics, are increasingly recognized in psychedelic research: The expectation, preparation, and intention (set) and the physical and social environment (setting) affect to some degree the consequences of the psychedelic substance-human interaction (Hartogsohn, 2016, 2017). This relevance of set and setting is not captured in an integration account that focuses on a single causal neural pathway.

These findings suggest other causal pathways, creating tension with the integrative proposal that the different levels converge on a single causal pathway. From an enactive perspective, however, these empirical findings confirm the causal complexity that mediates psychedelic effects: As an example, the aforementioned measured surprise response depends not only on the substance but also on the instruction of the task, on the participants' expectations and intentions, on their felt relationship to the researchers, their individual bodily constitution, their history of interactions with their environment, and many more factors. Keeping this complexity of causal influences in mind, it is not surprising that some studies showed psychedelic-induced reductions in electrophysiological responses to surprising stimuli (Timmermann et al., 2018), while other studies have not observed such reductions in surprise responses (Umbricht et al., 2003; Vollenweider and Preller, 2020). The same applies to the mentioned finding of a variety of brain networks that show changed activity and to the finding that psychedelics may not only lead to a relaxation of beliefs but also to their strengthening. Depending on other causal influences, as from the body, the environment, the experience, the measured effects naturally vary. And the enactive approach can accommodate this variety of causal influences as its emphasis on the dynamic co-emergence between different levels suggests

bidirectional causality on multiple levels. First, neural activity is not dependent only on the substance but on the entire body's constitution, other perturbations from the environment, the subject's lived experience, and many further factors that cannot be entirely controlled within an empirical study. Neural activity under the effects of a psychedelic substance is contextual and situated: Therefore, it strongly varies across studies. Second, from an enactive perspective subjective experiences co-emerge with neural processes so that neural processes have causal efficacy on subjective experience while subjective experience has causal efficacy on neural processes. Third, the enactive account emphasizes the organism-environment interaction that shapes cognition. This includes a causal role of extrapharmacological factors, such as psychological, social, and historical factors that shape the psychedelic experience.

From an enactive view, the integrative view that "psychedelics initiate a cascade of neurobiological changes that manifest at multiple scales and ultimately culminate in the relaxation of high-level beliefs" (Carhart-Harris, 2019, p. 16) is not negated.[1] Rather, it is expanded through adding multiple causal pathways in order to capture the causal complexity that contributes to a psychedelic experience. This focus on the complexity and multidimensionality of causation is shared between the pluralistic view and the enactive approach.

3.2. The enactive approach and the pluralistic view

The pluralistic view and the enactive approach have several commonalities regarding the notion of causality. Both approaches emphasize causal complexity and that multiple factors contribute to psychedelic effects, including the environmental setting, the socio-cultural context, and the individual's expectations. In other words, both approaches consider the context-dependency and observer-relativity of a psychedelic experience and acknowledge the importance of the subjective experience.

However, as argued by de Haan (2021) in the context of psychiatry, the biopsychosocial model as one pluralistic view of causation faces an *integration problem,* as it does not tell how processes of largely differentiating natures can causally affect each other. The enactive approach, however, can explain such biopsychosocial interaction (de Haan, 2020). Likewise, the enactive approach substantially enriches the pluralistic view of causation regarding psychedelics as it provides a principled account of how biochemical, neural, and experiential processes affect each other through local-to-global and global-to-local determination. They are mutually dependent autonomous processes that co-emerge and therefore exert circular causality. These interactions on multiple levels shape the psychedelic experience.

3.3. Psychedelic-assisted psychotherapy from an enactive perspective

In acknowledging the plurality of causes on therapeutic effects, the enactive view provides a theoretical basis for a holistic approach to psychiatry (de Haan, 2020). Rather than advocating a specific form of treatment, the enactive view of therapy targets a better understanding of how various influences interact. Accordingly, it embraces a plurality of treatment forms in a personalized approach that targets the dynamic and complex person-world system as the unit of analysis (de Haan, 2020).

Likewise, the presented enactive approach to causality in the psychedelic molecule-brain-experience relationship suggests similar implications for psychedelic therapy. In acknowledging the multiple and circular causal pathways between the psychedelic substance, neural activity, the subjective experience, the social and physical environment, and many other factors, the enactive approach embraces a plurality of ways of how therapeutic effects can emerge in psychedelic-assisted psychotherapy. In principle, it can be derived that therapeutic effects can co-emerge with a variety of causal factors and their mutual interactions, including a particular molecular substance effect (e.g., binding on 5-HT_{2A} receptors), a particular pattern of neural activity (e.g., activity in the claustro-cortical circuit), particular experiences (e.g., a mystical-type experience), a particular bodily state (e.g., a comfortable and relaxed body posture or a release of muscular tension), a particular physical environment (e.g., a calm and warm space with soothing music), a particular social context (e.g., a friendly, accepting, and nonjudgmental atmosphere), and a particular intention or expectation (e.g., the intention to turn one's attention to unpleasant aspects of one's life in an accepting and nonjudgmental way). Therefore, the enactive view supports a holistic approach to psychedelic-assisted psychotherapy that acknowledges the potentially therapeutic effects of psychedelic substances and simultaneously goes beyond the focus on the psychedelic substance through emphasizing the importance of the ecology of causes that surrounds the organism's interaction with the psychedelic substance.

3.4. Recommendations for future research

Finally, suggestions for a psychedelic research agenda can be derived from the enactive view on the psychedelic

1 We are aware that many enactivist thinkers consider their position as a paradigm shift that ought to replace a representationalist view of mind and brain (*cf.* Thompson, 2007; Di Paolo et al., 2017; Gallagher, 2017). While the representationalist view is rejected (as it reduces the causal complexity of the organism-environment interaction that is involved in perception to a unidirectional and passive environment-to-organism imprint), the enactive approach generally acknowledges a (relevant but insufficient) role of environmental perturbations on the organism's perception. Therefore, we speak of "complementing" the integration view through considering multiple pathways from the psychological and contextual level. This implies, however, a rejection of incorporating the integration view into a reductionist framework. While it is not within the scope of this paper to discuss the nuances between different forms and interpretations of the enactive approach (see De Jesus, 2016) or even of 4E cognition and their varied stances on the explanatory need for representations, we simply note that the integration view is explanatorily insufficient to accommodate all the aforementioned experimental results and that other causal mechanisms, including those advanced by the enactive approach, must be invoked to explain these results.

molecule-brain-experience relationship. As we have seen, the enactive view admits that there is definitely an impact on experience from the molecule *via* neural activity. Simultaneously, it prompts us to acknowledge the vast complexity of causes and conditions that enable a trial participant to report a certain psychedelic experience or therapeutic improvements. The enactivist insistence on the complexity of causes that shape a psychedelic experience prompts questions that go beyond the reduction to the drug or to the brain: How did the neural system take up this molecule, what was the structure of the nervous system integrating that psychedelic substance? What impacted that structure of the nervous system, e.g., other bodily processes or environmental factors? Under which conditions were these experiences reported? What were the expectations of the participants, what was their environmental context?

Further research is needed to operationalize these questions and other implicit hypotheses from this article in order to empirically test them; employing a compatible scientific methodology that connects different views and disciplinary methodologies in a way that acknowledges the enactive view of circular causality.

Accordingly, psychedelic research inspired by the enactive approach may require an interdisciplinary endeavor that integrates different perspectives, such as neuroscientific, phenomenological, cultural, anthropological, and historical, among others, in order to provide a more comprehensive understanding of the complex interactions across different levels involved in the psychedelic experience.

4. Conclusion

The enactive view on psychedelics complements the integration view by adding multiple pathways from the psychological and contextual level, while enriching the pluralistic view by explaining how biopsychosocial levels interact. Through its concepts of autonomy and dynamic co-emergence, the enactive approach offers the possibility for a circular causality between multiple levels, including a causal efficacy of subjective experience on neural activity. As a holistic approach, the enactive perspective targets an understanding of how various influences interact in therapeutic practice and thereby embraces a plurality of ways that can support therapeutic effects in psychedelic therapy. Finally, from an enactive view, an interdisciplinary integration of various perspectives and methods on various levels may be required for future psychedelic research in order to address the complex causal circularity involved in the psychedelic molecule-brain-experience relationship. Insights into a variety of causes at play in the psychedelic substance-organism interaction are a critical step toward fully harnessing the therapeutic potential of psychedelics.

Data availability statement

The original contributions presented in the study are included in the article, further inquiries can be directed to the corresponding author.

Author contributions

DM conceptualized and wrote the first and subsequent drafts of the manuscript. MS contributed to manuscript revision and wrote sections of the manuscript. All authors contributed to the article and approved the submitted version.

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Conflict of interest

MS declares that he co-founded Reconnect Labs, an academic spin-off at the University of Zurich, focused on the development of psychedelic medicines for mental health. DM declares that this research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

The handling editor NL declares a past co-authorship with the author MS.

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References

Aftab, A., and Stein, D. J. (2022). Psychopharmacology and explanatory pluralism. *JAMA Psychiatry* 79, 522–523. doi: 10.1001/jamapsychiatry.2022.0470

Allen, M., and Friston, K. J. (2018). From cognitivism to autopoiesis: towards a computational framework for the embodied mind. *Synthese* 195, 2459–2482. doi: 10.1007/s11229-016-1288-5

Andersen, K. A. A., Carhart-Harris, R., Nutt, D. J., and Erritzoe, D. (2021). Therapeutic effects of classic serotonergic psychedelics: a systematic review of modern-era clinical studies. *Acta Psychiatr. Scand.* 143, 101–118. doi: 10.1111/acps.13249

Arandia, I. R., and Di Paolo, E. A. (2021). Placebo from an enactive perspective. *Front. Psychol.* 12:660118. doi: 10.3389/fpsyg.2021.660118

Banks, M. I., Zahid, Z., Jones, N. T., Sultan, Z. W., and Wenthur, C. J. (2021). Catalysts for change: the cellular neurobiology of psychedelics. *Mol. Biol. Cell* 32, 1135–1144. doi: 10.1091/mbc.E20-05-0340

Barrett, F. S., Johnson, M. W., and Griffiths, R. R. (2015). Validation of the revised mystical experience questionnaire in experimental sessions with psilocybin. *J. Psychopharmacol.* 29, 1182–1190. doi: 10.1177/0269881115609019

Barrett, F. S., Krimmel, S. R., Griffiths, R. R., Seminowicz, D. A., and Mathur, B. N. (2020). Psilocybin acutely alters the functional connectivity of the claustrum with brain networks that support perception, memory, and attention. *NeuroImage* 218:116980. doi: 10.1016/j.neuroimage.2020.116980

Bogenschutz, M. P., Forcehimes, A. A., Pommy, J. A., Wilcox, C. E., Barbosa, P., and Strassman, R. J. (2015). Psilocybin-assisted treatment for alcohol dependence: a proof-of-concept study. *J. Psychopharmacol.* 29, 289–299. doi: 10.1177/0269881114565144

Bogenschutz, M. P., Ross, S., Bhatt, S., Baron, T., Forcehimes, A. A., Laska, E., et al. (2022). Percentage of heavy drinking days following psilocybin-assisted psychotherapy vs placebo in the treatment of adult patients with alcohol use disorder: a randomized clinical trial. *JAMA Psychiat.* 79, 953–962. doi: 10.1001/jamapsychiatry.2022.2096

Breeksema, J. J., and van Elk, M. (2021). Working with weirdness: a response to moving past mysticism in psychedelic science. *ACS Pharmacol. Transl. Sci.* 4, 1471–1474. doi: 10.1021/acsptsci.1c00149

Carhart-Harris, R. L. (2019). How do psychedelics work? *Curr. Opin. Psychiatry* 32, 16–21. doi: 10.1097/YCO.0000000000000467

Carhart-Harris, R. L., Bolstridge, M., Rucker, J., Day, C. M. J., Erritzoe, D., Kaelen, M., et al. (2016a). Psilocybin with psychological support for treatment-resistant depression: an open-label feasibility study. *Lancet Psychiatry* 3, 619–627. doi: 10.1016/S2215-0366(16)30065-7

Carhart-Harris, R. L., Erritzoe, D., Haijen, E., Kaelen, M., and Watts, R. (2018). Psychedelics and connectedness. *Psychopharmacology* 235, 547–550. doi: 10.1007/s00213-017-4701-y

Carhart-Harris, R. L., Erritzoe, D., Williams, T., Stone, J. M., Reed, L. J., Colasanti, A., et al. (2012). Neural correlates of the psychedelic state as determined by fMRI studies with psilocybin. *Proc. Natl. Acad. Sci.* 109, 2138–2143. doi: 10.1073/pnas.1119598109

Carhart-Harris, R. L., and Friston, K. J. (2019). REBUS and the anarchic brain: toward a unified model of the brain action of psychedelics. *Pharmacol. Rev.* 71, 316–344. doi: 10.1124/pr.118.017160

Carhart-Harris, R. L., Giribaldi, B., Watts, R., Baker-Jones, M., Murphy-Beiner, A., Murphy, R., et al. (2021). Trial of psilocybin versus Escitalopram for depression. *N. Engl. J. Med.* 384, 1402–1411. doi: 10.1056/NEJMoa2032994

Carhart-Harris, R. L., Leech, R., Hellyer, P. J., Shanahan, M., Feilding, A., Tagliazucchi, E., et al. (2014). The entropic brain: a theory of conscious states informed by neuroimaging research with psychedelic drugs. *Front. Hum. Neurosci.* 8:20. doi: 10.3389/fnhum.2014.00020

Carhart-Harris, R. L., Muthukumaraswamy, S., Roseman, L., Kaelen, M., Droog, W., Murphy, K., et al. (2016b). Neural correlates of the LSD experience revealed by multimodal neuroimaging. *Proc. Natl. Acad. Sci.* 113, 4853–4858. doi: 10.1073/pnas.1518377113

Clark, A. (2015). Radical predictive processing: radical predictive processing. *South. J. Philos.* 53, 3–27. doi: 10.1111/sjp.12120

Coninx, S., and Stilwell, P. (2021). Pain and the field of affordances: an enactive approach to acute and chronic pain. *Synthese* 199, 7835–7863. doi: 10.1007/s11229-021-03142-3

Constant, A., Clark, A., and Friston, K. J. (2021). Representation wars: enacting an armistice through active inference. *Front. Psychol.* 11:598733. doi: 10.3389/fpsyg.2020.598733

Davis, A. K., Barrett, F. S., May, D. G., Cosimano, M. P., Sepeda, N. D., Johnson, M. W., et al. (2021). Effects of psilocybin-assisted therapy on major depressive disorder: a randomized clinical trial. *JAMA Psychiat.* 78, 481–489. doi: 10.1001/jamapsychiatry.2020.3285

De Almeida, R. N., Galvão, A. C. D. M., Da Silva, F. S., Silva, E. A. D. S., Palhano-Fontes, F., Maia-de-Oliveira, J. P., et al. (2019). Modulation of serum brain-derived Neurotrophic factor by a single dose of Ayahuasca: observation from a randomized controlled trial. *Front. Psychol.* 10:1234. doi: 10.3389/fpsyg.2019.01234

de Haan, S. (2020). An enactive approach to psychiatry. *Philosophy Psychiatry Psychol.* 27, 3–25. doi: 10.1353/ppp.2020.0001

de Haan, S. (2021). Bio-psycho-social interaction: an enactive perspective. *Int. Rev. Psychiatry* 33, 471–477. doi: 10.1080/09540261.2020.1830753

De Jesus, P. (2016). Autopoietic enactivism, phenomenology and the deep continuity between life and mind. *Phenomenol. Cogn. Sci.* 15, 265–289. doi: 10.1007/s11097-015-9414-2

Di Paolo, E. A. (2021). Enactive becoming. *Phenomenol. Cogn. Sci.* 20, 783–809. doi: 10.1007/s11097-019-09654-1

Di Paolo, E., Buhrmann, T., and Barandiaran, X. (2017). *Sensorimotor Life: An Enactive Proposal*. Oxford: Oxford University Press.

Di Paolo, E. A., and De Jaegher, H. (2022). Enactive ethics: difference becoming participation. *Topoi* 41, 241–256. doi: 10.1007/s11245-021-09766-x

Di Paolo, E. A., Rohde, M., and De Jaegher, H. (2010). Horizons for the enactive mind: values, social interaction, and play. In J. Stewart, O. Gapenne and PaoloE. A. Di (Eds.), *Enaction*. 32–87). Cambridge, MA: The MIT Press.

Di Paolo, E., Thompson, E., and Beer, R. (2022). Laying down a forking path: tensions between enaction and the free energy principle. *Philosophy Mind Sci.* 3:9187. doi: 10.33735/phimisci.2022.9187

Dittrich, A. (1998). The standardized psychometric assessment of altered states of consciousness (ASCs) in humans. *Pharmacopsychiatry* 31, 80–84. doi: 10.1055/s-2007-979351

Doss, M. K., Madden, M. B., Gaddis, A., Nebel, M. B., Griffiths, R. R., Mathur, B. N., et al. (2022). Models of psychedelic drug action: modulation of cortical-subcortical circuits. *Brain* 145, 441–456. doi: 10.1093/brain/awab406

Engel, G. L. (1977). The need for a new medical model: a challenge for biomedicine. *Science* 196, 129–136. doi: 10.1126/science.847460

Gallagher, S. (2017). *Enactivist Interventions: Rethinking the Mind*. Oxford: Oxford University Press.

Garcia-Romeu, A., Griffiths, R. R., and Johnson, M. (2015). Psilocybin-occasioned mystical experiences in the treatment of tobacco addiction. *Curr. Drug Abuse Rev.* 7, 157–164. doi: 10.2174/1874473708666150107121331

Garcia-Romeu, A., and Richards, W. A. (2018). Current perspectives on psychedelic therapy: use of serotonergic hallucinogens in clinical interventions. *Int. Rev. Psychiatry* 30, 291–316. doi: 10.1080/09540261.2018.1486289

Goldberg, S. B., Shechet, B., Nicholas, C. R., Ng, C. W., Deole, G., Chen, Z., et al. (2020). Post-acute psychological effects of classical serotonergic psychedelics: a systematic review and meta-analysis. *Psychol. Med.* 50, 2655–2666. doi: 10.1017/S003329172000389X

Griffiths, R. R., Johnson, M. W., Carducci, M. A., Umbricht, A., Richards, W. A., Richards, B. D., et al. (2016). Psilocybin produces substantial and sustained decreases in depression and anxiety in patients with life-threatening cancer: a randomized double-blind trial. *J. Psychopharmacol.* 30, 1181–1197. doi: 10.1177/0269881116675513

Griffiths, R. R., Johnson, M. W., Richards, W. A., Richards, B. D., Jesse, R., MacLean, K. A., et al. (2018). Psilocybin-occasioned mystical-type experience in combination with meditation and other spiritual practices produces enduring positive changes in psychological functioning and in trait measures of prosocial attitudes and behaviors. *J. Psychopharmacol.* 32, 49–69. doi: 10.1177/0269881117731279

Griffiths, R. R., Johnson, M. W., Richards, W. A., Richards, B. D., McCann, U., and Jesse, R. (2011). Psilocybin occasioned mystical-type experiences: immediate and persisting dose-related effects. *Psychopharmacology* 218, 649–665. doi: 10.1007/s00213-011-2358-5

Griffiths, R. R., Richards, W., Johnson, M., McCann, U., and Jesse, R. (2008). Mystical-type experiences occasioned by psilocybin mediate the attribution of personal meaning and spiritual significance 14 months later. *J. Psychopharmacol.* 22, 621–632. doi: 10.1177/0269881108094300

Griffiths, R. R., Richards, W. A., McCann, U., and Jesse, R. (2006). Psilocybin can occasion mystical-type experiences having substantial and sustained personal meaning and spiritual significance. *Psychopharmacology* 187, 268–283. doi: 10.1007/s00213-006-0457-5

Hadar, A., David, J., Shalit, N., Roseman, L., Gross, R., Sessa, B., et al. (2022). The psychedelic renaissance in clinical research: a Bibliometric analysis of three decades of human studies with psychedelics. *J. Psychoactive Drugs* 55, 1–10. doi: 10.1080/02791072.2021.2022254

Hartogsohn, I. (2016). Set and setting, psychedelics and the placebo response: an extra-pharmacological perspective on psychopharmacology. *J. Psychopharmacol.* 30, 1259–1267. doi: 10.1177/0269881116677852

Hartogsohn, I. (2017). Constructing drug effects: a history of set and setting. *Drug Sci. Policy Law* 3:205032451668332. doi: 10.1177/2050324516683325

Høffding, S., and Martiny, K. (2016). Framing a phenomenological interview: what, why and how. *Phenomenol. Cogn. Sci.* 15, 539–564. doi: 10.1007/s11097-015-9433-z

Høffding, S., Martiny, K., and Roepstorff, A. (2022). Can we trust the phenomenological interview? Metaphysical, epistemological, and methodological objections. *Phenomenol. Cogn. Sci.* 21, 33–51. doi: 10.1007/s11097-021-09744-z

Holze, F., Avedisian, I., Varghese, N., Eckert, A., and Liechti, M. E. (2021a). Role of the 5-HT2A receptor in acute effects of LSD on empathy and circulating oxytocin. *Front. Pharmacol.* 12:711255. doi: 10.3389/fphar.2021.711255

Holze, F., Vizeli, P., Ley, L., Müller, F., Dolder, P., Stocker, M., et al. (2021b). Acute dose-dependent effects of lysergic acid diethylamide in a double-blind placebo-controlled study in healthy subjects. *Neuropsychopharmacology* 46, 537–544. doi: 10.1038/s41386-020-00883-6

Holze, F., Vizeli, P., Müller, F., Ley, L., Duerig, R., Varghese, N., et al. (2020). Distinct acute effects of LSD, MDMA, and d-amphetamine in healthy subjects. *Neuropsychopharmacology* 45, 462–471. doi: 10.1038/s41386-019-0569-3

Hood, R. W. Jr., Ghorbani, N., Watson, P. J., Ghramaleki, A. F., Bing, M. N., Davison, H. K., et al. (2001). Dimensions of the mysticism scale: confirming the three-factor structure in the United States and Iran. *J. Sci. Study Relig.* 40, 691–705. doi: 10.1111/0021-8294.00085

Johnson, M. W., Garcia-Romeu, A., Cosimano, M. P., and Griffiths, R. R. (2014). Pilot study of the 5-HT2AR agonist psilocybin in the treatment of tobacco addiction. *J. Psychopharmacol.* 28, 983–992. doi: 10.1177/0269881114548296

Johnson, M. W., Garcia-Romeu, A., and Griffiths, R. R. (2017). Long-term follow-up of psilocybin-facilitated smoking cessation. *Am. J. Drug Alcohol Abuse* 43, 55–60. doi: 10.3109/00952990.2016.1170135

Johnson, R. B., Russo, F., and Schoonenboom, J. (2019). Causation in mixed methods research: the meeting of philosophy, science, and practice. *J. Mixed Methods Res.* 13, 143–162. doi: 10.1177/1558689817719610

Jungaberle, H., Thal, S., Zeuch, A., Rougemont-Bücking, A., von Heyden, M., Aicher, H., et al. (2018). Positive psychology in the investigation of psychedelics and entactogens: a critical review. *Neuropharmacology* 142, 179–199. doi: 10.1016/j.neuropharm.2018.06.034

Ko, K., Knight, G., Rucker, J. J., and Cleare, A. J. (2022). Psychedelics, mystical experience, and therapeutic efficacy: a systematic review. *Front. Psych.* 13:917199. doi: 10.3389/fpsyt.2022.917199

Kometer, M., and Vollenweider, F. X. (2016). "Serotonergic hallucinogen-induced visual perceptual alterations" in *Behavioral Neurobiology of Psychedelic Drugs*. eds. A. L. Halberstadt, F. X. Vollenweider and D. E. Nichols, vol. *36* (Berlin: Springer), 257–282.

Korbak, T. (2021). Computational enactivism under the free energy principle. *Synthese* 198, 2743–2763. doi: 10.1007/s11229-019-02243-4

Lawrence, D. W., Sharma, B., Griffiths, R. R., and Carhart-Harris, R. (2021). Trends in the top-cited articles on classic psychedelics. *J. Psychoactive Drugs* 53, 283–298. doi: 10.1080/02791072.2021.1874573

Lebedev, A. V., Kaelen, M., Lövdén, M., Nilsson, J., Feilding, A., Nutt, D. J., et al. (2016). LSD-induced entropic brain activity predicts subsequent personality change. *Hum. Brain Mapp.* 37, 3203–3213. doi: 10.1002/hbm.23234

Letheby, C., and Gerrans, P. (2017). Self unbound: ego dissolution in psychedelic experience. *Neurosci. Conscious.* 2017:16. doi: 10.1093/nc/nix016

Lord, L.-D., Expert, P., Atasoy, S., Roseman, L., Rapuano, K., Lambiotte, R., et al. (2019). Dynamical exploration of the repertoire of brain networks at rest is modulated by psilocybin. *NeuroImage* 199, 127–142. doi: 10.1016/j.neuroimage.2019.05.060

Ly, C., Greb, A. C., Cameron, L. P., Wong, J. M., Barragan, E. V., Wilson, P. C., et al. (2018). Psychedelics promote structural and functional neural plasticity. *Cell Rep.* 23, 3170–3182. doi: 10.1016/j.celrep.2018.05.022

MacLean, K. A., Leoutsakos, J.-M. S., Johnson, M. W., and Griffiths, R. R. (2012). Factor analysis of the mystical experience questionnaire: a study of experiences occasioned by the hallucinogen psilocybin. *J. Sci. Study Relig.* 51, 721–737. doi: 10.1111/j.1468-5906.2012.01685.x

Mason, N. L., Kuypers, K. P. C., Müller, F., Reckweg, J., Tse, D. H. Y., Toennes, S. W., et al. (2020). Me, myself, bye: regional alterations in glutamate and the experience of ego dissolution with psilocybin. *Neuropsychopharmacology* 45, 2003–2011. doi: 10.1038/s41386-020-0718-8

Maturana, H. R., and Varela, F. J. (1987). *The Tree of Knowledge: The Biological Roots of Human Understanding*. Boulder, CO: New Science Library/Shambhala Publications.

Meling, D. (2021). Knowing groundlessness: an enactive approach to a shift from cognition to non-dual awareness. *Front. Psychol.* 12:697821. doi: 10.3389/fpsyg.2021.697821

Meling, D. (2022). Knowing the knowing. Non-dual meditative practice from an enactive perspective. *Front. Psychol.* 13:778817. doi: 10.3389/fpsyg.2022.778817

Merleau-Ponty, M. (1963). *The Structure of Behavior*. Boston: Beacon Press.

Millière, R. (2017). Looking for the self: phenomenology, neurophysiology and philosophical significance of drug-induced ego dissolution. *Front. Hum. Neurosci.* 11:245. doi: 10.3389/fnhum.2017.00245

Millière, R. (2020). The varieties of selflessness. *Philosophy Mind Sci.* 1, 1–41. doi: 10.33735/phimisci.2020.I.48

Millière, R., Carhart-Harris, R. L., Roseman, L., Trautwein, F.-M., and Berkovich-Ohana, A. (2018). Psychedelics, meditation, and self-consciousness. *Front. Psychol.* 9:1475. doi: 10.3389/fpsyg.2018.01475

Müller, F., Dolder, P. C., Schmidt, A., Liechti, M. E., and Borgwardt, S. (2018). Altered network hub connectivity after acute LSD administration. *NeuroImage: Clinical* 18, 694–701. doi: 10.1016/j.nicl.2018.03.005

Müller, F., Lenz, C., Dolder, P., Lang, U., Schmidt, A., Liechti, M., et al. (2017). Increased thalamic resting-state connectivity as a core driver of LSD-induced hallucinations. *Acta Psychiatr. Scand.* 136, 648–657. doi: 10.1111/acps.12818

Muthukumaraswamy, S. D., Carhart-Harris, R. L., Moran, R. J., Brookes, M. J., Williams, T. M., Errtizoe, D., et al. (2013). Broadband cortical Desynchronization underlies the human psychedelic state. *J. Neurosci.* 33, 15171–15183. doi: 10.1523/JNEUROSCI.2063-13.2013

Muttoni, S., Ardissino, M., and John, C. (2019). Classical psychedelics for the treatment of depression and anxiety: a systematic review. *J. Affect. Disord.* 258, 11–24. doi: 10.1016/j.jad.2019.07.076

Nayak, S., and Johnson, M. W. (2021). Psychedelics and psychotherapy. *Pharmacopsychiatry* 54, 167–175. doi: 10.1055/a-1312-7297

Nichols, D. E. (2016). Psychedelics. *Pharmacol. Rev.* 68, 264–355. doi: 10.1124/pr.115.011478

Nour, M. M., and Carhart-Harris, R. L. (2017). Psychedelics and the science of self-experience. *Br. J. Psychiatry* 210, 177–179. doi: 10.1192/bjp.bp.116.194738

Pahnke, W. N. (1969). Psychedelic drugs and mystical experience. *Int. Psychiatry Clin.* 5, 149–162.

Palhano-Fontes, F., Andrade, K. C., Tofoli, L. F., Santos, A. C., Crippa, J. A. S., Hallak, J. E. C., et al. (2015). The psychedelic state induced by Ayahuasca modulates the activity and connectivity of the default mode network. *PLoS One* 10:e0118143. doi: 10.1371/journal.pone.0118143

Petranker, R., Anderson, T., and Farb, N. (2020). Psychedelic research and the need for transparency: polishing Alice's looking glass. *Front. Psychol.* 11:1681. doi: 10.3389/fpsyg.2020.01681

Petri, G., Expert, P., Turkheimer, F., Carhart-Harris, R., Nutt, D., Hellyer, P. J., et al. (2014). Homological scaffolds of brain functional networks. *J. R. Soc. Interface* 11:20140873. doi: 10.1098/rsif.2014.0873

Preller, K. H., Duerler, P., Burt, J. B., Ji, J. L., Adkinson, B., Stämpfli, P., et al. (2020). Psilocybin induces time-dependent changes in global functional connectivity. *Biol. Psychiatry* 88, 197–207. doi: 10.1016/j.biopsych.2019.12.027

Preller, K. H., Razi, A., Zeidman, P., Stämpfli, P., Friston, K. J., and Vollenweider, F. X. (2019). Effective connectivity changes in LSD-induced altered states of consciousness in humans. *Proc. Natl. Acad. Sci.* 116, 2743–2748. doi: 10.1073/pnas.1815129116

Preller, K. H., Schilbach, L., Pokorny, T., Flemming, J., Seifritz, E., and Vollenweider, F. X. (2018). Role of the 5-HT2A receptor in self-and other-initiated social interaction in lysergic acid diethylamide-induced states: a pharmacological fMRI study. *J. Neurosci.* 38, 3603–3611. doi: 10.1523/JNEUROSCI.1939-17.2018

Ramstead, M. J. D., Kirchhoff, M. D., Constant, A., and Friston, K. J. (2021). Multiscale integration: beyond internalism and externalism. *Synthese* 198, 41–70. doi: 10.1007/s11229-019-02115-x

Ravn, S., and Høffding, S. (2022). Improvisation and thinking in movement: an enactivist analysis of agency in artistic practices. *Phenomenol. Cogn. Sci.* 21, 515–537. doi: 10.1007/s11097-021-09756-9

Reiff, C. M., Richman, E. E., Nemeroff, C. B., Carpenter, L. L., Widge, A. S., Rodriguez, C. I., et al. (2020). Psychedelics and psychedelic-assisted psychotherapy. *Am. J. Psychiatr.* 177, 391–410. doi: 10.1176/appi.ajp.2019.19010035

Romeo, B., Karila, L., Martelli, C., and Benyamina, A. (2020). Efficacy of psychedelic treatments on depressive symptoms: a meta-analysis. *J. Psychopharmacol.* 34, 1079–1085. doi: 10.1177/0269881120919957

Roseman, L., Nutt, D. J., and Carhart-Harris, R. L. (2018). Quality of acute psychedelic experience predicts therapeutic efficacy of psilocybin for treatment-resistant depression. *Front. Pharmacol.* 8:974. doi: 10.3389/fphar.2017.00974

Ross, S., Bossis, A., Guss, J., Agin-Liebes, G., Malone, T., Cohen, B., et al. (2016). Rapid and sustained symptom reduction following psilocybin treatment for anxiety and depression in patients with life-threatening cancer: a randomized controlled trial. *J. Psychopharmacol.* 30, 1165–1180. doi: 10.1177/0269881116675512

Safron, A. (2020). On the varieties of conscious experiences: altered beliefs under psychedelics (ALBUS). *PsyArXiv*, Preprint. doi: 10.31234/osf.io/zqh4b

Sanders, J. W., and Zijlmans, J. (2021). Moving past mysticism in psychedelic science. *ACS Pharmacol. Transl. Sci.* 4, 1253–1255. doi: 10.1021/acsptsci.1c00097

Scheidegger, M. (2021a). Comparative phenomenology and neurobiology of meditative and psychedelic states of consciousness. Grob, C. S., and Grigsby, J., *Handbook of Medical Hallucinogens*, 395–413, New York: The Guilford Press.

Scheidegger, M. (2021b). "Psychedelic medicines: a paradigm shift from pharmacological substitution towards transformation-based psychiatry" in *Ayahuasca Healing and Science* (Berlin: Springer), 43–61.

Schiavio, A., and Høffding, S. (2015). Playing together without communicating? A pre-reflective and enactive account of joint musical performance. *Music. Sci.* 19, 366–388. doi: 10.1177/1029864915593333

Smigielski, L., Kometer, M., Scheidegger, M., Krähenmann, R., Huber, T., and Vollenweider, F. X. (2019a). Characterization and prediction of acute and sustained response to psychedelic psilocybin in a mindfulness group retreat. *Sci. Rep.* 9:14914. doi: 10.1038/s41598-019-50612-3

Smigielski, L., Scheidegger, M., Kometer, M., and Vollenweider, F. X. (2019b). Psilocybin-assisted mindfulness training modulates self-consciousness and brain default mode network connectivity with lasting effects. *NeuroImage* 196, 207–215. doi: 10.1016/j.neuroimage.2019.04.009

Stilwell, P., and Harman, K. (2019). An enactive approach to pain: beyond the biopsychosocial model. *Phenomenol. Cogn. Sci.* 18, 637–665. doi: 10.1007/s11097-019-09624-7

Tagliazucchi, E., Roseman, L., Kaelen, M., Orban, C., Muthukumaraswamy, S. D., Murphy, K., et al. (2016). Increased global functional connectivity correlates with LSD-induced ego dissolution. *Curr. Biol.* 26, 1043–1050. doi: 10.1016/j.cub.2016.02.010

Thompson, E. (2007). *Mind in Life: Biology, Phenomenology, and the Sciences of Mind*. Belknap Press of Harvard University Press: Cambridge, MA.

Thompson, E. (2009). "Contemplative neuroscience as an approach to volitional consciousness" in *Downward Causation and the Neurobiology of Free Will* (Berlin: Springer), 187–197.

Thompson, E., and Stapleton, M. (2009). Making sense of sense-making: reflections on enactive and extended mind theories. *Topoi* 28, 23–30. doi: 10.1007/s11245-008-9043-2

Thompson, E., and Varela, F. J. (2001). Radical embodiment: neural dynamics and consciousness. *Trends Cogn. Sci.* 5, 418–425. doi: 10.1016/S1364-6613(00)01750-2

Timmermann, C., Spriggs, M. J., Kaelen, M., Leech, R., Nutt, D. J., Moran, R. J., et al. (2018). LSD modulates effective connectivity and neural adaptation mechanisms in an auditory oddball paradigm. *Neuropharmacology* 142, 251–262. doi: 10.1016/j.neuropharm.2017.10.039

Umbricht, D., Vollenweider, F. X., Schmid, L., Grübel, C., Skrabo, A., Huber, T., et al. (2003). Effects of the 5-HT2A agonist psilocybin on mismatch negativity generation and AX-continuous performance task: implications for the neuropharmacology of cognitive deficits in schizophrenia. *Neuropsychopharmacology* 28, 170–181. doi: 10.1038/sj.npp.1300005

Valenzuela-Moguillansky, C., and Demšar, E. (2022). Toward a science of experience: outlining some challenges and future directions. *Adapt. Behav.* 105971232210847 :105971232210847. doi: 10.1177/10597123221084739

van Elk, M., and Yaden, D. B. (2022). Pharmacological, neural, and psychological mechanisms underlying psychedelics: a critical review. *Neurosci. Biobehav. Rev.* 140:104793. doi: 10.1016/j.neubiorev.2022.104793

Varela, F. J. (1997). Patterns of life: intertwining identity and cognition. *Brain Cogn.* 34, 72–87. doi: 10.1006/brcg.1997.0907

Varela, F. J., Thompson, E., and Rosch, E. (2017). *The Embodied Mind, Revised Edition: Cognitive Science and Human Experience*, Cambridge, MA: MIT press.

Vollenweider, F. X., and Geyer, M. A. (2001). A systems model of altered consciousness: integrating natural and drug-induced psychoses. *Brain Res. Bull.* 56, 495–507. doi: 10.1016/S0361-9230(01)00646-3

Vollenweider, F. X., and Kometer, M. (2010). The neurobiology of psychedelic drugs: implications for the treatment of mood disorders. *Nat. Rev. Neurosci.* 11, 642–651. doi: 10.1038/nrn2884

Vollenweider, F. X., and Preller, K. H. (2020). Psychedelic drugs: neurobiology and potential for treatment of psychiatric disorders. *Nat. Rev. Neurosci.* 21, 611–624. doi: 10.1038/s41583-020-0367-2

Vollenweider, F. X., and Smallridge, J. W. (2022). Classic psychedelic drugs: update on biological mechanisms. *Pharmacopsychiatry* 55, 121–138. doi: 10.1055/a-1721-2914

Wiese, W., and Friston, K. J. (2021). The neural correlates of consciousness under the free energy principle: from computational correlates to computational explanation. *Philosophy Mind Sci.* 2:81. doi: 10.33735/phimisci.2021.81

Yaden, D. B., and Griffiths, R. R. (2021). The subjective effects of psychedelics are necessary for their enduring therapeutic effects. *ACS Pharmacol. Transl. Sci.* 4, 568–572. doi: 10.1021/acsptsci.0c00194

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Commentary: Not in the drug, not in the brain: causality in psychedelic experiences from an enactive perspective

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Introduction

I welcome with great enthusiasm Meling and Scheidegger's (2023; henceforth "M&S") timely contribution to advance an enactive approach to psychedelic therapy, especially to the complex causality involved. Their two main research questions concerned: (i) the causal interaction between the psychedelic molecule and brain activity; and (ii) the causal interaction between brain activity and the psychedelic experience. While I largely agree with and celebrate much of what is proposed by M&S, especially their employment of key enactive concepts to advance our understanding of the first research question, in the following, I will present some worries regarding their answers to the second. Although I agree that there is probably a two-way reciprocal relationship between neural activity and experience, I have several points of contention regarding M&S's proposal. My hope is to stimulate discussion on M&S's important contribution, and to help advance a much-needed enactive science of psychedelics.

Brain activity and psychedelic experience: dynamic co-emergence and circular causality

A concept that figures prominently in M&S's account of the relationship between brain activity and the psychedelic experience is *dynamic co-emergence* (henceforth "DCE"). A first worry is that DCE applies to the relationship between autonomous wholes and their parts (Thompson, 2007), but it is not clear that this mereological relationship holds for consciousness and brain activity. Arguably, the *parts* of a given psychedelic experience taken as a *whole* during certain time intervals (e.g., the experience of being dissolved into a cosmic

unity), are *phenomenal parts* (e.g., feeling united to something greater, one's sense of self being disrupted, accompanying visual images, sounds, bodily sensations, thoughts, etc.), rather than local neural activity. Additionally, regarding the latter (i.e., *neural parts*), the corresponding whole is more plausibly a *neural whole*, i.e., a global brain activity such as interhemispheric synchronic gamma oscillations, rather than the experience itself.

A second issue is that M&S's treatment of DCE suggests that it is equivalent to circular causality, characterizing both in terms of global-to-local and local-to-global *determination*. However, they are related but distinct notions. While DCE is meant to describe the reciprocal, *constitutive* relationship between parts and wholes in autonomous systems (Thompson, 2007), circular causality characterizes the reciprocal but *causal* relationship between them (Haken, 1983; Kelso, 2021). While the difference between constitution and causation is a matter of ongoing debate (Aizawa, 2014; Kirchhoff, 2015), at least for a matter of theoretical clarity and to guide future research, they should be more clearly differentiated.

Third, I worry that the notion of DCE is currently too obscure to incentivize further psychedelic research from an enactive perspective. In contrast to circular causality, it is not obvious what DCE really amounts to. Thompson writes that "in an autonomous system… parts do not exist in advance, prior to the whole, as independent entities… part and whole co-emerge and mutually specify each other" (Thompson, 2007, p. 65). Of course, there is a sense in which this is certainly the case: a defining feature of *autopoietic* autonomous systems (e.g., a cell) is that its components are produced by the network of mutually enabling processes that constitute the system, and where global topological constraints play a key role (Maturana and Varela, 1980). Hence, there is a sense in which a protein molecule produced inside the cell may be said to have "emerged from the whole" or be "specified by the whole". However, when applied to a brain network, it is far from obvious how to make sense of DCE. While it seems very plausible that a neuron *behaves* differently depending on whether it is part of system A rather than system B (i.e., an instance of global-to-local causality), it seems less plausible to hold that a neuron emerges from or is constitutively specified by the neural system it belongs to. Intuitively, a neuron remains being a neuron even if it were hypothetically isolated before being incorporated into, or after being separated from, a larger neural system, as long as it can remain potentially functional and structurally intact.

Fourth, in order to advance an enactive psychedelic science, circular causality should be formalized to make it a scientifically useful tool. To the best of my knowledge, the mathematical, dynamical approaches to circular causality that are most close to the enactive approach are the ones from Haken (1983) and Kelso (2021). Nonetheless, close attention should also be paid to formal accounts of causal emergence and downward causation from complexity science and information theory (Hoel et al., 2016; Mediano et al., 2022). Without an enactive, formal account of circular causality in psychedelic experience, M&S hardly improve the pluralistic view of causation and provide an "account of how biochemical, neural, and experiential processes affect each other through local-to-global and global-to-local determination" (Meling and Scheidegger, 2023, p. 9).

Fifth, as a relation between parts/local and wholes/global activity, in contrast to what is suggested by M&S, circular causality would be more straightforwardly involved in the relationship between the psychedelic molecule and brain activity, rather than between brain activity and the psychedelic experience. In the absence of sound reasons to consider the relationship between brain activity and conscious experiences as mereological, alternative ways to understand their causal relation should be looked for.

Finally, instead of focusing mostly on "psychedelic experiential cognitive acts" (Meling and Scheidegger, 2023, p. 9) involved in mystical-type experiences, future enactive research may concentrate also on the dynamics of the *affective* experience under psychedelics and its causal influence on the associated emotional-somatic changes. Experiencing an *emotional breakthrough* in the psychedelic session has also been validated as a strong mediator of subsequent mental health benefits (Roseman et al., 2019). Hence, an important theoretical foundation for an enactive psychedelic science would be the enactive approach to affectivity (Varela and Depraz, 2005; Colombetti, 2014). Importantly, the affective experiential dimension would have its primary locus in what Thompson and Varela (2001) called the *organismic regulation* cycle, and therefore, psychedelic-induced changes in the subject's primordial feeling of being alive or *continuous organismic sentience* (Cea and Martínez-Pernía, 2023) may have a key causal explanatory role to play.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

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Conflict of interest

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References

Aizawa, K. (2014). The enactivist revolution. *AVANT Pismo Awangardy Filozoficzno-Naukowej* 5, 19–42. doi: 10.26913/50202014.0109.0002

Cea, I., and Martínez-Pernía, D. (2023). Continuous organismic sentience as the integration of core affect and vitality. *J. Conscious. Stud.* 30, 7–33. doi: 10.53765/20512201.30.3.007

Colombetti, G. (2014). *The Feeling Body: Affective Science Meets the Enactive Mind*. Cambridge: MIT Press.

Haken, H. (1983). *Synergetics: An Introduction, 3rd Edn*. Berlin: Springer-Verlag.

Hoel, E. P., Albantakis, L., Marshall, W., and Tononi, G. (2016). Can the macro beat the micro? Integrated information across spatiotemporal scales. *Neurosci. Conscious.* 2016, niw012. doi: 10.1093/nc/niw012

Kelso, J. A. S. (2021). The Haken–Kelso–Bunz (HKB) model: from matter to movement to mind. *Biol. Cybernet.* 115, 305–322. doi: 10.1007/s00422-021-00890-w

Kirchhoff, M. D. (2015). Extended cognition and the causal-constitutive fallacy: in search for a diachronic and dynamical conception of constitution. *Philos. Phenomenol. Res.* 90, 320–360. doi: 10.1111/phpr.12039

Maturana, H., and Varela, F. (1980). *Autopoiesis and Cognition: The Realization of the Living*. Boston, MA: D. Reidel Publishing Company.

Mediano, P. A. M., Rosas, F. E., Luppi, A. I., Jensen, H. J., Seth, A. K., Barrett, A. B., et al. (2022). Greater than the parts: a review of the information decomposition approach to causal emergence. *Philos. Trans. Royal Soc. A* 380, 20210246. doi: 10.1098/rsta.2021.0246

Meling, D., and Scheidegger, M. (2023). Not in the drug, not in the brain: causality in psychedelic experiences from an enactive perspective. *Front. Psychol.* 14, 1100058. doi: 10.3389/fpsyg.2023.1100058

Roseman, L., Haijen, E., Idialu-Ikato, K., Kaelen, M., Watts, R., and Carhart-Harris, R. (2019). Emotional breakthrough and psychedelics: validation of the Emotional Breakthrough Inventory. *J. Psychopharmacol.* 33, 1076–1087. doi: 10.1177/0269881119855974

Thompson, E. (2007). *Mind in Life: Biology, Phenomenology, and the Sciences of Mind*. Cambridge, MA: Harvard University Press.

Thompson, E., and Varela, F. (2001). Radical embodiment: neural dynamics and consciousness. *Trends Cogn. Sci.* 5, 418–425. doi: 10.1016/S1364-6613(00)01750-2

Varela, F. J., and Depraz, N. (2005). At the source of time: valence and the constitutional dynamics of affect. *J. Conscious. Stud.* 12, 61–81.

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Cognitive liberty and the psychedelic humanities

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This research aims to conceptualize cognitive liberty and the psychedelic humanities by examining their constitutive elements. The importance of this study lies in the fact that it is widespread to talk about psychedelic science nowadays, but there is a significant gap in the research. For instance, the role and importance of the humanities need to be acknowledged. Regarding cognitive liberty, this research considers that people have the right to use or refrain from using emerging neurotechnologies and psychedelics. People's freedom of choice *vis-à-vis* these technologies must be protected, in particular with regard to coercive and non-consensual uses. Firstly, an analysis will be carried out of the constitutive elements of cognitive liberty, especially within the context of a philosophical approach. Secondly, this research will address some arguments for the philosophical uses of psychedelics. Finally, this paper will discuss the scope and significance of psychedelic humanities as a vein of research. Cognitive liberty is a crucial concept for the psychedelic humanities, likely to broaden our understanding of consciousness studies and reflect on ethical and social issues related to scientific research. Cognitive liberty is an update of freedom of thought according to the challenges of the 21st century. In addition, this paper will highlight the possible philosophical uses of psychedelic substances to broaden the research scope since, at present, the ritual and therapeutic uses of psychedelics have the most significant legitimacy. Recognition of philosophical uses demonstrates that learning from non-clinical uses of psychedelics is possible. The psychedelic humanities represent an underexplored avenue of research that can contribute to a better understanding of the interplay between science and culture.

KEYWORDS

psychedelics, humanities, cognitive liberty, philosophy, history, anthropology

1. Introduction

The war on drugs and the associated prohibition policies have undermined freedom of thought for several decades, not only individual freedom but also the cognitive liberty of research communities and institutions worldwide. The war on drugs "is not a war on pills, powder, plants, and potions, it is a war on mental states — a war on consciousness itself — how much, what sort we are permitted to experience, and who gets to control it" (Boire, 1999, 6). Furthermore, the war on drugs has encouraged prohibitionist policies that have disproportionately affected some regions and communities more than others. Recent decriminalization efforts with cannabis and psychedelics have begun challenging this logic, revealing other consequences of historical prohibitions, i.e., deliberate misinformation, propaganda, racialization and massive incarceration. The war on drugs has interrupted scientific progress, while criminal activities related to weapons trafficking, substance adulteration, struggles for territory, and strengthening of the black market have given rise to organized crime networks and undermined cognitive liberty and scientific research. In fact, it can be argued that

the war on drugs suits two sectors more than anything else: "the drug traffickers because the illicit trade is at the heart of their business and their vast profits, and the governments, especially the U.S., because with this war, they justify massive budgets, expansion of security forces, and 'legitimize' the control and repression of their people inside and outside their territory" (Brooks, 2023).

This research highlights the crucial role of the humanities and social sciences (philosophy, history, anthropology, literature, and women's studies) in promoting a transdisciplinary approach and a more contextualized understanding of psychedelic studies. For instance, analyzing therapeutic and philosophical uses, decolonizing efforts, drug tourism, and harm reduction against the backdrop of studies in cognitive liberty. Fortunately, since the beginning of the 21st century, this prohibition has started to change gradually. The research about psychedelics such as Dimethyltryptamine (DMT), Lysergic Acid Diethylamide (LSD), Methylenedioxide Methamphetamine (MDMA), psilocybin, and mescaline has increased under the umbrella of the psychedelic renaissance (Sessa, 2012, 159; Letheby, 2021, 8–13; Gomez-Escolar, 2022). At the same time, some legislation, primarily related to cannabis and psychedelics, has changed in countries such as the Netherlands, Australia, Canada, USA, Portugal, Uruguay, Perú, Brazil, Colombia and Mexico, opening new avenues of research, as well as stimulating older cultural networks of knowledge concerning drug use and abuse; for example, psychedelics are not free from risks. Due to these risks, examining the evidence provided by scientific research is necessary to achieve a more balanced and informed perspective, avoiding biases as much as possible.

To begin this analysis, it is necessary to highlight the primary uses of psychedelics, which the scientific literature recognizes mainly: (1) therapeutic uses, (2) religious and spiritual uses, (3) creative uses, and (4) hedonistic or adult uses. This research clarifies the scope of (5) philosophical uses within the framework of psychedelic humanities. A philosophical approach considers the psychedelic experience as a source of knowledge, not only a series of hallucinations. What kind of knowledge? This paper is an attempt to explain this intricate matter clearly.

The rise of neuroscience and the increase of technologies capable of affecting or monitoring cognition, such as functional magnetic resonance imaging (fMRI), transcranial magnetic stimulation (TMS), brain implants, brain-machine interfaces, or the implementation of biochemistry and neuropsychopharmacology to enhance or modify human cognition caused new philosophical dilemmas. This development of neuroscience requires an update of our conception of freedom of thought to face that transformation successfully. In this context, some scholars considered recognizing the right of cognitive liberty as the first step to avoiding mental manipulation (Sententia, 2004, 221–228; Ienca, 2017, 10–11; Weissenbacher, 2018, 1–11). Cognitive liberty is every person's fundamental right to think independently, use the full spectrum of his or her mind, and have autonomy over their brain chemistry. This fundamental right implies some ethical issues which are necessary to consider. For example: "Cognitive liberty concerns the ethics and legality of safeguarding one's own thought processes, and by necessity, one's electrochemical brain states. The individual, not corporate and government interests, should have sole jurisdiction over the control and/or modulation of his and her brain states and mental processes" (Sententia, 2004, 223).

Implementing some neurotechnologies mentioned above gave rise to new branches of knowledge, such as neurotheology, neuromarketing, neuropolitics, and neuromodulation. They are directly related to freedom of choice and the transformation of beliefs. The emergence of this power challenged our previous frameworks on mental autonomy, which require an update to guarantee the right of cognitive liberty under the premises of free, prior, and informed consent. An analytical approach regarding this fundamental right shows two related principles: "The first is that persons have the right to use or refrain from using emerging neurotechnologies. The second one is that people deserve protection from such technologies coercive and unconsented use. A person has the right of self-determination, defined as the right to change his or her mind and choose how change occurs" (Weissenbacher, 2018, 8). It is possible to appreciate that freedom of choice and self-determination are two constitutive elements of cognitive liberty.

Cognitive liberty involves ethical issues, such as freedom of thought, absence of interference, mental autonomy, responsibility, and human rights. For example, cultural, indigenous, women's, and health rights (Fletcher, 2012, 225–242). Nevertheless, what exactly is meant by the term' cognitive liberty in the context of the psychedelic humanities? Law lecturer and cognitive liberty advocate Charlotte Walsh argues: "Cognitive liberty is in one sense synonymous with freedom of thought, yet more precisely evokes the idea that this should be read to acknowledge the fact that individuals should have the right to autonomous self-determination over their own brain chemistry, a right that is currently infringed by the prohibition of psychedelics" (Walsh, 2016, 83). This definition sheds light on the other two constitutive elements of cognitive liberty: freedom of thought and autonomy.

The role of the humanities is critically important to understand better some social implications embedded in the therapeutic uses of psychedelics, but also to reflect from a cross-cultural perspective on oriented psychedelic experiences, i.e., psychedelics can participate in a significant revaluation of liberty. But also, to critically analyze the medicalization attached to psychedelic capitalism (Noorani, 2019, 34–39). New scholarship in psychedelic studies is beginning to recognize the philosophical and therapeutic uses of psychedelics and their consequences in a 21st-century context (Letheby, 2021, 62–80) and to more fully recognize the power relations and social issues embedded in the use of psychedelics (Hauskeller et al., 2022, 107–132). Based on this scholarship, this paper aims to analyze the scope of cognitive liberty within the context of psychedelic humanities.

This article understands by the psychedelic humanities, for instance, the philosophy of psychedelics, the history of medicine, neuroethics, and medical anthropology (Roberts, 2017, 102–105). This paper builds on this scholarship specifically by interrogating the philosophical framework grounded in the enhancement of cognitive liberty and the potential transformations of the psychedelic experience because "several influential figures saw psychedelics and their power to radically question ontological certainties as having an inherently revolutionary potential" (Elcock, 2013, 296). Moreover, some authors consider it possible to discuss the emancipatory uses of psychedelics (Hendlin, 2022). For instance: "Peyotism is an attempt by American Indians not only to cope with contemporary social and economic conditions, but also to master and ultimately to transform them" (Wagner, 1975, 204). An interdisciplinary approach is required to face the possible objections and misunderstandings related to the different uses of psychedelics and clarify their transformative character in different cultures and social classes. Oriented psychedelic experiences

can contribute to overcoming cultural biases and building different narratives to achieve a shift within the hegemonic public policies.

2. Constitutive elements of cognitive liberty

The relevance of this research lies in analyzing a concept (liberty) that is considered the foundation of Ethics and Politics. This section aims to display a brief overview of the constitutive elements of cognitive liberty. An analytical approach is crucial to a better understanding of their contemporary significance for the psychedelic humanities, mainly because philosophy and psychedelics help expand consciousness (Sjöstedt-Hughes, 2016). As is possible to see, there is a contemporary approach regarding cognitive liberty and mental autonomy, which has been taken up in psychedelic studies during the 21st century by some scholars such as Boire (1999), Walsh (2010, 2014, 2016), and Davis (2022).

The social relevance of cognitive liberty is not purely historical or speculative. In this regard, it is very significant to recognize that some sensitive political issues, such as the growth of far-right movements and hate speech (Langlitz, 2020a; Pace and Devenot, 2021), as well as the rise of populism and migration, have challenged the social significance of liberty in the contemporary world and psychedelic studies. Furthermore, the self-contradictions and ambiguities embedded in the concept of liberty –mainly implemented as a domination tool- have undermined its legitimacy due to the failures and injustices caused by neo-liberal and technocratic regimes. For example, libertarianism reshaped the concept of liberal autonomy into "consumer sovereignty" (Davis, 2022, 92), assuming that a free-market society must prioritize medicalization, the interests of pharmaceutical companies, the opening of new markets, the rise of psychedelic CEOS and the wishes and expectations of consumers (Fernández, 2022). One of the side effects of this degraded consumerist view of autonomy is the banalization of the psychedelic experience, but also the paradoxical use of liberty as a mechanism of control (González Romero, 2022).

To overcome some paradoxes and social contradictions attached to the psychedelic renaissance, it is necessary to reflect critically on liberty and update its meaning to the present needs. For instance, in the realm of psychedelic humanities, the significance of cognitive liberty is related to consciousness. "The right to control one's own consciousness is the quintessence of freedom. If freedom is to mean anything, it must mean that each person has an inviolable right to think for him or herself. It must mean, at a minimum, that each person is free to direct one's own consciousness, underlying mental processes, beliefs, opinions, and worldview" (Boire, 1999, 4). It implies the right to use psychedelics to enhance cognition and strengthen self-reflection and creativity. Cognitive liberty can contribute to consciousness studies by challenging the attempts to control it embedded in prohibitionist policies and within the commodification encouraged by psychedelic capitalism. Furthermore, the scope of cognitive liberty involves challenging topics such as the forced administration of psychotropics by states, endocrine disruptor exposure, euthanasia, and the right to die.

In other words, in the field of psychedelic humanities, the meaning of cognitive liberty is the right of everyone to think independently and autonomously—the use of the full power of the mind and the engagement in multiple ways of thought. Mental autonomy implies the right to self-determine one's own brain chemistry. The connection between cognitive liberty and psychedelics could be summarized using the well-known frameworks of negative liberty developed by Mill (1982) and positive liberty coined by Berlin (2002/1969, 166). Regarding cognitive liberty, it is possible to talk about: (1) the right to refuse, i.e., absence of interference or negative liberty, and (2) the right to use, i.e., the enhancement of cognition or positive liberty. This neuroenhancement is one of the critical traits advocated by psychedelic activism. A popular version of this topic was stated by Timothy Leary some decades before the term cognitive liberty was coined. The Two Commandments for the Molecular Age states: "I.-Thou shalt not alter the consciousness of thy fellow man, and II.-Thou shalt not prevent thy fellow man from altering his own consciousness" (Leary, 1998, 95).

Summarizing, cognitive liberty involves at least four philosophical meanings: (1) freedom of choice, (2) freedom of religion, (3) self-determination, and (4) freedom of thought. Each one has specific implications in the field of psychedelic humanities, which is necessary to explain to avoid misunderstandings and hasty generalizations. So, prohibition policies undermine all of them, not only in a theoretical way but also represent a lack of recognition of fundamental human rights. The first three philosophical meanings will be examined quickly in what follows, and the last one in the section devoted to the philosophy of psychedelics.

2.1. Freedom of choice (*Liberum arbitrium*)

Freedom of choice goes beyond the therapeutic uses of psychedelics. Also, it involves the development of human faculties, the enhancement of cognitive skills, the achievement of psychological insights, and gender issues, i.e., choosing one's gender or identity. The choices mainly constitute the personality, and interfering with these choices thus threatens the free development of personality. In the philosophical realm, freedom of choice expresses itself through the figure of dilemma, i.e., the possibility of choosing between A or B. Every dilemma has a lot of emotional, rational, and social implications, and the role of psychedelic humanities, especially philosophy, is to support individual and collective choices with truthful information and accurate frameworks. Our daily life is full of dilemmas, so it is crucial to consider what is beneficial or not for our body and mind. Concerning the psychedelic realm, the following statement is helpful to clarify the scope of some dilemmas involved with freedom of choice:

> From the skin inward is my jurisdiction, is it not? I choose what may or may not cross that border. Here I am the Customs Agent. I am the Coast Guard. I am the sole legal and spiritual Government of this territory, and only the laws I choose to enact within myself are applicable […] What I think? Where I focus my awareness? *What biochemical reactions I choose to cause within the territorial boundaries of my own skin are not subject to the beliefs, morals, laws, or preferences of any other person! I am a sovereign state*, and I feel that my borders are more sacred than the politically drawn boundaries of any country (Shulgin and Shulgin, 1991, pp. 449–450).

This quote clearly shows the scope of freedom of choice and human rights within the psychedelic experience and sheds light on the links between self-consciousness and self-determination. Firstly, this statement represents a clear example of individual freedom regarding prohibitionist policy. It represents freedom of choice concerning which psychoactive substances will cross the border of body and consciousness, but also freedom of choice regarding which norms or laws (*nomoi*) are applicable (Davis, 2022). Secondly, this statement addresses the concept of individual sovereignty, tracing an analogy between the borders of individual consciousness and a country's borders. Freedom of choice and self-determination usually come together, not only due to the psychedelic experience but also related to bodily autonomy. For example, following the renewed interest in sexual violence, the curtailment of abortion rights in the United States has come with a revived interest in the political necessity of bodily autonomy familiar from the second wave of feminism (Hewitt, 2019; Davis, 2022, 91).

Freedom of choice and bodily autonomy are constitutive elements of cognitive liberty. Both have a crucial significance in developing psychedelic humanities in different branches, such as choosing the identity, appropriate psychedelic assisted therapy and implementing public policies based on harm reduction and the management of pleasure, which is an overlooked issue. As it is possible to appreciate, prohibition policies undermine a wide array of civil liberties, for example, the free development of personality, the right to health, and indigenous rights. Concerning the interplay between prohibition and human rights policies, Walsh (2010, 2014, 2016) examined some conflicts and paradoxes within the freedom of choice. Through a detailed analysis of some concrete examples and tensions between the European Convention on Human Rights (ECHR), especially article 9, and the Misuse of Drugs Act (1971), which drives drug policy in the UK. With this framework in mind, she addressed three complex issues: (1) self-medication, (2) freedom of religion, and (3) the right to explore our self-consciousness.

Self-medication requires an examination because it focuses mainly on the case of an individual who decides to take one drug placed on Schedule 1, perhaps without a medical prescription. This example only represents one side of the coin. To complement the analysis is necessary to consider another hypothesis, i.e., when one of these drugs (mainly a psychedelic) could be helpful to improve the health of this individual. However, if the current prohibition denies the medical prescription or the Law denies the treatment, the right to health is undermined by prohibitionist policies. However, self-medication is attached to a complex phenomenon such as self-harm. This fact is a good antidote against a naïve approach, which does not recognize the risks of medicalization.

The right to health is a core feature that must be considered in decriminalization efforts. Suppose a State cannot guarantee the right to health of its citizens due to the prohibitionist policies. In that case, it is necessary to promote a revision of the Law, to overcome the paradox of a failed State, which cannot guarantee the right to health and ensure freedom of choice. The right to health with psychedelic-assisted therapy (PAT) must have a universal character. However, this right to use psychedelics is usually denied with weakly grounded objections, which overshadows the core argument. Walsh (2010, 428) argued that the therapeutic use of psychedelics: "can be interfered with where 'necessary' in a democratic society in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of morals." A philosophical approach must be aware of these *ad hoc* objections to analyze them and propose solid counterarguments grounded in a culturally specific context.

In PAT, freedom of choice could be guaranteed when in the hypothetical situation of a clinical trial, a patient with depression can decide between treatment with anxiolytics (escitalopram) or psilocybin (Carhart-Harris et al., 2021, 1,403). Another clear example is when a patient with a terminal illness, such as cancer, decides to choose cannabis to relieve pain and psilocybin to face better the end of life; in this case, their rights must be guaranteed by the State and healthcare institutions (private or public). Furthermore, the right to die with dignity for patients with a terminal illness must be recognized and guaranteed. Another sensitive example in the USA is the right of war veterans with post-traumatic stress disorder (PTSD) to receive psychedelic-assisted therapy with MDMA or psilocybin. The goal is to relieve the psychological damage due to emotional traumas caused by war because the suicide rate in veterans is higher than that of civilians (Fox, 2018; Herrington, 2022). Moreover, the suicide rate among Native American teenagers is also higher than the national average in the USA (Calabrese, 2013).

2.2. Freedom of religion

Ritual and spiritual uses of psychedelics are at the core of the so-called psychedelic renaissance, mainly in areas such as anthropology and the history of religions. Both disciplines have contributed to a better understanding of ritual uses in ancient cultures, the spirituality of indigenous peoples, and new-age reinterpretations. Freedom of religion is one of the critical features of the so-called psychedelic research revival, mainly due to the implementation in the USA of the Religious Freedom Restoration Act (RFRA). This amendment has been very influential because it allows some exemptions from the general rule and mainly because it represents a chink in the armor of prohibition policies (Walsh, 2014). Very well-known examples in the USA are the Native American Church (NAC), some ayahuasca churches such as Uniao do Vegetal, Santo Daime church, and the Rastafari religion.

Establishing and recognizing NAC was arduous; even inside Native American peoples, it is possible to find histories of opposition and anti-peyotist movements. For example, "among the Navajos, the main barrier was not the Bureau of Indians affairs but rather the Navajo Tribal Council and anti-Peyotist Navajos acting independently. After the arrests of Peyotists priests in 1938, the Tribal Council met to discuss peyote in 1940" (Calabrese, 2013, 87). Also, the mass media played a significant role in the stigmatization and criminalization of NAC. There were many legal efforts to outlaw it, and many states passed laws against peyote during the first half of the 20th century. "However, thanks largely to its incorporation as a church (which began in Oklahoma in 1918), NAC survived and has struggled to defend the religious freedom of its members" (Calabrese, 2013, 89).

Nevertheless, the case that caused a dramatic shift within the cultural paradigm clashes was the *Employment Division of Oregon* v. Smith trial, 494 U.S. 872 (1990). Alfred Smith, a member of the Klamath Tribe, who was removed from his family and placed in a boarding school at eight years old, was employed by a substance abuse treatment facility in Rosemburg, Oregon. Paradoxically the director

of the facility fired him because Alfred Smith was a member of the NAC and attended a peyote ceremony. Alfred Smith and Galen Black, who also was fired because he attended the ceremony, claimed unemployment compensation. The case reached the U.S. Supreme Court, which made its decision, about Native Americans without take into account the First Amendment. If peyote is illegal and Oregon could send Smith and Black to prison for using it, it could surely refuse to pay them unemployment compensation (Calabrese, 2013, 91).

In 1990 Anthonin Scalia ruled that exercising religious freedom contained in the First Amendment should allow law enforcement because religious pluralism was a "luxury" that could not be permitted. For example, an individual's religious beliefs did not exempt anyone from compliance with a law prohibiting state-regulated conduct. With that ruling, the NAC lost the right to use peyote. This trial generated significant controversy and exposed a paradox since one of the reasons for the arrival of settlers in the USA was religious freedom. Paradoxically it is one of the country's foundations, and that ruling took away the religious freedom of the Native Americans. The Supreme Court ruling triggered a movement to defend this civil right, as leaders of other religious organizations saw a threat to this right enshrined in the First Amendment. This movement led to the implementation of the Religious Freedom Restoration Act (RFRA). However, nowadays, peyote is considered Schedule I within the UN Convention on Psychotropic Substances (1971), i.e., without any therapeutic value. However, on the other hand, NAC considers it has therapeutic properties. Both sides of the coin clearly show one of the core traits concerning the cultural paradigm clash mentioned above.

Regarding the Global South, in Mexico, there is a legal exemption that allows the ritual and spiritual uses of psychedelics (mainly psilocybin mushrooms and peyote) among the indigenous peoples. At the beginning of 1940, just in the middle of World War II, the Mexican government decriminalized all drugs by publishing the *Reglamento Federal de Toxicomanía*s (Federal Drug Addiction Regulations). However, this initiative was ephemeral due to the international treaties signed and the pressure of Harry J. Anslinger (1892–1975), the first Commissioner of the Federal Bureau of Narcotics. The legal framework in Mexico does not lie mainly on the right of freedom of religion; instead, the legal framework is closer to the Customary Law System, a mild version of legal pluralism. Nevertheless, some ambiguity concerning legal frameworks for psychedelics prevailed in Mexican society. For example, "even though signing of the Vienna Convention on Psychotropic Substances in 1971, the Mexican government agreed to tolerate the ritual use of these substances by indigenous peoples." (Dawson, 2015, 127). However, the Mexican government never passed legislation to this effect, and Mexican police regularly persecuted indigenous peyotists during these years.

Likewise, in the international arena, indigenous peoples usually face a lack of acknowledgment of their rights. Usually, freedom of religion is not guaranteed, and indigenous communities experience harassment by police forces, arbitrary imprisonment of their leaders and ritual specialists, territory displacements, and cultural extractivism. Some paradigmatic examples are the coca leaf among indigenous peoples in Perú and Colombia (Metaal, 2014, 25–45) or the ayahuasca ceremonies among the indigenous peoples from Brazil (Feeney and Labate, 2014, 111–130). Also, the hegemony of colonial views, which considers indigenous spirituality idolatry, witchcraft, or superstition, promotes intolerance and undermines religious freedom.

In addition to the examples mentioned above is necessary to argue that freedom of religion is in the Universal Declaration of Human Rights, the European Charter of Human Rights, and the United Nations Declaration of the Rights of Indigenous Peoples. In other words, freedom of religion is well established within International Law, but the controversies begin when psychedelics are considered sacraments. There is no standard criterion, and many court cases can be labeled as religious prosecutions. For instance, in the USA, even though the First Amendment guarantees freedom of religion, and the Supreme Court has cautioned lower courts, the reality is that:

> The Supreme Court's amorphous definition of religion has not resulted in many successful defenses. Courts have employed various techniques to deny freedom of religion defenses, including simply concluding that a defendant's claim to a religious use of illicit drugs is not sincere or credible. Under this latter approach, the court assumes that a religion incorporating drug use exists but then concludes the defendant does not truly believe it. With new and non-traditional religions, this technique has proven very effective (Brown, 2014, 49).

To examine the constitutive elements of cognitive liberty, it is also necessary to reflect further on freedom of religion, but from the other side of the coin. For example, many significant cases deserve attention, as mentioned above, but also because it is essential to address some frequently overlooked topics, especially regarding atheism, agnosticism, and skepticism. In this area, the psychedelic humanities are very useful in going beyond the cliches to challenge the discrimination of these minority groups, even inside the psychedelic community. For instance, only a few scholars (Letheby, 2022, 69–92; Glausser, 2021, 614; Walsh, 2010, 432–434) have considered atheism, but before addressing this intricate matter is essential to analyze the basic constitutive elements of self-determination.

2.3. Self-determination

Liberty has had its foundations since Ancient Greek Philosophy through the concept of *eleutheria*, translated as freedom. However, a careful analysis shed light on other constitutive elements; such terms include *autonomia* and *autarkeia* (self-sufficiency), but also *parrhésia* (freedom of speech), which designated above all relations between freedom and self-preservation and self-determination (Raaflaub, 2013, 8). Analyzing the links between self-determination and autonomy within the context of psychedelic assisted therapy requires further explanations. For instance, it is necessary to highlight how autonomy emerged as a political concept in Greece but evolved as one of the foundations of morals due to the internalization of its meaning by the rational consciousness, i.e., through the development of freedom of thought.

This "internalization" of autonomy by the rational consciousness is crucial to understanding its contemporary meaning and some paradoxes attached to it. Davis (2022, 87) provides a historical approach highlighting how autonomy emerged in Greece, which was associated with the citizen's possibility to determine their *nomoi*, i.e., their constitution, way of life, and policies of their communities. Self-determination has also been considered a civil right, especially in the realm of International Law, and it involves sovereignty. In the political

field, it is possible to reflect on collective self-determination. However, concerning psychedelic therapy, it is crucial to address individual self-determination because it relates to the configuration of identity and personality. Concerning its constitutive elements, "the concept of self-determination can be deployed in two ways: against other people who exercise alien determination over an individual, who thereby throws off the yoke of domination, or *vis-à-vis* non-human forces to expand one's scope of action. The first instance shall be referred to here as *political self-determination* and the second as *technical self-determination*" (Fisch, 2015, 21).

Individual self-determination is crucial for cognitive liberty because it relates to mental autonomy. For example, in the field of psychedelic humanities, its meaning could be explained as the absence of interference, i.e., the right to keep individual thoughts, brain chemistry, mental autonomy, and personal data independent from government and companies, on the other hand, and as the right to enhance cognitive processes using neurotechnologies, i.e., psychedelic substances. Although the absence of interference (widely known as "negative liberty") is a crucial feature within liberalism, it is necessary to update this due to the rapid development of neurotechnologies during the 20th century. In a broader sense, self-determination implies the recognition of the human consciousness to deliberate, judge, choose, and act between different ways of action, both in private and community life, i.e., collective self-determination, which involves freedom of choice and freedom of thought.

As previously mentioned, a critical approach to the role of autonomy and self-determination can open our view concerning PAT, especially regarding controversial topics such as mystical experiences, ego dissolution, and trivialization of the psychedelic experience. There are significant nuances that require further explanations. Moreover, in some cases is necessary to re-elaborate our frameworks to address sensitive issues frequently overlooked. For example, regarding the role of autonomy within PAT, Davis (2022, 94) argues that it would be convenient to consider the concept of autoheteronomy. However, what does this mean? Firstly, recognizing that the psychedelic experience could be understood as a sequence in which a heteronomous suggestion from the therapist (or therapy manual) during the preparatory phase could unleash its power of suggestion at the peak of the psychedelic experience. Secondly, to be followed in the integration phase, the patient is making autonomous or makes their own this experience. Both elements, the suggestion and reappropriation are part of the same process. Due to this, the oriented psychedelic experience could be considered as autoheronomy, i.e., an experience of the self as other and the other as self.

To overcome a mainly Euro-American perspective regarding collective self-determination is very important to consider a critical approach; the analysis of Jörg Fisch provides an insightful perspective. However, his approach is built mainly from a western perspective and does not adequately consider how it works the right to self-determination for indigenous peoples. Within psychedelic humanities, it is crucial because the right of self-determination allows the survival of the ritual uses of psychedelics inside indigenous communities for several centuries. Recent research carried out by indigenous scholars shed light on the role of indigenous self-determination within western psychedelic research. For instance, self-determination is considered the ground of some ethical principles, which are the core of indigenous liberty or sovereignty; both concepts lack acknowledgment. Self-determination is a sensitive issue concerning the regulation of tangible and intangible indigenous heritage, i.e., the intellectual property of traditional indigenous medicine. The legal development and recognition of indigenous traditional knowledge "must come from indigenous self-determined rules of law to ensure culturally sensitive policies" (Celidwan, et al., 2023, 6).

3. Philosophy of psychedelics

Nowadays is widespread to find in the mass media a large amount of news describing the advances of clinical trials or passionate claims supporting religious freedom. Although science and religion indeed contributed to changing the current paradigms and challenged the policies of punishment, it is also true that both do not cover all the possibilities and potential for cognitive liberty in the realm of psychedelic humanities. As mentioned above, freedom of thought is one of the constitutive elements of cognitive liberty. However, due to its enormous scope, it is necessary to develop a philosophical approach to go beyond the boundaries of religious freedom. So, the philosophical uses of psychedelics can contribute to a better understanding of consciousness, even if we use a metaphysical or a naturalistic framework.

An under-explored area is the philosophy of psychedelics, partly because philosophy is not very popular in the mass media, which covered the psychedelic renaissance, and because mainstream philosophy is permeated with dogmatism and internal colonialism inside academic institutions (González Romero, 2022, 77–94). Some philosophical uses of psychedelics have long been traced to the Western tradition until ancient Greece (Rinella, 2010; Sjöstedt-Hughes, 2016). However, since the second half of the 20th century, this issue started to be explicitly considered (Huxley, 1954/2004; Drake, 1965, 56–58; Osmond, 1971, 58–64). They all grasped the philosophical possibilities of psychedelics and made significant contributions. However, all these attempts were isolated lights in the darkness of punitive policy. It was until the 21st century that the research on this issue achieved a systematic development.

Currently is possible to find a diversity of perspectives. For instance, Letheby (2021, 24–27) analyzes mystical experiences in psychedelic therapy from a naturalistic approach. Naturalism is a valuable tool to challenge the "classical hypothesis" coined by Aldous Huxley that psychedelics mainly manifest a cosmic or Divine mind in an individual human mind. The question is, how can a finite being/mind know an infinite being/mind? Likewise, Peter Sjöstedt-Hughes analyses - grounded in the works of Benedictus Spinoza and Alfred North Whitehead- the role of panpsychism within the study of consciousness (2022, 211–236). Also, Hauskeller et al. (2022, 107–132), grounded in the framework of Frankfurt School critical theory, and Michel Foucault's philosophy displayed a sharp analysis of power relations and paradoxes embedded in current clinical trials involving psychedelics.

However, what does it mean to discuss the philosophical uses of psychedelics? To answer this question, I would argue that it is necessary to challenge our shared beliefs and frameworks, put them aside, and make a *tabula rasa*. This shift is crucial to understanding that the psychedelic experience is a source of knowledge and not only a series of hallucinations and also encourages psychological insights. So, the starting point to understand the philosophical uses of

psychedelics is to acknowledge the epistemic value of the psychedelic experience.

The next question is, what kind of knowledge is attached to psychedelic experiences? This question shows a challenging problem that requires patience and an interdisciplinary approach to address adequately. Nevertheless, it is possible to highlight the following features: (a) knowledge of the self, or *inner consciousness* (Weber, 2022, 249); (b) knowledge of the interconnectedness between human beings and nature due to the use psychedelic substances; in other words and ecological consciousness. Of course, these categories do not involve all the knowledge embedded in the psychedelic experience; they are only a glimpse of the full possibilities. For example, psychoanalysis and transpersonal psychology demonstrated that psychedelics explore and unlock the unconscious in therapeutic settings. The knowledge produced during the psychedelic experience is a vein of research that requires further exploration—primarily using a wide array of philosophical tools such as phenomenology, epistemology, ontology, esthetics, and bioethics.

Philosophy allows us to grasp naturalism and metaphysical frameworks; due to this, it is possible to appreciate both sides of the psychedelic experience regarding therapeutic uses. On the one hand, naturalism represents an excellent antidote to metaphysical sickness, i.e., romanticizing spiritual hallucinations and denying the material content of psychedelic experience (Letheby, 2021). On the other hand, metaphysics could help go beyond a naïve realism embedded in a dogmatic view of western biomedicine. Sjöstedt-Hughes (2022) highlighted the therapeutic properties within metaphysics and the lasting psychological benefits of mystical experience. However, to achieve a better understanding, a systematic analysis of the metaphysical inputs and their social and cultural background is an issue that deserves attention in future research.

Philosophy is crucial to develop rigorous frameworks regarding a topic that requires exceptional accuracy to avoid hasty generalizations, cliches, and misunderstandings. Recognizing that the psychedelic experience is a source of knowledge, not a series of hallucinations, is the first step to overcoming the prevalent stigma (Letheby, 2016, 2021). Philosophy has demonstrated how the psychedelic renaissance is trapped in a false dilemma between religious and therapeutic uses of psychedelics, i.e., between hospitals and churches. This narrow approach represents a serious obstacle to achieve an understanding of the full potential of psychedelics (González Romero, 2022, 82). Acknowledging philosophical uses of psychedelics opens the doors of perception to different realms regarding creativity, self-reflection, psychological insight, and connectedness with nature.

3.1. Inner consciousness

The knowledge attached to psychedelic experience is related primarily to the knowledge of the self, which involves psychological insights, meditation processes, and reflective attitudes. All of them can produce dramatic transformations in personal beliefs, behaviors, and even in the worldview of individuals (Letheby, 2021, 53–61; Timmermann et al., 2021, 1–13; Nayak et al., 2022, 1–13). The common feature shared between philosophy and psychedelics is that both are useful for expanding consciousness, as mentioned above. The awareness of inner consciousness is closely related to one of the constitutive elements of cognitive liberty, i.e., self-determination.

Due to this, the more explicit philosophical uses of psychedelics are attached to this topic. For example, some common expressions found in the literature are altered states of consciousness (ASC), non-ordinary states of consciousness (NOSC), and modified states of consciousness (MSC). They have advantages and disadvantages, but I argue that the former is accurate for avoiding ambiguities and characterizing the knowledge and transformation embedded within psychedelic experiences.

The concept of consciousness is not free from ambiguities; other terms such as soul, mind, spirit, or personality have been used inaccurately as synonyms. Moreover, unlocking the unconscious is a crucial feature of psychoanalysis as a therapy and could be considered a type of knowledge. For instance, some frameworks, such as the one developed by Carl Gustav Jung, underline the significance of the collective unconscious (Jung, 2005/1933). Also, the approach developed by transpersonal psychology encourages the dissolution of the ego (Grof, 2012, 137). Moreover, transpersonal psychology proposed a cartography of the psyche related to psychedelic experiences.

An analysis grounded in naturalism can explain the neurocognitive processes underlying the lasting psychological benefits of psychedelic therapy and allows us to go deeper in our understanding of consciousness. The contribution of philosophy also lies in the fact that it provides a coherent explanation of the links between self-narratives and self-representations with essential brain networks such as Default Mode Network (DFM) and Salience Network (SN) (Letheby, 2021, 93–101). Undoubtedly, philosophy is a handy tool to extend our knowledge regarding consciousness from non-clinical uses of psychedelics. Philosophy stimulates freedom of thought and critical analysis of the psychedelic market.

Summarizing, the knowledge provided by psychedelic experience could produce subjective changes and meaningful transformations, which are vital constitutive elements in self-determination. Inner consciousness is a core component of free will. The knowledge of the self is an unfinished process, and oriented psychedelic experiences can contribute to achieving some improvements, as clinical trials and psychotherapy have been demonstrated (Letheby, 2021, 62–79). A philosophical approach can better explain PAT's mechanism and achieve a sharp interplay between science and humanities.

3.2. Ecological consciousness

A widespread feature within contemporary debates considers that the psychedelic experience enhances connectedness between human beings and nature. Psychedelics can be understood as a booster to achieve this ecological consciousness faster than any other way because they provide a vivid experience of this connection. However, to make the most of it, a sharp reflection on the frameworks will be beneficial; for example, from a naturalist approach, those feelings of connectedness could be explained through a connectivity ontology, which is one of the key features that come from environmental humanities.

Of course, there are other frameworks to explain this phenomenon; for instance, the most common are attached to mystical experiences or spirituality (Timmermann et al., 2021, 1–13). Despite its popularity, those metaphysical frameworks imply many assumptions and are filled with a cultural background everyone does

not share. Due to this, a connectivity ontology allows us to more accurately explain the ecological consciousness and the knowledge achieved during the psychedelic experience rather than some metaphysical inputs.

According to the interdisciplinary frameworks provided by psychedelic humanities, these studies on ecological consciousness pretend to explain the relationship between human beings and nature with a different framework than the hegemonic paradigm, which prevails in western philosophy and science. "The traditional separation between those disciplines concerned with 'nature' and those that examine 'culture' has led to increasingly atomized science-based responses to environmental dilemmas" (O'Gorman et al., 2019, 427–460). In the context of the transformation caused by climate change, the psychedelic humanities and indigenous philosophies represent an alternative to strengthened ecological consciousness with a cross-cultural perspective.

To understand the value and contributions of indigenous philosophies is necessary to consider seriously an ontological turn (Holbraad and Pedersen, 2017, 1–29) or, in other words, a shift in the hegemonic paradigm which prevails nowadays. Furthermore, critical reflection on the traditional boundaries between nature and culture (Descola, 2013, 3–32) can explain some cultural traits embedded within indigenous philosophies, which are not evident at first glance. The bridge between psychedelic humanities and indigenous knowledge is the notion of ecological interconnectedness, i.e., the assumption that the human being is part of an extensive living system that does not separate mind and body, nature and culture, science and humanities, or organic and inorganic life (Rose, 2005, 294). This connectivity ontology is the key feature to building bridges of understanding between psychedelic humanities and ecological consciousness.

3.3. The doors of perception and the ontological turn

What kind of knowledge is attached to opening the doors of perception? To answer this question is crucial to carry out a philosophical interpretation of Aldous Huxley's proposal. For instance: "when the doors of perception are opened, the Aristotelian logic is revoked and its ontological counterpart- substance ontology relativized" (Weber, 2022, 253). Of course, according to Aldous Huxley, the opening of the doors of perception has a larger scope and allows us to see or understand things that are not evident in our ordinary states of consciousness. Furthermore, regarding contemporary philosophical terms, the consequence of this opening is an ontological turn. This ontological turn, understood as a heuristic device, helps to grasp different worldviews if the philosophical mind embraces an intercultural approach.

Opening the doors of perception involves the acknowledgment of a connectivity ontology and an interdisciplinary theoretical marker to face some environmental dilemmas concerning climate change, preservation of biodiversity, rights of non-human species, food sovereignty, water management, and pollution. Indigenous philosophies and western ecological thinking come from different sources but have some features and concerns in common. Due to this, it is possible to talk about an indigenous philosophical ecology (Rose, 2005, 294). From an anthropological approach, the central concern of the ontological turn is "It is about creating the conditions under which one can see things in one's ethnographic material that one would not otherwise have been able to see" (Holbraad and Pedersen, 2017, 4).

Beyond western tradition, indigenous philosophies contribute to extending the scope of psychedelic humanities. Firstly, they encourage the ontological turn better to comprehend the cultural significance of the psychedelic experience (Williams et al., 2022, 506–527). Secondly, indigenous philosophies can clarify the ontology of connectedness between human beings and nature but without succumbing to anthropocentrism. Thirdly, this ontological turn is a clue to strengthen the framework of psychedelic humanities and overcome the ambiguities embedded in humanism. For instance, indigenous philosophies recognize the significance of the More-than-Human (MTH) beings regarding the knowledge embedded within the psychedelic experience.

Robert Warrior, an Osage scholar, identifies *topos* (territory or place) as foundational to indigenous philosophies in contrast to *logos* (discourse or the word) which underpins Western philosophy (Williams et al., 2022, 510). This shift is not only theoretical; it is related to sensitive political issues attached to the right to land and ecological consciousness. From a materialist perspective, this cultural feature is handy in explaining the significance of the land and the connectedness between humans and plants, fungi, animals, rivers, lakes, lagoons, seas, forests, and glaciers. Pointing out this cultural feature is very important because the psychedelic renaissance and western academia tend to overlook the material character of indigenous philosophies to focus on spiritual and metaphysical features. Moreover, indigenous philosophies are mainly a way of living and not only a discourse produced in seminars, books, or papers.

Regarding consciousness, some noteworthy developments embedded within the ontological turn include the notions that forests think (Kohn, 2013, 131–153), that rivers are persons (Hutchison, 2014, 179–182), and that plants are intelligent (Kimmerer, 2015; Gagliano, 2018). All these topics require an independent study but shed light on the scope of ontological pluralism concerning the psychedelic experience. For instance, contemporary researchers are interested in how psychedelics may produce a wide range of significant transformations in perception, cognition, and mood. A recent study explored belief changes related to psychedelic experiences, which are deeply associated with qualitative features (Nayak et al., 2022, 1–13). The research results were organized into five factors: 1.Dualism; 2.Paranormal/Spirituality; 3.Nonmammal consciousness- refers to whether insects, trees, and rocks are capable of having a conscious experience and 4.Mammal consciousness.

Resetting how human beings build their links with nature and society is a crucial topic for psychedelic humanities. Moreover, the transformation produced regarding self-representation and ecological consciousness could strengthen the meaning and scope of the possible emancipatory uses of psychedelics. Of course, to avoid a naïve perspective, it is necessary to recognize that psychedelics are not the solution to all problems and illnesses. Psychedelics are not magic bullets; it is also crucial to encourage meaningful transformations within the "global set and setting" and the social causes of depression, anxiety, addictions, and PTSD (Hendlin, 2022). To go deeper is necessary to argue that a complete transformation of the global "set and setting" requires a shift in how the psychedelic experience is conceived within the margins of capitalism and mainstream mass media. For example, a lack of investment in education, health,

housing, and transportation, will inevitably lead to a mental health crisis and cannot be addressed by a therapeutic approach alone. Enhancing the frameworks and methodologies applied in contemporary research is crucial to open the doors of perception to a broader scope.

The psychedelic humanities allow us to extend the scope of consciousness into a broader framework, not restricted only to biological or individual processes but also consider their social connections (Roberts, 2017, 102–105). The transformations attached to self-narratives are not isolated from a global "set and setting," which shape and determine some of the cultural features, restrictions, or pathologies everyone must deal with (Hendlin, 2022). The connection between individual self-narratives, oral history, and social narratives is an issue that deserves further research (O'Gorman et al., 2019, 284). The psychedelic humanities represent a suitable and well-equipped laboratory to explore these overlooked connections and account for the self-determination processes regarding identity, citizenship, and gender.

The ontological turn is necessary to acknowledge indigenous philosophies' value and scope. Indigenous peoples have a millenary knowledge of ritual, divinatory and therapeutic uses of psychedelics. The consequence of this turn is the recognition of ontological pluralism, which helps to overcome the paradoxes and colonial shadows embedded in the psychedelic renaissance (Negrin, 2021, 65–70). Ontological pluralism is not only a scholarly matter but also a crucial feature in better understanding some social issues. For example, struggles for territory, epistemological extractivism, and the patent system (Gerber et al., 2021, 573–577). Within indigenous worldviews, peyote and sacred mushrooms are not considered mainly psychedelic substances isolated from the territory but also living beings with whom it is possible to establish communication through ritual and ceremonial language.

The ontological turn is not without controversy, and there is an extended debate about its foundations and scope. Some scholars argue it could imply an anachronistic extrapolation of western frameworks to indigenous worldviews (Course, 2010, 247–263). Others consider it embraces a meta-ontology, i.e., a meta-narrative, making it challenging to understand the phenomena it seeks to explain (Heywood, 2012, 146). Furthermore, it has been argued that "ontology" is only another word for culture (Carrithers et al., 2010). On the other hand, supporters used to consider that the ontological turn is simply a technology of description, which allows anthropologists to make sense of their ethnographic materials (Pedersen, 2012). However, the ontological turn is not only circumscribed to the indigenous worldviews or cosmologies, but its scope also embraces the fields of 'cyberdelics' and 'technodelics', especially concerning the challenges attached to a posthuman realm (Hartogsohn, 2023, pp. 1–8). This reflection about the role of the human, posthuman, and more than human entities (MTH) is at the core of the psychedelic humanities because, despite its limitations, the ontological turn could be a useful heuristic device to overcome dogmatism.

4. The psychedelic humanities

Roberts (2017) and Langlitz (2019) highlighted the "sorry state" of humanities at the beginning of the 21st Century. Technocratic regimes dismissed the role of humanities in education, preferring the natural sciences, cybernetics, and business as the core education. However, the mainstream turn involved in the psychedelic renaissance represents the opportunity to shift this technocratic paradigm to achieve a holistic overview to overcome the fictitious split between science and humanities, mind and body and subject-object. Humanities and decolonial theory help avoid manichean dualisms and cultural biases within psychedelic studies (Hauskeller et al., 2022).

The development of psychedelic humanities implies a shift of social, cultural, and scientific paradigms, a complete substitution of frameworks and methodologies (Fanon, 2004/1961). A decolonial approach implies, a complete substitution of the punishment policies which undermined freedom of choice and caused social paradoxes such as violence, murders, forced disappearances, imprisonments, racism, and discrimination (González Romero, 2022). A decolonial approach will be helpful to understand from a broader perspective the social contradictions attached to the policies of punishment, but also regarding psychedelic capitalism.

The psychedelic humanities are interdisciplinary, combining historical texts, community-based narratives, anthropological fieldwork, and contemporary scientific claims. It draws on diverse methodologies from history, ethnography, hermeneutics, literary theory, and quantitative-qualitative methodologies, including interviews and surveys (Roberts, 2017, 102–119; Langlitz, 2019, 275–288). By comparing philosophical projects across time and place, psychedelic humanities explore how indigenous knowledge has intersected (or not) with western claims of cognitive liberty within a clinical encounter or a therapeutic model. Based on community-engaged approaches and historical, anthropological texts, psychedelic humanities can generate a sophisticated analysis of how prohibition efforts altered the philosophical goals of psychedelic use.

4.1. History

Historical research is crucial in overcoming biases produced by the ideology behind the prohibition policies. The propaganda used at the beginning of the war on drugs undermined the legitimacy of scientific research on psychedelics, but also disseminated cultural biases, racialization and discrimination of psychedelics use among the general audience. Moreover, this strategy shared false information and fake news without enough scientific evidence. A clear example was the anti-drug scare film "LSD 25," launched in 1967. Unfortunately, this propaganda dismissed the potential therapeutic uses of LSD to treat alcoholism based on the research carried out by Humphry Osmond and Abram Hoffer (Dyck, 2008, 13–32).

Another example was the misinformation regarding the chromosome-damaging, carcinogenic, and mutagenic effects attributed to LSD consumption. For instance, *Science News* Vol 91, 1 April 1967, published a brief note called "LSD may damage chromosomes" the note highlighted those two researchers from the State University of New York tested LSD on cell cultures of the blood of two healthy individuals. "The New York study published in *Science*, March 1967 indicates that in addition to psychosis, LSD can produce biological damage at the most basic level."

Many examples in newspapers, TV, and comics spread this propaganda and misinformation. However, further scientific research did not support these statements. "From our own work and from a

review of the literature, we believe that pure LSD ingested in moderate doses does not damage chromosomes *in vivo*, does not cause detectable genetic damage, and is not a teratogen or a carcinogen in man" (Dishotsky et al., 1971, 431–440).

Due to this, the role of psychedelic humanities lies, in fact, in providing a rigorous revision of this propaganda based on the evidence of scientific and historical research. The psychedelic humanities could overcome misinformation, racialization, and propaganda attached to prohibitionist policy. For instance, a war on intellect is the collateral damage of the war on drugs and the propaganda attached to it (Roberts, 2017, 116). The revisionism of the war on drugs includes assessing and evaluating past experiences, incidents, and ideologies to provide an adequate framework to support the therapeutic purposes of current clinical trials and create a free cultural environment from biases and misinformation.

On the one hand, to avoid a naïve perspective is essential to highlight that revisionism can serve definable political, ideological, or cultural ambitions used for legitimization purposes. On the other hand, revisionism can encourage the rise of historical consciousness to avoid past mistakes and bad practices or redefine group or national identities. Historical consciousness is a specific type of collective and social consciousness but also with an individual character. Both paradigms (collective and individual) are frequently overlapped, and psychedelic humanities can contribute to disentangling its scope:

> […] the first one considers historical consciousness as a collective phenomenon and studies its perceived rise as a pivotal moment in the genesis of modern self-understanding; the second one treats historical consciousness as an individual competence and uses it for the training of cognitive capacities with which people can understand the past (Grever and Adriaansen, 2019, 815).

Regarding the first paradigm, i.e., historical consciousness as a collective phenomenon, critically revisiting the war on drugs can enhance cognitive liberty within academic institutions and mass media. Moreover, to produce and promote high-quality research on psychedelics and the implementation of public policies which can guarantee human rights (Walsh, 2010). The second paradigm helps strengthen the cognitive capacities of those individuals who use the psychedelic experience as a psychological insight and for therapeutic purposes without fear or remorse.

History allows a better understanding of psychedelics' diversity and cultural uses. This acknowledgment of diversity is essential to avoid the hasty generalizations and dogmatism embedded in the prohibitionist policy. Pluralism and diversity are core features within psychedelic humanities, especially regarding non-western worldviews. For example, history and anthropology are fundamental to encouraging reconciliation and reciprocity with indigenous peoples.

4.2. Anthropology

Psychedelic humanities must consider the ontological turn explained above to overcome some paradoxes attached to the meaning of a key concept: "humanism." With the help of anthropology, it is necessary to explain the differences between psychedelic humanities and psychedelic humanism. Regarding this issue, Langlitz (2020b) argues that the main difference is that psychedelic humanities do not attribute prime importance to humans rather than the divine or other beings such as animals or plants; in other words, psychedelic humanities do not embrace anthropocentrism.

To establish a clear difference between both, Langlitz (2020b) analyzed the failure of humanism, especially regarding its narrow scope. To achieve its goal challenged a core belief within humanism, i.e., that only human beings share certain features such as consciousness, agency, choice, responsibility, and morality, even though these capacities can be lost in particular circumstances. In a broader sense, psychedelic humanities can contribute to encouraging the reflection of what it means to be a human being within the Anthropocene and to enhance critical thinking concerning the impact on ecosystems caused by human activities. The rise of ecological consciousness is critical to understanding the scope of oriented psychedelic experiences.

Anthropology has the potential to play a substantial role in promoting new knowledge that works within psychedelic and environmental humanities exploring nature in terms of agency and communication, i.e., moving beyond the hegemonic paradigm of anthropocentrism, which prevails in Western science and philosophy. Plumwood (2002, 8) proposed two significant tasks regarding this issue. "The first is to re-situate the human in ecological terms, and the second is to re-situate the non-human in ethical terms." Oriented psychedelic experiences can contribute to a better understanding of both tasks, not only in a theoretical way but also with a hands-on approach. The psychedelic humanities are a laboratory in which it is possible to systematically analyze both perspectives (indigenous philosophies and environmental humanities) to develop better frameworks to understand the connectivity ontology between human beings and nature under the influence of psychedelic substances.

4.3. Critical thinking

Critical thinking is valuable for shaking the grounds of mainstreaming psychedelics and revealing the paradoxes embedded in psychedelic capitalism, which is a topic frequently overlooked by enthusiastic and naïve approaches (Hauskeller et al., 2022). An epistemic virtue ethics allows a deeper understanding of cognitive freedom's foundations, scope, and limits (Langlitz, 2019, 284). Ethics promotes a critical approach to the ideologies within psychedelic science and market, i.e., the medicalization of psychedelics (Noorani, 2019, 34–39), the patent system (McGonigle, 2016, 217–226), and cultural appropriation (Gerber et al., 2021, 573–577). Developing decolonial ethics will help face some of the unexpected dilemmas attached to psychedelic science and the opening of new markets. The accessibility of the new therapies developed is a social issue that must be considered seriously.

The significance of psychedelic humanities in encouraging critical thinking; this task could be achieved in two ways. Firstly, on the one hand, an historical revision of the war on drugs is necessary to overcome the stigma, discrimination, and murders caused by several decades of punishment policies. Secondly, disseminating the outputs based on scientific research to general audiences is the first step to providing psychedelic education. Prohibitionist policies attached to the war on drugs undermine cognitive liberty and civil rights in four ways:

1. Are a severe threat to the freedom of thought.
2. Are a denial of the right to health.
3. Imply the lack of acknowledgment of indigenous rights.
4. Represent an obstacle to self-determination and the freedom of choice.

Each of these topics requires an independent assessment. However, all of them must be considered for decriminalizing drugs and developing public policies based on harm reduction and the management of pleasure. Secondly, on the other hand, to avoid a simple-minded approach regarding psychedelic capitalism (Hallifax, 2023), it is necessary to display a critical analysis of the power relations, economic interests, and political agendas embedded in the psychedelic renaissance. There is a long history of bioprospecting for gain in the Global North where psychedelic compounds and plants are seen to have epistemic and financial value. The psychedelic humanities are far from a purely enthusiastic approach. Trivialization and monetization can undermine the emancipatory uses attached to the psychedelic experience, i.e., a transformation of the self-narratives, the rise of ecological consciousness, the right to cognitive liberty, the dissolution of authoritarian values and beliefs, among others.

Critical thinking would help better understand the emancipatory potential of psychedelics and the transformative processes regarding the self. "The psychedelics are a red-hot, social/ethical issue precisely because they are de-conditioning agents. They will raise doubts in you if you are a Hassidic rabbi, a Marxist anthropologist, or an altar boy because their business is to dissolve belief systems" (Forte, 1997, 61). On the other hand, this is only one side of the coin; to avoid a naïve perspective is necessary to acknowledge that they also have significant reconditioning potential: as pluripotent enhancements of suggestibility and non-specific amplifies. People have the right to refrain from using neurotechnologies and deserve protection from coercive and unconsented administration, because psychedelics are also strong conditioning agents. Ethics in clinical trials and PAT must be aware of free, prior, and informed consent to avoid unwilling administration of psychoactive substances, and to ensure ethical data management.

A significant critical thinking issue is recognizing the risks and limitations of the spiritual market and clinical colonization, to overcome some paradoxes and achieve a synergy between science and the humanities. For example, some paradoxes become visible in the following questions: is it legitimate to encourage the consumption of an endangered cactus (peyote) or animal (*bufo alvarius* toad) to satisfy the "spiritual needs" of the tourists or churches? Or is it legitimate to undermine the emancipatory potentials of psychedelics to transform them into a commodity controlled by pharmaceutical companies?

The spiritual market attached to the psychedelic renaissance is another topic that deserves further study because religious or spiritual uses are one of the legitimated uses because they are under the umbrella of religious freedom. Firstly, it is necessary to be aware of the side effects of neurotheology, because some religious organizations are behind the scenes of some studies related to the change in metaphysical beliefs (Glausser, 2021, 614). Secondly, it is necessary to recognize that some vegetal species, such as peyote, *bufo alvarius* toad and the components of ayahuasca, are endangered due to overexploitation attached by churches and neo-shamanic movements. Thirdly, it is necessary to recognize the psychological abuses, sexual harassment, and psychological violence attached to some psychedelic sects (Sánchez, 2019). Due to this, the psychedelic humanities could be a handy tool to address many social issues appropriately beyond clinical and therapeutic uses.

Critical thinking in the psychedelic humanities must also avoid exoticizing and romanticizing indigenous cultures. Regarding exoticization, it is crucial to underline that cultural appropriation and lack of respect are two features that must be considered carefully; in that sense, philosophy and anthropology can adequately address these issues. Concerning romanticization, developing "god-savage ethnographies" promotes an idealistic representation, which overlooks the conflicts and struggles faced by indigenous peoples. Moreover, most anthropologists, philosophers, and historians need professional knowledge of indigenous languages to understand indigenous philosophies fully. This lack of knowledge of indigenous languages is the cause of the arbitrary appliance of Western categories and frameworks, such as shaman, healer, sorcerer, magician and witch, among others. The irreflexive use of these categories could lead to an *epistemicide* of indigenous knowledge. To avoid some paradoxes, the psychedelic humanities must encourage the implementation of linguistic criteria.

According to a decolonial approach (Tuhiwai, 2008), a complete transformation of International Law is required to reschedule some sacred plants and fungi used by indigenous peoples since several centuries ago. Also, to guarantee the rights of indigenous peoples, encourage the preservation of endangered plants and cacti, especially peyote, and develop a fair patent system based on legal pluralism (McGonigle, 2016; Celidwen et al., 2023). Furthermore, to be coherent with critical thinking, it is necessary to recognize the possible risks regarding psychedelic-assisted therapy, the limitations of current clinical trials, which does not fully recognize the indigenous knowledge, and the inequalities embedded in the development of psychedelic capitalism.

A major ethical issue is spreading truthful information to overcome the stigma and disinformation attached to the policies of prohibition. Due to this fact, psychedelic humanities can contribute to achieving a balance and finding more accurate categories and frameworks considering ontological pluralism and cultural diversity. For example: "Euro-American misunderstandings and assumptions about "drugs," with the prototype of "drug use" in the Euro-American imagination perpetually reduced to the figure of a socially dysfunctional heroin addict or drunk escaping from reality (Calabrese, 2013, 82–83). Psychedelic humanities can contribute to clarifying these hasty generalizations and developing a more accurate framework.

Another relevant topic is discussing if the war on drugs is effectively ending or if the psychedelic renaissance is just a global redistribution of prohibitionist territories and techniques. Analyzing the constitutive elements of psychedelic capitalism is necessary to address this topic adequately. In legal terms, it is possible to appreciate a mild transformation of legal frameworks and public policies, especially regarding cannabis and psychedelics. Acknowledging therapeutic and adult uses allows appreciating a change in the mid-term, i.e., in two to five years. This shift in the prohibitionist paradigm could be explained due to the interest of pharmaceutical companies in opening new markets. The pharmaceutical industry has traditionally opposed decriminalizing drugs and psychoactive substances, but it seems that nowadays is interested in a new market. However, to avoid a naive perspective, it is too soon to consider that

the war on drugs is ending. Nowadays, we are experiencing mainly a redistribution of the markets. The possible therapeutic advantages developed by psychedelic science are not available to most human beings. Furthermore, non-religious and adult uses still are stigmatized and prosecuted.

Summarizing, some of the substantial contributions of psychedelic humanities could be listed as follows:

1. Medical anthropology and linguistics allow the strengthening of methodologies regarding transcultural psychiatry and ethno-psychiatry.
2. Philosophy and history of religions are helpful for better understanding the "mystical experience."
3. History allows a better understanding of the diversity of cultural uses that psychedelics have had over time.
4. Philosophy allows understanding that therapeutic and spiritual uses are not the only valid uses for psychedelics.
5. Law and sociology help design better public policies and regulatory frameworks.
6. Art and literature allow for widening the scope of psychedelic-assisted therapy.
7. Pedagogy allows the creation of educational programs, didactic resources, and materials on the advantages and risks of psychedelics for different population sectors.

5. Conclusion

Cognitive liberty involves at least four philosophical meanings: (1) freedom of choice, (2) freedom of religion, (3) self-determination, and (4) freedom of thought. This paper focused on explaining its constitutive elements, but of course, further research can contribute to addressing this topic's scope and social implications. Freedom of thought requires special attention, and due to this, the section on the philosophy of psychedelics was devoted to clarifying some challenging topics. The main one is to explain the core features regarding philosophical uses of psychedelics; this issue is relevant because, within the psychedelic renaissance, the main legitimate uses are therapeutic and spiritual. However, critical thinking is essential to avoid getting trapped in the false dilemma between hospitals and churches or new-age psychedelic sects and conspiracy theories. Due to this, it is necessary to consider a philosophical approach seriously. The first step is recognizing that the psychedelic experience is a source of knowledge and not only a series of hallucinations. The second step is to face the question, what kind of knowledge is embedded within the psychedelic experience?

According to the findings of this research, it is possible to highlight (a) knowledge of the self, or *inner consciousness*, and (b) knowledge of the interconnectedness between human beings and nature, or *ecological consciousness*. Psychedelic knowledge goes beyond psychologism or ideology and includes knowledge of the brain and changes in beliefs. Nevertheless, it also includes the ontological turn and developing critical thinking through freedom of thought. Of course, there are multiple ways to achieve a philosophical approach. Langlitz underlined the possibilities within neuro-philosophy and the perennial philosophy. However, it is also necessary to consider indigenous philosophies contributions seriously, especially because historical and archeological evidence demonstrated the use of psychedelic plants and fungi several millennia ago.

Historical research is crucial in overcoming cultural biases and racialization produced by prohibition policies. History helps carry out a revisioning of the war on drugs, mainly because critical revisionism can encourage the rise of historical consciousness to avoid past mistakes and bad practices or redefine group or national identities. Historical consciousness contributes to moving from psychologism, subjectivism, and relativism. Furthermore, history acknowledges women's work in psychedelic research, which is frequently overlooked due to colonialism and structural violence. The history of psychedelic science is a vein of research that helps better understand the social processes attached to the interplay between science and humanities.

Concerning the role of anthropology, it is necessary to highlight that psychedelic humanities do not attribute prime importance to humans rather than the divine or other beings such as animals or plants; in other words, psychedelic humanities do not embrace anthropocentrism. For instance, this is the main difference between psychedelic humanities and psychedelic humanism, which must be recognized to avoid misunderstandings. Considering the ontological turn could help strengthen the reconciliation processes with indigenous peoples. Furthermore, anthropology can encourage the reflection of what it means to be a human being within the context of ontological pluralism. Medical anthropology could involve fieldwork inside the laboratories and health institutions where psychedelic science and clinical trials are developed and within indigenous medicine and traditional healing systems.

The humanities contribute to developing innovative and rigorous frameworks to carry out psychedelic research that integrates critical thinking including decolonizing approaches, equity, diversity, and inclusion strategies, and alternative perspectives drawn from social justice claims concerning the potential benefits of psychedelics in contemporary societies. The role of psychedelic humanities is to encourage dialog and freedom of thought and to produce uncomfortable questions. Self-criticism prevents against simple-minded approaches and challenges the idealization of psychedelic science, clinical trials, patent systems and indigenous worldviews.

The entire development of the humanities could strengthen the education regarding psychedelics in larger audiences due to the lack of education provided by nation-states, private companies, and NGOs globally. In spite the fact of some significant efforts, the politics of punishment still prevail worldwide. The development of psychedelic education will contribute to facing some mental health challenges. Also, education will help develop harm reduction policies to alleviate the unnecessary suffering triggered by the war on drugs. A trans-disciplinary approach within psychedelic research can help to overcome the "sorry state" of the humanities attached to neo-liberal and technocratic regimes to fully recognize that philosophical uses of psychedelics can help to broaden the mental landscapes regarding cognitive liberty and encourage critical thinking to overcome the attempts to control and manipulate human consciousness.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Berlin, I. (2002/1969). *Liberty: Incorporating Four Essays on Liberty*; New York. Oxford University Press.

Boire, R. G. (1999). On cognitive liberty (part 1). *J. Cogn. Libert.* 1, 7–13.

Brooks, D. (2023). "American curios/Los ausentes", La Jornada. Available at: https://www.jornada.com.mx/notas/2023/02/27/mundo/american-curios-los-ausentes/ (Accessed March 6, 2023).

Brown, M. (2014). "Marihuana and religious freedom in the USA" in *Prohibition, Religious Freedom, and Human Rights: Regulating Traditional Drug Use*. eds. B. Cauby Labate and C. Cavnar (Heidelberg: Springer Verlag).

Calabrese, J. D. (2013). *A Different Medicine. Postcolonial Healing in the Native American Church*; New York, Oxford University Press.

Carhart-Harris, R., Giribaldi, B., Watts, R., Baker-Jones, M., Murphy-Beiner, A., Murphy, R., et al. (2021). Trial of psilocybin versus escitalopram for depression. *N. Engl. J. Med.* 384, 1402–1411. doi: 10.1056/NEJMoa2032994

Carrithers, M., Candea, M., Sykes, K., Holbraad, M., and Venkatesan, S. (2010). Ontology is just another word for culture: Motion tabled at the 2008 meeting of the Group for Debates in anthropological theory, University of Manchester. *Critique Anthropol.* 30, 152–200. doi: 10.1177/0308275X09364070

Celidwen, Y., Redvers, N., Githaiga, C., Calambás, J., Añaños, K., Chindoy, M. E., et al. (2023). Ethical principles of traditional indigenous medicine to guide western psychedelic research and practice. *Lancet Region. Health Am.* 18:100410. doi: 10.1016/j.lana.2022.100410

Course, M. (2010). Of words and fog: Linguistic relativity and Amerindian ontology. *Anthropol. Theory* 10, 247–263. doi: 10.1177/1463499610372177

Davis, O. (2022). "Autonomy and autoheteronomy in psychedelic assisted psychotheraphy" in *New Interdisciplinary Perspectives on and Beyond Autonomy*. eds. C. Watkin and O. Davis (London: Routledge).

Dawson, A. S. (2015). Salvador Roquet, María Sabina, and the trouble with *jipies*. *Hisp. Am. Hist. Rev.* 95:122. doi: 10.1215/00182168-2836928

Descola, P. (2013). *Beyond Nature and Culture*. Chicago: University of Chicago Press.

Dishotsky, L., Loughman, W. D., Mogar, R. E., and Lipscomb, W. R. (1971). LSD and genetic damage. *Science* 172, 431–440. doi: 10.1126/science.172.3982.431

Drake, D. (1965). Psychedelic metaphysics. *Psychedelic Rev.* 2, 56–58.

Dyck, E. (2008). *Psychedelic Psychiatry. LSD from Clinics to Campus*; Baltimore, John Hopkins University Press.

Elcock, C. (2013). From acid revolution to Entheogenic evolution: psychedelic philosophy in the sixties and beyond. *J Am Cult (Malden)* 36, 296–311. doi: 10.1111/jacc.12051

Fanon, F. (2004/1961). *The Wretched of the Earth*; New York, Grove Press.

Fernández, Belén. (2022). The legal psychedelic industry: Capitalism on drugs. Available at: https://www.aljazeera.com/opinions/2022/5/5/the-legal-psychedelics-industry-capitalism-on-drugs (Accessed February 12, 2023).

Feeney, K., and Labate, B. C. (2014). "The expansion of Brazilian Ayahuasca Religions: Law, culture and locality," in *Prohibition, Religious Freedom, and Human Rights: Regulating Traditional Drug Use*. eds. B. Labate and C. Cavnar (Berlin, Heidelberg: Springer).

Fisch, Jörg. (2015). *The Right of Self-Determination of Peoples: The Domestication of an Illusion Human Rights in History*; New York, Cambridge University Press.

Fletcher, A. L. (2012). "Make up your own mind: the politics of cognitive freedom" in *Policy: The Life Sciences and Public Policy*, vol. *10* (Bingley: Emerald Group Publishing Limited), 225–242.

Forte, R. (ed.). (1997). *Entheogens and the future of religion*. San Francisco: Council on Spiritual Practices.

Fox, M. (2018). Veterans more likely than civilians to die by suicide, VA study finds. Available at: https://www.nbcnews.com/health/health-news/veterans-more-likely-civilians-die-suicide-va-study-finds-n884471 (Accessed December 18, 2022)

Gagliano, M. (2018). *Thus Spoke the Plant: A Remarkable Journey of Groundbreaking Scientific Discoveries and Personal Encounters with Plants*. Berkeley: North Atlantic Books.

Gerber, K., Flores, I. G., Ruiz, A. C., Ali, I., Ginsberg, N. L., and Schenberg, E. E. (2021). Ethical concerns about psilocybin intellectual property. *ACS Pharmacol. Transl. Sci.* 4, 573–577. doi: 10.1021/acsptsci.0c00171

Glausser, W. (2021). Psychedelic drugs and atheism: debunking the myths. *Religions* 12:614. doi: 10.3390/rel12080614

Gomez-Escolar, A. (2022). *Essential Guide to the Psychedelic Renaissance: All you Need to Know About How Psilocybin, MDMA, and LSD are Revolutionizing Mental Health and Changing Lives*. Madrid: Argonauta Digital.

González Romero, O. (2022). "Decolonizing the philosophy of psychedelics" in *Philosophy and Psychedelics. Frameworks for Exceptional Experience*. eds. C. H. Hauskeller and P. Sjöstedt (London: Bloomsbury).

Grever, M., and Adriaansen, R. (2019). Historical consciousness: the enigma of different paradigms. *J. Curric. Stud.* 51, 814–830. doi: 10.1080/00220272.2019.1652937

Grof, S. (2012). Revision and re-enchantment of psychology: legacy of half a century of consciousness research. *J. Transpers. Psychol.* 44:137.

Hallifax, J. (2023). In Defence of psychedelic capitalism. Available at: https://microdose.buzz/news/psychedelic-capitalism/ (Accessed February 13, 2023).

Hartogsohn, I. (2023). Cyberdelics in context: on the prospects and challenges of mind-manifesting technologies. *Front. Psychol.* 13. doi: 10.3389/fpsyg.2022.1073235

Hauskeller, C., Artinian, T., Fiske, A., Schwarz Marin, E., González Romero, O. S., Luna, L. E., et al. (2022). Decolonization is a metaphor towards a different ethic. The case from psychedelic studies. *Interdiscip. Sci. Rev.* 47, 1–20. doi: 10.1080/03080188.2022.2122788

Hauskeller, C., Sjösted, P., Fiske, A., González Romero, O., Schwartz-Marín, E., Luna, L., et al. (2022). Decolonization is a metaphor towards a different ethic. The Case of Psychedelic Studies. *Interdiscipl. Sci. Views* 47, 1–11.

Hendlin, Y. (2022). Taking the tripping out of psychedelic medicine is a mistake. Available at: https://www.youtube.com/watch?v=yRl7DcPe9eg (Accessed December 18, 2022).

Herrington, A. J. (2022). VA studying psychedelics as mental health treatment for veterans. Available at: https://www.forbes.com/sites/ajherrington/2022/06/24/va-studying-psychedelics-as-mental-health-treatment-for-veterans/?sh=4b4686ee6c0d (Accessed December 18, 2022).

Hewitt, K. (2019). Psychedelic feminism: A radical interpretation of psychedelic consciousness? *J. Study Radicalism* 13, 75–120. doi: 10.14321/jstudradi.13.1.0075

Heywood, P. (2012). Anthropology and what there is: reflections on "ontology". *Camb. Anthropol.* 30, 143–151. doi: 10.3167/ca.2012.300112

Holbraad, M., and Pedersen, M. A. (2017). *The Ontological Turn. An Anthropological Exposition*. Cambridge: Cambridge University Press.

Hutchison, A. (2014). The Whanganui River as a legal person. *Alternat. Law J.* 39, 179–182. doi: 10.1177/1037969X1403900309

Huxley, A. (1954/2004). *The Doors of Perception*. London: Chatto and Windus.

Ienca, M. (2017). The right to cognitive liberty. *Sci. Am.* 317, 10–11. doi: 10.1038/scientificamerican0817-10

Jung, C. G. (2005/1933). *Modern Man in Search for a Soul*. London: Routledge.

Kimmerer, R. W. (2015). *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants*. Minneapolis: Milkweed Editions.

Kohn, E. (2013). *How Forests Think*. Berkeley: University of California Press.

Langlitz, N. (2019). Psychedelic science as cosmic play, psychedelic humanities as perennial polemics? Or why we are still fighting over max Weber's science as a vocation. *J. Class. Sociol.* 19, 275–289. doi: 10.1177/1468795X19851405

Langlitz, N. (2020a). Rightist psychedelia. Society for Cultural Anthropology. Available at: https://culanth.org/fieldsights/rightist-psychedelia (Accessed February 27, 2023).

Langlitz, N. (2020b). Should psychedelic humanities promote psychedelic humanism. Available at: https://chacruna.net/should-psychedelic-humanities-promote-psychedelic-humanism/ (Accessed February 27, 2023).

Leary, T. (1998). *The Politics of Ecstasy*; Oakland. Ronin Publishing.

Letheby, C. (2016). The epistemic innocence of psychedelic states. *Conscious. Cogn.* 39, 28–37. doi: 10.1016/j.concog.2015.11.012

Letheby, C. (2021). *Philosophy of Psychedelics (International Perspectives in Philosophy and Psychiatry)*. Oxford, Oxford University Press.

Letheby, C. (2022). Psychedelics, atheism, and naturalism: myth and reality. *J. Conscious. Stud.* 29, 69–92. doi: 10.53765/20512201.29.7.069

McGonigle, I. (2016). Patenting nature or protecting culture? Ethnopharmacology and indigenous intellectual property rights. *J. Law Biosci.* 3, 217–226. doi: 10.1093/jlb/lsw003

Metaal, P. (2014). "Coca in debate: The contradiction and conflict between the UN Drug Conventions and the real world," in *Prohibition, Religious Freedom, and Human Rights: Regulating Traditional Drug Use*. eds. B. Labate and C. Cavnar (Berlin, Heidelberg: Springer).

Mill, J. S. (1982). *On Liberty*. London: Penguin English Library.

Nayak, S. M., Singh, M., Yaden, D. B., and Griffiths, R. R. (2022). Belief changes associated with psychedelic use. *J. Psychopharmacol.* doi: 10.1177/02698811221131

Negrin, D. (2021). "Colonial shadows in the psychedelic renaissance" in *Psychedelic Justice on Gender, Diversity, Sustainability, Reciprocity and Cultural Appropriation*. eds. B. Cauby Labate and C. Cavnar (Santa Fe, New Mexico: Synergetic Press)

Noorani, T. (2019). Making psychedelics into medicines: the politics and paradoxes of medicalization. *J. Psychedelic Stud.* 4, 34–39. doi: 10.1556/2054.2019.018

O'Gorman, E., van Dooren, T., Münster, U., Adamson, J., Mauch, C., Sörlin, S., et al. (2019). Teaching the environmental humanities: international perspectives and practices. *Environ. Human.* 11, 427–460. doi: 10.1215/22011919-7754545

Osmond, H. (1971). Philosophical aspects of psychedelics. *Int. J. Clin. Pharmacol.* 5, 58–64.

Pace, B., and Devenot, N. (2021). Right-wing psychedelia: case studies in cultural plasticity and political pluripotency. *Front. Psychol.* 12. doi: 10.3389/fpsyg.2021.733185

Pedersen, M. A. (2012). Common nonsense a review of certain recent reviews of the ontological turn. Anthropology of this century. Available http://aotcpress.com/articles/common_nonsense/ (Accessed February 27, 2023).

Plumwood, V. (2002). *Environmental Culture: The Ecological Crisis of Reason*. London: Routledge.

Raaflaub, K. (2013). *The Discovery of Freedom in Ancient Greece*. Chicago: University of Chicago Press.

Rinella, M. (2010). *Pharmakon: Plato, Drug Culture and Identity in Ancient Athens*. New York: Lexington Books.

Roberts, T. B. (2017). Freudian, Jungian, Grofian - steps towards the psychedelic humanities. *J. Transpers. Psychol.* 49, 102–120.

Rose, D. (2005). An indigenous philosophical ecology: situating the human. *Aust. J. Anthropol.* 16, 294–305. doi: 10.1111/j.1835-9310.2005.tb00312.x

Sánchez, B. (2019). How I lived twelve years in a Colombian Ayahuasca cult led by a sexual abuser. Chacruna Institute for Psychedelic Plant Medicines. Available at: https://chacruna.net/how-i-lived-twelve-years-in-a-colombian-ayahuasca-cult-led-by-a-sexual-abuser/?fbclid=IwAR2lfsZooxVx9QMpPJsIV8CK9p9kuI1H4rEjqZS41StE95XL41Zs7QDYytg (Accessed February 27, 2023).

Sententia, W. (2004). Neuroethical considerations: cognitive liberty and converging technologies for improving human cognition. *Ann. N. Y. Acad. Sci.* 1013, 221–228. doi: 10.1196/annals.1305.014

Sessa, B. (2012). *The Psychedelic Renaissance: Reassessing the Role of Psychedelic Drugs in 21st Century Psychiatry and Society*, London, Muswell Hill Press.

Shulgin, A., and Shulgin, A. (1991). *PIHKAL: A Chemical Love Story*. Berkeley: Transform Press.

Sjöstedt-Hughes, P. (2022). "The white sun of substance. Spinozism and the *amor Dei Intellectuallis*," in *Philosophy and Psychedelics. Frameworks for Exceptional Experience*. eds. C. H. Hauskeller and P. Sjöstedt (London: Bloomsbury), 211–236.

Sjöstedt-Hughes, P. (2016). The psychedelic influence on philosophy. High existence. Available at: https://philpapers.org/rec/SJSTPI (Accessed February 27, 2023).

Timmermann, C., Kettner, H., Letheby, C., Roseman, L., Rosas, F. E., and Carhart-Harris, R. L. (2021). Psychedelics alter metaphysical beliefs. *Sci. Rep.* 11. doi: 10.1038/s41598-021-01209-2

Tuhiwai, L. (2008). *Decolonizing Methodologies. Research and Indigenous Peoples*. London: Zed Books.

Wagner, R. (1975). Some pragmatic aspects of Navajo Peyotism. *Plains Anthropol.* 20, 197–205. doi: 10.1080/2052546.1975.11908717

Walsh, C. (2010). Drugs and human rights: private palliatives, sacramental freedoms, and cognitive liberty. *Int. J. Human Rights* 14, 425–441. doi: 10.1080/13642980802704270

Walsh, C. (2014). "Beyond religious freedom: psychedelics and cognitive liberty" in *Prohibition, Religious Freedom, and Human Rights: Regulating Traditional Drug Use*. eds. B. Cauby Labate and C. Cavnar (Heidelberg: Springer Verlag).

Walsh, C. (2016). Psychedelics and cognitive liberty: reimagining drug policy through the prism of human rights. *Int. J. Drug Policy* 29, 80–87. doi: 10.1016/j.drugpo.2015.12.025

Weber, M. (2022). "Arguments for the psychedelic cure of Western philosophy" in *Philosophy and Psychedelics. Frameworks for Exceptional Experience*. eds. C. H. Hauskeller and P. Sjöstedt (London: Bloomsbury), 249–258.

Weissenbacher, A. (2018). Defending cognitive liberty in an age of moral engineering. *Theol. Sci.* 16, 288–299. doi: 10.1080/14746700.2018.1488476

Williams, K., González-Romero, O., Braunstein, M., and Brand, S. (2022). Indigenous philosophies in the psychedelic renaissance. *Anthropol. Conscious.* 33, 506–527. doi: 10.1111/anoc.12161

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ARC: a framework for access, reciprocity and conduct in psychedelic therapies

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The field of psychedelic assisted therapy (PAT) is growing at an unprecedented pace. The immense pressures this places on those working in this burgeoning field have already begun to raise important questions about risk and responsibility. It is imperative that the development of an ethical and equitable infrastructure for psychedelic care is prioritized to support this rapid expansion of PAT in research and clinical settings. Here we present Access, Reciprocity and Conduct (ARC); a framework for a culturally informed ethical infrastructure for ARC in psychedelic therapies. These three parallel yet interdependent pillars of ARC provide the bedrock for a sustainable psychedelic infrastructure which prioritized equal access to PAT for those in need of mental health treatment (Access), promotes the safety of those delivering and receiving PAT in clinical contexts (Conduct), and respects the traditional and spiritual uses of psychedelic medicines which often precede their clinical use (Reciprocity). In the development of ARC, we are taking a novel dual-phase co-design approach. The first phase involves co-development of an ethics statement for each arm with stakeholders from research, industry, therapy, community, and indigenous settings. A second phase will further disseminate the statements for collaborative review to a wider audience from these different stakeholder communities within the psychedelic therapy field to invite feedback and further refinement. By presenting ARC at this early stage, we hope to draw upon the collective wisdom of the wider psychedelic community and inspire the open dialogue and collaboration upon which the process of co-design depends. We aim to offer a framework through which psychedelic researchers, therapists and other stakeholders, may begin tackling the complex ethical questions arising within their own organizations and individual practice of PAT.

KEYWORDS

psychedelic assisted therapy (PAT), ethics, equity, co-design, psychotherapy

1. Introduction

One in eight people in the world today are living with a mental health difficulty (World Health Organization, 2022), and there are increasing demands for the development of new approaches to mental health treatment. Despite an overall growth in mental health research, the proportion of studies looking at new interventions, particularly of a pharmacological

nature, has declined, with many large pharmaceutical companies withdrawing funding. As a result, there have been few, if any, major pharmaceutical breakthroughs since the 1950s (Hyman, 2013; Stephan et al., 2016; Nutt et al., 2020; Wortzel et al., 2020). There has also been a growing recognition of the wider social, ecological, and socio-economic determinants of mental wellbeing and the health inequalities this represents. This has shaped the resulting calls for a greater focus on integrative, collaborative, and community-based care to better support mental wellbeing for all (Shim et al., 2014; Commission for Equality in Mental Health, 2020; Knifton and Inglis, 2020; World Health Organization, 2022).

Psychedelic-assisted therapy (PAT)[1] has been suggested as a paradigm shift that could address many of the challenges the fields of psychiatry face (Schenberg, 2018; Nutt et al., 2020, Nutt et al., 2022; Petranker et al., 2020; Lu, 2021). Since 2006, there has been extensive growth, in the number of clinical trials conducted, the potential conditions for which PAT is being investigated, as well as in the number of research centers across the globe that are undertaking these trials (Aday et al., 2020; Reiff et al., 2020; Yaden et al., 2021). Where once funding came primarily from philanthropists, corporate enterprises and private investors are now interested in this new approach and are funding a rapid expansion of the field (Phelps et al., 2022; Schwarz-Plaschg, 2022).

Drawing upon the (thus far) positive results of research, a media spotlight has also been placed upon psychedelics (Pilecki et al., 2021; Williams M. L. et al., 2021). Yet, psychedelics remain illegal in most jurisdictions across the world. Given the success of grassroots movements in instigating psilocybin decriminalization initiatives in parts of the US, and recent regulatory changes permitting the prescription of psilocybin and MDMA in Australia from July 2023 onward, it is possible similar public interest initiatives will develop in other parts of the world. Public support has also facilitated early access and compassionate use schemes in some countries that bypass the slow and meticulous pace of research where some deem existing evidence as sufficient to claim it unethical to withhold the treatment for those in need (Greif and Šurkala, 2020). This growing awareness has come alongside rising rates of naturalistic psychedelic use and increasing numbers of psychedelic retreats being offered in many countries globally (Yockey et al., 2020; Killion et al., 2021; Yockey and King, 2021; Glynos et al., 2022). A greater demand for reliable harm reduction information is demonstrated by the growing number of training programmes, referral networks, and psychedelic integration circles run for and by healthcare professionals (Pilecki et al., 2021).

Standing at the helm of a potential paradigm shift, the psychedelic research community now has the opportunity to help steer the future of PAT in a fair and sustainable manner. Within the broader context, there is a pressing need to better understand how these treatments might be most equitably and ethically delivered. The speed at which the field of PAT is moving has already begun to unearth cracks. Reports of unethical conduct have surfaced from both inside and outside the legal framework [Peluso et al., 2020; Psymposia and New York Magazine Cover Story (Power Trip), 2022; Schwarz-Plaschg, 2022]. Additionally, the assimilation of psychedelics into a purely biomedical framework risks repeating historical injustices and exacerbating inequities (Devenot et al., 2022; Schwarz-Plaschg, 2022). This has led some to question the capacity of this budding field to maintain ethical integrity (Williams M. L. et al., 2021; Yaden et al., 2021; Phelps et al., 2022) and has resulted in a flourish in ethical comments in both the public and academic domain (Smith and Sisti, 2020; Brennan et al., 2021; Pilecki et al., 2021; Thal et al., 2021; Williams M. L. et al., 2021; McMillan, 2022; Smith and Appelbaum, 2022). Ethical and practice guidelines for how, when, and by whom PAT should be conducted have been developed by different actors including research establishments [e.g., MAPS (Carlin and Scheld, 2019)], professional bodies [e.g., Psychedelic Association of Canada (PAC, 2022)], and community led/grassroots organizations [e.g., the North Star Pledge (North Star Ethics Pledge, 2020) and Chacruna's Indigenous Reciprocity Initiative (Chacruna, 2021)]. At present, this growing wisdom is diffuse and often at times context specific. With no overarching framework from which to work across sectors, there is a risk that many of these important ethical questions may fall to the wayside as the psychedelic movement accelerates forward.

Here we present Access, Reciprocity and Conduct (ARC); a framework for ethically informed ARC in psychedelic therapies (**Figure 1**). The three pillars of ARC represent a commitment to equitable access to psychedelic therapies (Access), a respect for traditional and spiritual uses of psychedelics (Reciprocity), and the safe and ethical delivery of PAT in clinical settings (Conduct). Each pillar subsumes its own unique ethical challenges that are far-reaching and multifaceted. In an effort to balance complexity and parsimony, the ARC framework provides a scaffold for in-depth independent explorations of each pillar, while offering opportunity for shared learning. As depicted in **Figure 1**, different stakeholders hold particular relevance to each pillar, however, their interdependence is critical for supporting the continued growth of policy, industry, research, clinical and community-based infrastructure. Here, we provide background on each of these pillars, before outlining the development process for ARC.

2. ARC pillars

2.1. Access

It is well documented that mental health disparities exist at global, national, and local levels (Weich et al., 2001; Amaddeo and Jones, 2007; Evans-Lacko et al., 2018). The social determinants of mental health outcomes are also well established, showing that marginalized groups (those who experience social and political inequality) are disproportionately affected by mental distress (Alegría et al., 2018). Low socioeconomic status is related to both poor mental health outcomes and limitations in accessing care, with poverty being both a causal factor and a consequence of mental health difficulties (Alegría et al., 2018). Discrimination related to race, ethnicity, immigrant status, sexual orientation and other marginalized identities are also strongly associated with negative mental health outcomes (Benoit et al., 2015; Berger and Sarnyai, 2015; Lee et al., 2016; Hynie, 2018; Pachter et al., 2018).

1 Many of the topics discussed herein are relevant both to *classic* psychedelics (i.e., psilocybin, LSD, DMT), and psychedelic-like compounds such as MDMA and ketamine. We therefore take "PAT" to encompass psycho-pharmacotherapy approaches using all the above compounds.

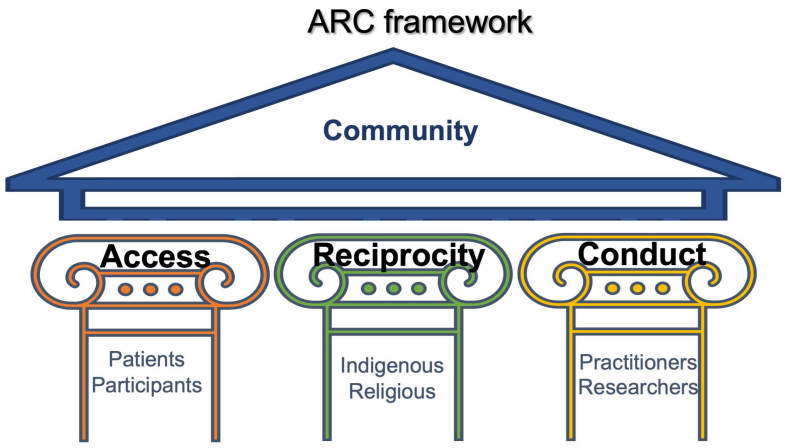

FIGURE 1
The ARC framework consists of three pillars: Access, Reciprocity and Conduct. The strength of each pillar calls upon specific actors, but it is their interdependence that is critical to an equitable and culturally informed ethical framework.

There are multiple barriers to accessing mental healthcare for marginalized groups. There are not only practical barriers (e.g., distance, costs of transport, loss of income to attend appointments) but also psycho-social and cultural barriers (e.g., culturally inappropriate models of illness, stigma, racism and discrimination, history of abuses by mental healthcare and research, and a resulting fear and mistrust toward accessing healthcare services (Amaddeo and Jones, 2007; Memon et al., 2016). As such, even in countries where efforts are made to improve equal access through the national provision of free healthcare (e.g., through the UK National Health Service), the distribution of *needs-based* care is socially patterned, meaning that those from marginalised[2] groups who do access mental healthcare, are still more likely to receive a poor service, and one which is not designed to adequately meet their needs (Watt, 2018).

Psychedelic assisted therapy runs the risk of also exacerbating these existing inequalities in access to healthcare. Misconceptions and laws surrounding drugs, including psychedelics, propagated by historical mistruths in the media and "the war on drugs" have disproportionately impacted marginalized groups by the disruption of communities, as well as racial stereotyping, profiling, and discrimination (Hutchison and Bressi, 2021; Rea and Wallace, 2021). Additionally, a history of exploitation in psychedelic research carried out between the 1950s and 1980s (Strauss et al., 2022) has left a legacy of mistrust toward science and healthcare among underrepresented communities. This has all played a part in perpetuating inadequate representation of marginalized groups within modern research settings; both in participants of clinical trials and, in some research teams themselves (Michaels et al., 2018, 2022; Buchanan, 2021; Williams M. T. et al., 2021). This under-representation means the results of PAT research may not be generalizable to marginalized groups. Consequently, this may form part of a vicious cycle in which some PAT practitioners and models do not adequately consider the necessary adaptations for working appropriately and sensitively with the people represented. If legalized, PAT may also be a prohibitively expensive treatment, meaning there is a serious need to consider affordable models of care across disparate healthcare contexts from the start. If equity is not prioritized in the current research context, or in the development and regulation of legally available treatments, the risk of perpetuating healthcare inequalities is high (Rea and Wallace, 2021).

Well-conducted research, which invites co-design and collaboration from members of marginalized groups, may contribute to shaping more widely applicable models of psychedelic care. However, this will not happen without deliberate and conscious action. The goal of the "Access" pillar of the ARC framework is to identify priority areas for PAT in research and clinical contexts to suggest actionable steps toward the development of inclusive, equitable and culturally sensitive models of care and practice.

2.2. Reciprocity

Many Indigenous peoples have stewarded psychedelics as traditional medicines for millennia, cultivating relationships with and accumulated knowledge on various plants, fungi and cacti, some of which are now used in PAT (Celidwen et al., 2023).

As plant psychedelics mature as medicines in Western contexts, a degree of commercialization of these compounds and their sacred ancient practices seems inevitable. Numerous companies and individuals are already profiting from speculative investments with few, if any, benefits accruing to Indigenous peoples (Williams et al., 2022).[3] Rather, Indigenous peoples are often left out of the

2 We use the term "marginalized" for groups whose needs have are precluded from mainstream social, educational, economic and cultural life (Hynie, 2018), and/or have been historically subjugated in research and medicine. This includes (but is not limited to), groups marginalized due to their racial or ethnic group, immigration status, gender or sexuality, economic deprivation or socio-economic status, and all other characteristics recognized by the United Kingdom's Equalities Act 2010 (Cookson et al., 2021).

3 The case of Maria Sabena provides a well documented example, in which the Western use of sacred plant medicines proved devastating for the traditional healer (Nichols, 2020; Gerber et al., 2021).

sector, as the field is currently widely represented by Westerners. This raises moral and ethical issues, such as those related to cultural appropriation, patenting of "the sacred" and exclusionary practices in research and praxis. These must be addressed if the psychedelic ecosystem is to develop in an equitable and sustainable manner.

Initiatives for addressing reciprocity have been launched by various organizations. For example, the Indigenous Reciprocity Initiative helps Indigenous peoples create conditions for medicine development (Chacruna, 2021), while other initiatives focus on avenues for financial support [e.g., Grow Medicine (2022) and the Indigenous Medicine Conservation Fund (2022)]. The variability of these approaches reflects the complexity of their aims and objectives, and these are yet to be standardized into guidelines for if and how to give back to traditional knowledge carriers of ancient plant medicines.

Recently, presenting an all-encompassing approach, an Indigenous-led globally represented group of practitioners, activists, scholars, lawyers, and human rights defenders convened to formulate a set of ethical guidelines concerning traditional Indigenous medicines current use in Western psychedelic research and practice (Celidwen et al., 2023). Appreciating the challenges in discussing reciprocity and benefit sharing, the group nevertheless identified eight interconnected ethical principles for engaging with Indigenous peoples in relation to psychedelic research and practise: Reverence, Respect, Responsibility, Relevance, Regulation, Reparation, Restoration, and Reconciliation. This transdisciplinary and transcultural group aims to continue their important work by further examining the implementation, policy recommendations, and practical applications of plant psychedelics, including the variety of Indigenous voices.

This approach, as well as the overarching aims, are similar to the Reciprocity pillar of ARC. The first step of our focus groups was to identify key priorities to support the reciprocity and sustainability of psychedelics, and subsequently translate these into actionable recommendations. These findings are currently being prepared for a separate publication as they go beyond the scope of the present paper which aims to introduce the ARC framework *per se*.

Holding reciprocity as a core value in an ethical framework is hoped to contribute to a culture that makes psychedelic medicines available in a way that respects the lineages of Indigenous knowledges, that are essentially–not accidentally–coupled with many of the psychedelic plants on which Western psychedelic medicines are based (Devenot et al., 2022). Protecting participants and patients as psychedelics move into the mainstream is essential, but equally it is essential to create an environment which supports the autonomy and protection of traditional carriers of these medicines. In this way, the Reciprocity pillar of the ARC framework is interconnected with the Access and Conduct pillars, whereby the values of humanity instilled by an inclusive worldview are incorporated across all pillars.

The issues discussed here are by no means novel or limited to developments in the psychedelic therapy field. The exploitation of natural resources and traditional knowledges relates to much broader concerns than plant medicines. However, with the rapid developments of psychedelic medicines in the West, and the benefits as well as risks that these expansions may bring, there is an opportunity to consider how best to develop this sector in a fair manner, so that benefits are not limited to (largely) Western companies but rather shared with the traditional knowledge bearers who have paved the way for current developments and without whom today's "psychedelic renaissance" in the Global North might not be happening. These issues go deeper than the commercialization of psychedelic medicines, touching on values of how to treat nature and humanity. It is the responsibility of PAT practitioners, researchers, and other stakeholders to reflect on the ethical dilemmas caused by the commercialization of nature and the sacred, and also to rise to the challenge of developing impactful initiatives toward reciprocity and sustainability.

2.3. Conduct

The "conduct" arm of the ARC framework concerns how those involved in developing and delivering psychedelic-assisted therapy carry out their activities, and how PAT is made available to patients and clinical trial participants. Ethical dilemmas occur at every level of the psychedelic therapy system, from the participant-therapist dyad to the conduct of teams, professionals, and the wider socio-political system (Anderson et al., 2020; Read and Papaspyrou, 2021; Thal et al., 2021). Conduct, within the ARC framework, concerns the values and processes involved in developing and delivering PAT, and it is therefore inextricably linked to access and reciprocity. To meaningfully consider the ethics of conduct at every level is a necessarily arduous task, which will take the concerted efforts of many over time.

With the rapid expansion of PAT in clinical trials there is an immediate need to consider the complexity of the participant-therapist dyad in the clinic room (Thal et al., 2021) and therefore this is a key focus. At present, there is no formal certification process for becoming a psychedelic therapist and what (if any) qualifications or training should be required has yet to be established (Phelps, 2017; Williams M. L. et al., 2021). Whilst therapists are governed by the standards of their professional regulating bodies, these ethical codes and practice guidelines do not cover work with psychedelics (Phelps, 2017; Brennan et al., 2021; Thal et al., 2021). Equally, many "psychedelic sitters" both inside and outside research environments are not therapeutically trained and so are not governed by any therapeutic ethical codes. As a result, there are few places offering support or guidance on the complexity of this work. Issues pertaining to the use of therapeutic touch, power dynamics, and boundary transgressions have already begun to surface (McLane et al., 2021).

As patients enter into highly vulnerable and even regressed states with psychedelics, challenging aspects of the ordinary therapeutic relationship and process are amplified (Grof, 2000; Brennan et al., 2021; Read and Papaspyrou, 2021; Thal et al., 2021; Murphy et al., 2022). Viewed through a psychotherapeutic lens, these include complex transferential issues, anxieties, and psychological defenses and enactments; all of which may impede improvement or lead to adverse outcomes if not managed appropriately (Grof, 2000; Thal et al., 2021). Questions such as how to obtain informed consent (Grof, 2000; Smith and Sisti, 2020) how best to support participants who have had spiritual experiences (Grof, 2000), or how to approach the emergence of possible new memories of abuse (Thal et al., 2021) or collective trauma (Williams M. T. et al., 2021) are just a few of the ethical dilemmas practitioners are facing. There are questions as to who

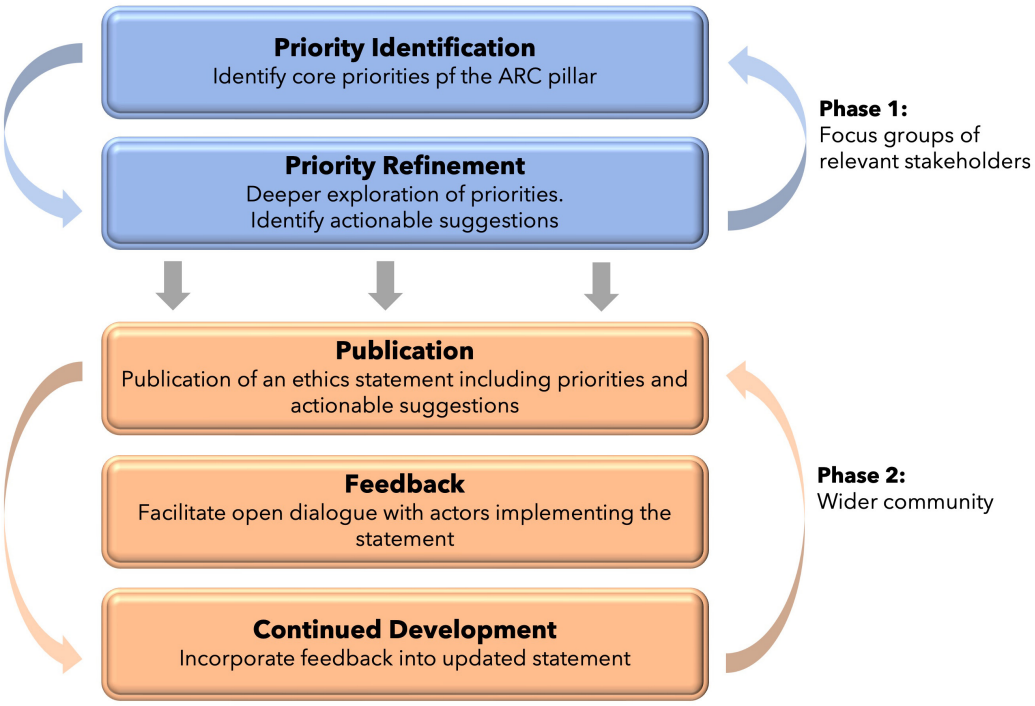

FIGURE 2
The dual-phase process for co-design of the three ethics statements of ARC. Phase 1 refers to co-design within small focus-groups. Phase 2 refers to co-design with the wider community through implementation and continued feedback.

this treatment can help and how (Murphy et al., 2022) when it might be unhelpful or harmful (Anderson et al., 2020) and how to work in culturally sensitive ways and with marginalized groups (Anderson et al., 2019; Williams et al., 2020; Williams M. T. et al., 2021).

There is a complex myriad of ethical and clinical issues therapists, sitters and participants can be presented with, which highlights the urgent need for comprehensive ethical and practice guidelines for PAT. Existing documents of this kind (Bevir et al., 2019; Carlin and Scheld, 2019; Guild of Guides, 2020; North Star Ethics Pledge, 2020; Council on Spiritual Practices, 2022; From The Conclave, 2022; Murphy et al., 2022; PAC, 2022) have typically been developed for a specific context and a specific psychedelic substance. We plan to integrate, develop, and expand on these with the involvement of relevant stakeholders such as past participants, therapists of different therapeutic orientations, sitters, and researchers which will be reported in a separate publication. Regardless of theoretical orientation, profession, or context, these guidelines will provide helpful tools for working safely and ethically. These fundamentals of practice can then be used along with others to inform trainings, certification processes, and minimum professional standards. Established standards of care will provide an essential level of professionalism and containment to practitioners supporting the therapeutic process of PAT. It would be a disservice to the depth of this therapeutic modality to suggest simple solutions to the complex questions this work presents. Rather than a set of rigid or inflexible rules, the ARC framework intends to suggest guidelines which are expected to continue to evolve as more is learned and understood about the use of PAT.

3. Co-design of the ethics statements

Co-design is an approach being widely adopted in research, policy, and service design, and refers to the active and deliberate involvement of different stakeholders in exploring, developing and evaluating initiatives (O'Brien and Vincent, 2003; Boyd et al., 2012; Blomkamp, 2018; Bevir et al., 2019; Close et al., 2021; Eseonu, 2022). Not only is co-design a tool for better decision making, but it also considers the influence of existing power dynamics and inequalities, and gives stakeholders an opportunity to address fractionization (Bevir et al., 2019). Here, we employ co-design in two ways (1) the use of focus groups in the generation of the initial ethical statements, and (2) opening up for feedback from the wider transdisciplinary communities of stakeholders involved in PAT, based on real-world practical implementation (**Figure 2**).

At the time of writing, the ethical statements for the three ARC pillars are within the first stage of development: the use of focus groups to develop the ethics statements. Given the complexity of each theme, a statement for each of the three pillars will be developed independently. The process is iterative, whereby key ethical principles are identified, explored, and molded through multiple open discussions with a focus group of different stakeholders. The stakeholders have been identified to be representative of the actors most closely implicated in the ARC pillar in question, and come from research, industry, community, anthropological, policy, and indigenous contexts. The goal of these focus groups is not to produce the *answers* but to bring important questions and potential solutions into our shared awareness, so

as to promote future focus, expansion, and research on important themes. As the coordinators of ARC, our role is to elicit the guiding principles, priorities, and wider substance of the ethical framework. Each pillar is working under an independent timeline, however, work began on this process in August 2021.

At the end of this phase of the process, a statement on ethics and practice will be produced and published for each of the three pillars. Each statement will provide recommendations, guidelines and thinking tools to provide pragmatic steps others can incorporate into their practice in their own context. Importantly, we do not view this as the end of the process. Once publicly available, we invite further feedback from the wider psychedelic community on the implementation of the framework. We envision that all three statements will hold relevance for most PAT clinical contexts and holding them all under the shared ARC framework allows for a more coherent integration with one another. It is hoped that this process will empower psychedelic research, practitioners and organizations to tackle these ethical issues within the scope of their own work.

4. Conclusion

Meeting the unique and multifaceted ethical and practice demands of PAT will take careful forethought, interdisciplinary collaboration, and humility. In line with the current developments in psychedelic medicine, and the nascent psychedelic industry, the incorporation of guidelines addressing safety, reciprocity and equity is vital yet difficult to develop and challenging to implement. The future potential of PAT can only be fully realized if the broader socio-cultural context is considered, and both patients and traditional communities are included as key stakeholders, and decision makers.

ARC represents a framework that embodies reciprocity, protects conduct, and prioritizes equity of access, valuing the knowledge and experience of traditional Indigenous healers, therapists, scientists, participants and the wider community. It is hoped that this will springboard important ethical conversations in research, therapy and public domains, so that the safe and ethical development of these treatments can be at the forefront when the field of PAT matures.

Data availability statement

The original contributions presented in this study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

MS, AM-B, and AS conceived the study. MS had oversight of the writing of the manuscript with contributions from AM-B, AS, JB, HT, and RM. All authors developed the study and revised the manuscript.

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Conflict of interest

AS was Head of Research of Drug Science. HT was Senior Research Officer at Drug Science. Drug Science receives an unrestricted educational grant from a consortium of medical psychedelics companies to further its mission, that is the pursuit of an unbiased and scientific assessment of drugs regardless of their regulatory class. All Drug Science committee members, including the Chair, are unpaid by Drug Science for their effort and commitment to this organization. As part of her position at AS and HT collaborates with industry partners who are researching the development of psychedelic treatments. AS was Scientific Advisor at Psych Capital. None of the authors would benefit from the wider prescription of medical psychedelics in any form, and none of the companies have been involved in the development and funding of this research.

The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

Aday, J. S., Bloesch, E. K., and Davoli, C. C. (2020). 2019: a year of expansion in psychedelic research, industry, and deregulation. *Drug Sci. Policy Law* 6, 1–6. doi: 10.1177/2050324520974484

Alegría, M., NeMoyer, A., Bagué, I. F., Wang, Y., and Alvarez, K. (2018). Social determinants of mental health: where we are and where we need to go. *Curr. Psychiatry Rep.* 20:95. doi: 10.1007/s11920-018-0969-9

Amaddeo, F., and Jones, J. (2007). What is the impact of socio-economic inequalities on the use of mental health services? *Epidemiol. Psychiatr. Sci.* 16, 16–19. doi: 10.1017/S1121189X00004565

Anderson, B. T., Danforth, A. L., and Grob, C. S. (2020). Psychedelic medicine: safety and ethical concerns. *Lancet Psychiatry* 7, 829–830. doi: 10.1016/S2215-0366(20)30146-2

Anderson, K. N., Bautista, C. L., and Hope, D. A. (2019). Therapeutic alliance, cultural competence and minority status in premature termination of psychotherapy. *Am. J. Orthopsychiatry* 89:104. doi: 10.1037/ort0000342

Benoit, C., McCarthy, B., and Jansson, M. (2015). Occupational stigma and mental health: discrimination and depression among front-line service workers. *Can. Public Policy* 41(Suppl. 2), S61–S69. doi: 10.3138/cpp.2014-077

Berger, M., and Sarnyai, Z. (2015). More than skin deep": stress neurobiology and mental health consequences of racial discrimination. *Stress* 18, 1–10. doi: 10.3109/10253890.2014.989204

Bevir, M., Needham, C., and Waring, J. (2019). Inside co-production: ruling, resistance, and practice. *Soc. Policy Adm.* 53, 197–202. doi: 10.1111/spol.12483

Blomkamp, E. (2018). "The promise of co-design for public policy 1," in *Routledge Handbook of Policy Design*, eds M. H. Howlett and I. Mukherjee (Milton Park: Routledge) doi: 10.4324/9781351252928-4

Boyd, H., McKernon, S., Mullin, B., and Old, A. (2012). Improving healthcare through the use of co-design. *NZ Med. J.* 125, 76–87.

Brennan, W., Jackson, M. A., MacLean, K., and Ponterotto, J. G. (2021). A qualitative exploration of relational ethical challenges and practices in psychedelic healing. *J. Humanist Psychol.* doi: 10.1177/00221678211045265 [Epub ahead of print].

Buchanan, N. T. (2021). Ensuring the psychedelic renaissance and radical healing reach the Black community: commentary on culture and psychedelic psychotherapy. *J. Psychedelic. Stud.* 4, 142–145. doi: 10.1556/2054.2020.00145

Carlin, S. C., and Scheld, S. (2019). MAPS MDMA-assisted psychotherapy code of ethics. *Multidiscip. Assoc. Psychedelic Stud. Bull.* 29, 24–27.

Celidwen, Y., Redvers, N., Githaiga, C., Calambás, J., Añaños, K., Chindoy, M. E., et al. (2023). Ethical principles of traditional Indigenous medicine to guide western psychedelic research and practice. *Lancet Reg. Health Am.* 18:100410. doi: 10.1016/j.lana.2022.100410

Chacruna (2021). *Indigenous Reciprocity Initiative of the Americas. Indigenous Reciprocity Initiative*. Available online at: https://chacruna-iri.org/ (accessed November 15, 2022).

Close, J. B., Bornemann, J., Piggin, M., Jayacodi, S., Luan, L. X., Carhart-Harris, R., et al. (2021). Co-design of guidance for patient and public involvement in psychedelic research. *Front. Psychiatry* 12:727496. doi: 10.3389/fpsyt.2021.727496

Commission for Equality in Mental Health (2020). *Mental Health for All? the Final Report of the Commission for Equality in Mental Health*. London: Centre for Mental Health

Cookson, R., Doran, T., Asaria, M., Gupta, I., and Mujica, F. P. (2021). The inverse care law re-examined: a global perspective. *Lancet* 397, 828–838. doi: 10.1016/S0140-6736(21)00243-9

Council on Spiritual Practices (2022). *Code of Ethics for Spiritual Guides*. Available online at: https://csp.org/docs/code-of-ethics-for-spiritual-guides (accessed April 15, 2023).

Devenot, N., Conner, T., and Doyle, R. (2022). Dark side of the shroom: erasing indigenous and counterculture wisdoms with psychedelic capitalism, and the open source alternative. *Anthropol. Conscious.* 33, 476–505. doi: 10.1111/anoc.12154

Eseonu, T. (2022). Co-creation as social innovation: including 'hard-to-reach'groups in public service delivery. *Public Money Manag.* 42, 306–313. doi: 10.1080/09540962.2021.1981057

Evans-Lacko, S., Aguilar-Gaxiola, S., Al-Hamzawi, A., Alonso, J., Benjet, C., Bruffaerts, R., et al. (2018). Socio-economic variations in the mental health treatment gap for people with anxiety, mood, and substance use disorders: results from the WHO World Mental Health (WMH) surveys. *Psychol. Med.* 48, 1560–1571. doi: 10.1017/S0033291717003336

From The Conclave (2022). *5-MEO-DMT Recommended Model for Best Practices*. Available online at: https://uploads-ssl.webflow.com/5dab753665b2d985ff08d69b/5dab753665b2d92d7808d6d1_Best%20Practices%20Outline%20(Finalv9).pdf (accessed April 15, 2023).

Gerber, K., Flores, I. G., Ruiz, A. C., Ali, I., Ginsberg, N. L., and Schenberg, E. E. (2021). Ethical concerns about psilocybin intellectual property. *ACS Pharmacol. Transl. Sci.* 4, 573–577. doi: 10.1021/acsptsci.0c00171

Glynos, N. G., Fields, C. W., Barron, J., Herberholz, M., Kruger, D. J., and Boehnke, K. F. (2022). Naturalistic psychedelic use: a world apart from clinical care. *J. Psychoactive Drugs* 11, 1–10. doi: 10.1080/02791072.2022.2108356

Greif, A., and Šurkala, M. (2020). Compassionate use of psychedelics. *Med. Health Care Philos.* 23, 485–496. doi: 10.1007/s11019-020-09958-z

Grof, S. (2000). *LSD-Psychotherapie*. Stuttgart: Klett-Cotta.

Grow Medicine (2022). Available online at: https://growmedicine.com/ (accessed April 15, 2023).

Guild of Guides (2020). *Code of Conduct – Guild of Guides NL*. Available online at: https://www.guildofguides.nl/code-of-conduct/ (accessed December 1, 2022).

Hutchison, C., and Bressi, S. (2021). Social work and psychedelic-assisted therapies: practice considerations for breakthrough treatments. *Clin. Soc. Work J.* 49, 356–367. doi: 10.1007/s10615-019-00743-x

Hyman, S. (2013). *Psychiatric Drug Development: Diagnosing a Crisis*. Available online at: https://dana.org/article/psychiatric-drug-development-diagnosing-a-crisis/ (accessed November 11, 2022).

Hynie, M. (2018). The social determinants of refugee mental health in the post-migration context: a critical review. *Can. J. Psychiatry Revue Canadienne de Psychiatrie* 63, 297–303. doi: 10.1177/0706743717746666

Indigenous Medicine Conservation Fund (2022). Available online at: https://www.imc.fund/ (accessed April 15, 2023).

Killion, B., Hai, A. H., Alsolami, A., Vaughn, M. G., Sehun Oh, P., Salas-Wright, C. P. et al. (2021). LSD use in the United States: trends, correlates, and a typology of us. *Drug Alcohol Depend* 223, 108715. doi: 10.1016/j.drugalcdep.2021.108715

Knifton, L., and Inglis, G. (2020). Poverty and mental health: policy, practice and research implications. *BJPsych Bull.* 44, 193–196. doi: 10.1192/bjb.2020.78

Lee, J. H., Gamarel, K. E., Bryant, K. J., Zaller, N. D., and Operario, D. (2016). Discrimination, mental health, and substance use disorders among sexual minority populations. *LGBT Health* 3, 258–265. doi: 10.1089/lgbt.2015.0135

Lu, D. (2021). *'Psychedelics Renaissance': New Wave of Research Puts Hallucinogenics Forward to Treat Mental Health*. Available online at: https://www.theguardian.com/society/2021/sep/26/psychedelics-renaissance-new-wave-of-research-puts-hallucinogenics-forward-to-treat-mental-health (accessed November 10, 2022).

McLane, H., Hutchison, C., Wikler, D., Howell, T., and Knighton, E. (2021). *Respecting Autonomy in Altered States: Navigating Ethical Quandaries in Psychedelic Therapy - Journal of Medical Ethics Blog*. Available online at: https://blogs.bmj.com/medical-ethics/2021/12/22/respecting-autonomy-in-altered-states-navigating-ethical-quandaries-in-psychedelic-therapy/ (accessed December 1, 2022).

McMillan, R. M. (2022). Psychedelic injustice: should bioethics tune in to the voices of psychedelic-using communities? *Med. Humanit.* 48, 269–272. doi: 10.1136/medhum-2021-012299

Memon, A., Taylor, K., Mohebati, L. M., Sundin, J., Cooper, M., Scanlon, T., et al. (2016). Perceived barriers to accessing mental health services among black and minority ethnic (BME) communities: a qualitative study in Southeast England. *BMJ Open* 6:e012337. doi: 10.1136/bmjopen-2016-012337

Michaels, T. I., Lester, I. I. I. L., de la Salle, S., and Williams, M. T. (2022). Ethnoracial inclusion in clinical trials of ketamine in the treatment of mental health disorders. *J. Stud. Alcohol Drugs* 83, 596–607. doi: 10.15288/jsad.2022.83.596

Michaels, T. I., Purdon, J., Collins, A., and Williams, M. T. (2018). Inclusion of people of color in psychedelic-assisted psychotherapy: a review of the literature. *BMC Psychiatry* 18:245. doi: 10.1186/s12888-018-1824-6

Murphy, R., Kettner, H., Zeifman, R. J., Giribaldi, B., Kaertner, L., Martell, J., et al. (2022). Therapeutic alliance and rapport modulate responses to psilocybin assisted therapy for depression. *Front. Pharmacol.* 12:788155. doi: 10.3389/fphar.2021.788155

Nichols, D. E. (2020). Psilocybin: from ancient magic to modern medicine. *J. Antibiot.* 73, 679–686. doi: 10.1038/s41429-020-0311-8

North Star Ethics Pledge (2020). Available online at: http://northstar.guide/ethicspledge (accessed November 14, 2022).

Nutt, D., Erritzoe, D., and Carhart-Harris, R. (2020). Psychedelic psychiatry's brave new world. *Cell* 181, 24–28. doi: 10.1016/j.cell.2020.03.020

Nutt, D., Spriggs, M., and Erritzoe, D. (2022). Psychedelics therapeutics: what we know, what we think, and what we need to research. *Neuropharmacology* 223:109257. doi: 10.1016/j.neuropharm.2022.109257

O'Brien, K. M., and Vincent, N. K. (2003). Psychiatric comorbidity in anorexia and bulimia nervosa: nature, prevalence, and causal relationships. *Clin. Psychol. Rev.* 23, 57–74. doi: 10.1016/S0272-7358(02)00201-5

PAC (2022). *PAC - Code of Ethics*. Available online at: https://www.psychedelicassociation.net/code-of-ethics (accessed November 14, 2022).

Pachter, L. M., Caldwell, C. H., Jackson, J. S., and Bernstein, B. A. (2018). Discrimination and mental health in a representative sample of African-American and Afro-caribbean youth. *J. Racial. Ethn. Health Disparities* 5, 831–837. doi: 10.1007/s40615-017-0428-z

Peluso, D., Sinclair, E., Labate, B., and Cavnar, C. (2020). Reflections on crafting an ayahuasca community guide for the awareness of sexual abuse. *J. Psychedelic Stud.* 4, 24–33. doi: 10.1556/2054.2020.00124

Petranker, R., Anderson, T., and Farb, N. (2020). Psychedelic research and the need for transparency: polishing Alice's looking glass. *Front. Psychol.* 11:1681. doi: 10.3389/fpsyg.2020.01681

Phelps, J. (2017). Developing guidelines and competencies for the training of psychedelic therapists. *J. Humanist Psychol.* 57, 450–487. doi: 10.1177/0022167817711304

Phelps, J., Shah, R. N., and Lieberman, J. A. (2022). The rapid rise in investment in psychedelics—cart before the horse. *JAMA Psychiatry* 79, 189–190. doi: 10.1001/jamapsychiatry.2021.3972

Pilecki, B., Luoma, J. B., Bathje, G. J., Rhea, J., and Narloch, V. F. (2021). Ethical and legal issues in psychedelic harm reduction and integration therapy. *Harm. Reduct. J.* 18, 1–14. doi: 10.1186/s12954-021-00489-1

Psymposia and New York Magazine Cover Story (Power Trip). (2022). Available online at: https://www.psymposia.com/powertrip/ (accessed April 15, 2023).

Rea, K., and Wallace, B. (2021). Enhancing equity-oriented care in psychedelic medicine: utilizing the EQUIP framework. *Int. J. Drug Policy* 98:103429. doi: 10.1016/j.drugpo.2021.103429

Read, T., and Papaspyrou, M. (eds) (2021). *Psychedelics and Psychotherapy: the Healing Potential of Expanded States*. Vermont: Park Street Press.

Reiff, C. M., Richman, E. E., Nemeroff, C. B., Carpenter, L. L., Widge, A. S., Rodriguez, C. I., et al. (2020). Psychedelics and psychedelic-assisted psychotherapy. *Am. J. Psychiatry* 177, 391–410. doi: 10.1176/appi.ajp.2019.19010035

Schenberg, E. E. (2018). Psychedelic-assisted psychotherapy: a paradigm shift in psychiatric research and development. *Front. Pharmacol.* 9:733. doi: 10.3389/fphar.2018.00733

Schwarz-Plaschg, C. (2022). Socio-psychedelic imaginaries: envisioning and building legal psychedelic worlds in the United States. *Eur. J. Futur. Res.* 10, 1–16. doi: 10.1186/s40309-022-00199-2

Shim, R., Koplan, C., Langheim, F. J., Manseau, M. W., Powers, R. A., and Compton, M. T. (2014). The social determinants of mental health: an overview and call to action. *Psychiatr. Ann.* 44, 22–26. doi: 10.3928/00485713-20140108-04

Smith, W. R., and Appelbaum, P. S. (2022). Novel ethical and policy issues in psychiatric uses of psychedelic substances. *Neuropharmacology* 216:109165. doi: 10.1016/j.neuropharm.2022.109165

Smith, W. R., and Sisti, D. (2020). Ethics and ego dissolution: the case of psilocybin. *J. Med. Ethics* [Epub ahead of print]. doi: 10.1136/medethics-2020-106070

Stephan, K. E., Bach, D. R., Fletcher, P. C., Flint, J., Frank, M. J., Friston, K. J., et al. (2016). Charting the landscape of priority problems in psychiatry, part 1: classification and diagnosis. *Lancet Psychiatry* 3, 77–83. doi: 10.1016/S2215-0366(15)00361-2

Strauss, D., de la Salle, S., Sloshower, J., and Williams, M. T. (2022). Research abuses against people of colour and other vulnerable groups in early psychedelic research. *J. Med. Ethics* 48, 728–737. doi: 10.1136/medethics-2021-107262

Thal, S. B., Bright, S. J., Sharbanee, J. M., Wenge, T., and Skeffington, P. M. (2021). Current perspective on the therapeutic preset for substance-assisted psychotherapy. *Front. Psychol.* 12:617224. doi: 10.3389/fpsyg.2021.617224

Watt, G. (2018). The inverse care law revisited: a continuing blot on the record of the national health service. *Br. J. General Practice* 68, 562–563. doi: 10.3399/bjgp18X699893

Weich, S., Lewis, G., and Jenkins, S. P. (2001). Income inequality and the prevalence of common mental disorders in Britain. *Br. J. Psychiatry* 178, 222–227. doi: 10.1192/bjp.178.3.222

Williams, K., Romero, O. S. G., Braunstein, M., and Brant, S. (2022). Indigenous philosophies and the 'Psychedelic Renaissance'. *Anthropol. Conscious.* 33, 506–527. doi: 10.1111/anoc.12161

Williams, M. L., Korevaar, D., Harvey, R., Fitzgerald, P. B., Liknaitzky, P., O'Carroll, S., et al. (2021). Translating psychedelic therapies from clinical trials to community clinics: building bridges and addressing potential challenges ahead. *Front. Psychiatry* 12:737738. doi: 10.3389/fpsyt.2021.737738

Williams, M. T., Reed, S., and Aggarwal, R. (2020). Culturally informed research design issues in a study for MDMA-assisted psychotherapy for posttraumatic stress disorder. *J. Psychedelic Stud.* 4, 40–50. doi: 10.1556/2054.2019.016

Williams, M. T., Reed, S., and George, J. (2021). Culture and psychedelic psychotherapy: ethnic and racial themes from three black women therapists. *J. Psychedelic. Stud.* 4, 125–138. doi: 10.1556/2054.2020.00137

World Health Organization (2022). *World Mental Health Report: Transforming Mental Health for All*. Geneva: WHO.

Wortzel, J. R., Turner, B. E., Weeks, B. T., Fragassi, C., Ramos, V., Truong, T., et al. (2020). Trends in mental health clinical research: characterizing the ClinicalTrials.gov registry from 2007–2018. Naudet F, editor. *PLoS One* 15:e0233996. doi: 10.1371/journal.pone.0233996

Yaden, D. B., Yaden, M. E., and Griffiths, R. R. (2021). Psychedelics in psychiatry—keeping the renaissance from going off the rails. *JAMA Psychiatry* 78, 469–470. doi: 10.1001/jamapsychiatry.2020.3672

Yockey, A., and King, K. (2021). Use of psilocybin ("mushrooms") among US adults: 2015–2018. *J. Psychedelic Stud.* 5, 17–21. doi: 10.1556/2054.2020.00159

Yockey, A., Vidourek, R. A., and King, K. A. (2020). Trends in LSD use among US adults: 2015–2018. *Drug Alcohol Depend* 212, 108071. doi: 10.1016/j.drugalcdep.2020.108071

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Henri Michaux's program for the psychedelic humanities

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This article presents an analytical reading of the extraordinarily rich cultural production around drugs by the 20th-century French poet, writer, critic, and visual artist Michaux (1899–1984). Over about a decade, from the mid-1950's, the otherwise habitually sober Michaux wrote five books, included within which were dozens of drawings, and made one half-hour film, charting his adventures as an initially reluctant yet persistent psychonaut, principally with mescaline, but also with psilocybin, LSD, and cannabis. This has rightly been described as one of the most creative cultural explorations of mescaline. It is more extensive, texturally complex, and esthetically demanding than Aldous Huxley's far better known near-contemporaneous published work on psychedelics in English, which is well-known within and arguably foundational for psychedelic studies. Yet, this very complexity, as well as the national-linguistic context of its articulation—there was no mass psychedelic counterculture in France—have limited wider engagement with it. I argue that Michaux's esthetic reconstruction of psychedelics' effects on his creative brain can be read as a "program" for the emerging field of the psychedelic humanities and that it makes a substantial contribution, which I sketch in outline here, to the following of core concerns: (1) the role of psychedelics in enhancing "creativity"; (2) conceptualization of the politics of psychedelics; and (3) the meaning and value of psychedelic mysticism. I aim to show that Michaux's work on drugs has much to contribute to the cultural understanding of psychedelics today and accordingly that this unjustly neglected classic of French—and global—drug culture deserves to be far better known.

KEYWORDS

Michaux, psychedelic, mescaline, psilocybin, esthetics, politics, autoheteronomy, anthropotechnics

1. Introduction

1.1. Background

The five books of writing, which also contain dozens of drawings, and the half-hour film, which issued from Henri Michaux's psychonautic self-experimentation with mescaline during the 1950's and 1960's (Michaux, 1956, 1957, 1959, 1961, 1966; Duvivier, 1963), have been described as the century's "most sustained and creative" engagement with this particular psychedelic (Jay, 2019;

p. 211).[1] They also have more to say about cannabis, psilocybin, and LSD, although their main focus, like mine in this article, is on mescaline. In part because of their textural complexity within and across three distinct media (writing, drawing, and film) and the extremes of ambivalence they record about the various experiences, as well as the national-linguistic context of their articulation—there was no mass psychedelic counterculture in France—they have not been read nearly as widely or attentively as they deserve. Put more positively, the resurgence of cultural interest in psychedelics, which has accompanied their "renaissance" (Sessa, 2012) within psychiatry, allows new questions to be posed about this hitherto underappreciated material.[2]

For largely contingent reasons of translation, the uptake of Michaux's work during the American psychedelic counterculture was more limited than it might have been: the first but also the most skeptical book of the series, *Misérable Miracle* (Michaux, 1956), was published in English translation early enough, by the San Franciscan countercultural publisher City Lights, in 1963 (Michaux, 1963a).[3] The fourth, *Connaissance par les gouffres* (Michaux, 1961), also appeared in translation in the same year, as *Light Through Darkness* (Michaux, 1963b), but of all the books in the series, this is the one most constrained by the psychotomimetic paradigm. However, the second, decidedly more enthusiastic, upbeat, and in some respects most mystical book, *L'Infini turbulent* (Michaux, 1957)—the one most attuned to the temperament of the American psychedelic counterculture—did not appear in English until much later, in the mid-1970's (Michaux, 1975). While Michaux's influence on the counterculture was limited, he was well acquainted with several of its key texts, concerns, and people: for example, in *L'Infini turbulent* (Michaux, 2001,[1957]; p. 814), he echoed Huxley's discussion (Huxley, 2004 [1954]; p. 34–5) of the *Bardo Thödol* ("*Tibetan Book of the Dead*"), and he met Allen Ginsberg in Paris in 1958 (Ginsberg, 1995; Morgan, 2006; p. 274; p. 346), gave him a signed copy of *L'Infini turbulent* (Michaux, 1957), and the pair subsequently corresponded (Martin, 2003; p. 549).[4]

Alongside these contingencies of translation, which I believe largely explain the limited uptake of Michaux's work by the American counterculture, it is worth noting that in key respects Michaux's general outlook on psychedelics was narrower and somewhat more uptight: he only took laboratory-synthesized mescaline rather than peyote and he flaunts this decision by

1 This description of Michaux's work has proven to be more controversial than I had initially anticipated, factually and politically. In the confines of this article, I am not in a position to independently substantiate it, since to do so would require a comprehensive treatment of major mescaline-influenced creative work and wider cultural practice during the period; however, the claim is made within precisely such an extensive cultural history of mescaline (Jay, 2019) and the purpose of citing it here is to give some initial indication of the significance of Michaux's work and to invite the reader to devote some of their time to engaging with my analysis. Nothing turns argumentatively, for me, on Michaux's being preeminent in the way Jay's comment implies. Politically speaking, the claim could be felt to ignore, or as the more dramatic verb would have it, to *erase*, the very significant work of the Native American Church in using peyote over the century for "postcolonial healing" (Calabrese, 2013). Without wishing to downplay the significance of the NAC's work, I would suggest that its therapeutic ritual use of peyote is not primarily creative in the sense in which artists and psychologists understand this term, in particular, in so far as it rests on a "core therapeutic emplotment" within a "very uniform" ceremonial structure (Calabrese, 2013; p. 124). Controversially, for the psychedelic humanities today, and surprisingly given that he had traveled extensively in Central and South America earlier in his life, Michaux was not interested in peyote or in indigenous uses of that mescaline-containing cactus; his interest was in just one of its spectrum of alkaloids in one of its laboratory-synthesized forms, mescaline hydrochloride. I discuss the political significance of this choice in §3.

2 Underappreciated but not unread: early book-length studies of Michaux's drug writing by psychiatrists and doctors (Ajuriaguerra and Jaeggi, 1963; Loras, 1967) approached it largely in terms of the psychotomimetic paradigm. The literary critic and philosopher Maurice Blanchot is dismissive of such readings in a characteristically perceptive article first published in 1958 (Blanchot, 1966), perforce covering only the first two books: "It would be more instructive to speak of a simple attitude such as impatience, which also changes the experience of time." (86) This and all subsequent translations from French are my own. Prompted by the title of the second book, *L'Infini turbulent* (Michaux, 1957), Blanchot suggests that mescaline allows Michaux an unsettling experience of the infinite (81) and enables him to sketch "a new form of literature" (87). A notable later monograph (Brun, 1999) adopts a psychoanalytic approach, likening Michaux's mescaline writings to Freud's 1884 essay on cocaine (42) and argues that psychedelics enabled Michaux to escape from feelings of being imprisoned in his body which he had experienced since childhood (65). Anne Brun also suggests that the abundance of onomatopoeia is an attempt to render a language of the body reminiscent of the moment when the infant discovers language (93), an argument clearly indebted to that advanced about the reemergence of the 'semiotic' in poetic language (Kristeva, 1974). Literary critic Max Milner devotes a detailed and astute chapter to Michaux's drug writings in his book on drugs and the imagination (Milner, 2000), underlining Michaux's "ascetic" (374) and "agonistic" (403) relationship to the substances. Many monographs on Michaux's work as a whole mention the mescaline decade somewhat disapprovingly (e.g., Bowie, 1973; Parish, 2007). Peter Broome suggested that mescaline provided Michaux with "an incredible new projector for his inner cinema" (Broome, 1977; p. 89). The notes and other scholarly apparatus in the Pléiade edition of Michaux's works (Michaux, 2001, 2004) are an extremely rich resource, extensively exploited in the present article. Devenot et al. (2022) suggested that even to speak of a "psychedelic renaissance" is to fall for a confidence trick on the part of pharmaceutical entrepreneurs and "psychedelic pundits" keen to monetize psychedelics while erasing indigenous cultures' stewardship of plant medicines and maintaining prohibition.

3 The 1972 French edition of *Misérable Miracle* was much more enthusiastic about mescaline than the 1956 first edition, which was translated into English (Michaux, 1963a), thanks to the addition of "Addenda" much more in keeping with the more mystical and positive appreciation of the drug in *L'Infini turbulent* (Michaux, 1957).

4 All page references to Michaux's published work in this article are given to the scholarly editions of reference, volumes 2 and 3 of Michaux's *Œuvres complètes* in the Bibliothèque de la Pléiade (Michaux, 2001, 2004), rather than to the various original editions. Two editions of *L'Infini turbulent* appeared during Michaux's lifetime: the original edition of 1957 and a slightly revised edition published in 1964. The discussion about the *Bardo Thödol* occurs in both editions.

giving the structural formula of mescaline hydrochloride as one of the two epigraphs to *Misérable Miracle* (Michaux, 1956, 2001; p. 618). Moreover, despite having written about his travels in Central America earlier in his life (Michaux, 1929) and being familiar with some indigenous uses of peyote - he mentions the Huichol and the Tarahumara, as well as some of the geometric features of Aztec art and architecture on several occasions, for example - he couches his own interest resolutely in terms of Western biomedicine. He does not discuss the role of peyote in "postcolonial healing" (Calabrese, 2013) by the Native American Church, nor the significant stewardship of the peyote experience by that institution, and it is possible that he was unaware of it. As the Beat poet, essayist, and stalwart of the American counterculture Michael McClure noted, "A mescaline high is not a peyote high" (McClure, 1966; p. 42), and Michaux was aware that he was exposing himself to just one of the several psychedelic alkaloids in the peyote cactus.[5] This preference for synthetic mescaline and relative indifference to indigenous practices also placed Michaux at variance with two significant earlier French authors on peyote: pharmacist, entrepreneur, and occultist Alexandre Rouhier, who dedicated his classic study to "THE SPIRIT OF CUAUHTEMOC" (Rouhier, 1927; p. iii, capitalization in original) and Antonin Artaud (Artaud, 1945).[6] I discuss the political ramifications of these choices of Michaux's in Section 3 below.

In France, there was little interest in Michaux's drug books initially, with the first edition (Michaux, 1956) selling only around 250 copies. He nevertheless acquired a certain notoriety for his experiments with psychedelics and a planned public screening of his film was banned in November 1968 (Michaux, 2004; p. 1540), though this must also be attributed to the generalized repressive crackdown following the protests of Mai '68. Prohibitionist drug law in France, as in other countries, significantly tightened with regard to mescaline during the period in which Michaux experimented with the substance and its immediate aftermath: while his particular use of mescaline was, in the strictest of senses, legal when he began his experimentation in the mid-1950's, it was no longer legal with the passing of the 1970 law explicitly prohibiting its use and whether his writings about drugs fell foul of other prohibitionist provisions is a moot point.[7]

The remainder of this Introduction will outline the settings in which Michaux took psychedelics, his typical doses, his aim or "set," and his familiarity with contemporaneous biomedical research on psychedelics, in which the psychotomimetic paradigm was dominant, before the substantive sections of the article argue for a reading of his work as a programmatic template for the psychedelic humanities.

1.2. Setting

Most of Michaux's drug experiences took place at home, in his flat on the Rue Séguier in central Paris. They began on 2 January 1955 (Pic, 2014; p. 9), when Michaux, like the century, was in his mid-fifties and already a very well established and well connected, yet by repute, rather an aloof writer, poet, and visual artist.[8] The first experience took place in the company of some five friends or acquaintances and his housekeeper; the mescaline was probably supplied by psychiatrist Dr. Julian de Ajuriaguerra (Ouvry-Vial, 1989; p. 200; Martin, 2003; p. 518). Most of the subsequent mescaline experiences were conducted with others present, or in an adjacent room, although Michaux occasionally took the drug alone, but only after having notified a friend by telephone, who would ring back 3 h later to check on him (Martin, 2003; p. 520).

Michaux's first experience of psilocybin (recounted in Michaux, 1961) took place in 1958 in the very different setting of the Sainte-Anne psychiatric hospital in Paris, as part of a clinical study (Delay et al., 1959) overseen by the charismatic director of its Clinic of Mental Illnesses and Illnesses of the Brain and also Chair of Psychiatry in the Paris Faculty of Medicine, Jean Delay. Delay was a friend of Michaux's and is generally remembered for his role in

5 I am grateful to one of the reviewers of this article for introducing me to McClure's remarkable body of work and, in particular, the *Meat Science* essays. McClure was inspired to write his *Drug Notes* after reading a translation of an excerpt from *Misérable Miracle* in the *Evergreen Review* (McClure, 1993; p. ix).

6 Rouhier's magnificent dedication reads in full: "I DEDICATE THIS BOOK TO THE SPIRIT OF CUAUHTEMOC, 'THE EAGLE WHO DESCENDED', HIGH PRIEST OF THE AZTEC RELIGION, CUTTER OF THE PEYOTE AND LAST EMPEROR OF THE ANAHUAC, WHOM THE CHRISTIAN CONQUISTADORS, HUNGRY FOR GOLD, TORTURED BY FIRE AND HANGED ON THE TWENTY-FIRST OF AUGUST IN THE YEAR OF GRACE M D XX II" (Rouhier, 1927; p. iii, capitalization in original).

7 Before 1970, the principal domestic drug control legislation in France was the 1916 law (Yvorel, 2012) and in 1957, mescaline was added by administrative decision to the list of substances under the purview of that law. Nevertheless, two peculiarities of 20th-century French drug control law deserve mention: first, that between the passing of the 1916 law and the tightening of domestic legislation in 1970, neither the mere possession of controlled substances in private without intent to sell them on nor their use in private were prohibited by law (Marchant, 2018; Black, 2022), even though police and prosecutors would often behave as though they were (Retaillaud-Bajac, 2009; p. 231-271). Second, to this day, French law continues to place highly unusual emphasis on punishing what is characterized as proselytising for drugs in Article L3421-4 of the Code de la santé (Légifrance, 2007): in effect, offering any representation that is not harm-focused. This internationally unusual restriction continues to exert an inhibiting effect on cultural production, grown-up public debate, and, in turn, on the allocation of funding for research on psychedelics (Chayet, 2020). In Michaux's case, the ambivalence characterizing his published works on drugs makes it difficult to construe them straightforwardly as proselytism for drugs and various harms are mentioned, although a plausible argument could certainly have been made in that direction and might well have been, had he been less well connected and more widely read.

8 Michaux had emigrated to Paris from his native Belgium in the 1920s and gone on to travel widely in Central and South America, the Middle East, and East Asia, before settling for good in Paris (Ouvry-Vial, 1989; Martin, 2003). He had lived alone but for a housekeeper since the death of his wife in a domestic accident in 1948 (Martin, 2003; p. 441-2).

the discovery of the antipsychotic effects of chlorpromazine in 1952 (Thuillier, 1999; Healy, 2004; p. 88), but he had also been leading clinical studies with mescaline from the mid-1940's (Delay and Gérard, 1948; Dassonneville, 2021; p. 89), following on from similar research conducted at the same institution on mescaline, by others, in the preceding decade (Dassonneville, 2021; p. 80). Delay also worked with LSD throughout the 1950's (Thuillier, 1999; Dubus, 2022). His experiments with psychedelics on psychiatric in-patients at Sainte-Anne had no regard for the role of "setting" or "set" and, even by the psychiatric standards of the day, were in some cases remarkable for their cruelty and obliviousness to patient consent (Dubus, 2022). Nevertheless, in the decidedly different quality distinguishing Michaux's two narrated experiences with psilocybin, recounted sequentially in *Connaissance par les gouffres* (Michaux, 2004; p. 16-36), the first at the hospital under clinical observation (but none of the other constraints imposed on in-patient subjects) and the second at home, the significance of "setting" was already registering in France in the early 1960's, despite Delay's indifference yet on the literary fringes of his entourage, in Michaux's work in the psychedelic humanities.

1.3. Dose, substance, and aim or "set"

Generally, Michaux took mescaline hydrochloride in doses under 0.3 g, though on one occasion, he took 0.6 g, "six times the sufficient dose for me," owing to "an error of calculation" (Michaux, 2001; p. 723)—a "strange error" indeed (Blanchot, 1966; p. 83) given that it came in capsules of 0.1 g—and had a very intense "bad trip," only calmed by two home visits from his sympathetic doctor later in the day.[9] In other words, Michaux preferred to consume mescaline in quantities just above the typical threshold dose (his "sufficient" dose) of 0.1 g and rise to an intermediate dose of 0.3 g (Erowid, 2015), presumably so that he could still steer the trip and "Observe the derangements [*les dérèglements*], the erroneous connections in thought, the errors of the thinking instrument, now upskittled, and the illusions of the human being who possesses this fragile thinking instrument." (Michaux, 2001; p. 770). That this constitutes a relatively open and exploratory "set" is a point to which I return in Section 2 below.

1.4. Contemporaneous biomedical research on psychedelics and literary precursors

Several years before commencing his self-experiments with mescaline, Michaux began reading widely in contemporaneous psychiatric research on psychedelics (Martin, 2003; p. 514) and the drug works taken together contain around 80 note references to scientific publications (Halpern, 1998; p. 19). Six of these are elogios references to Delay, who thereby figures as Michaux's "scientist-double" (Halpern, 1998; p. 19), a relationship somewhat reminiscent of the Anglophone writer-psychiatrist dyad of Aldous Huxley and Humphry Osmond (Bruchez, 2007; Dyck, 2008). Delay returned the favor by concluding an article on LSD with reference to Michaux's evocation of the "miserable miracles" of a "neighboring experience," in other words with mescaline (Delay and Benda, 1958; p. 342), and by prefacing his film (Duvivier, 1963), to some extent thereby testifying to its scientific interest. Michaux was also on friendly terms with pioneering mycologist Roger Heim, beginning a correspondence of some 20 letters with him in 1958; Heim supplied Michaux with synthetic psilocybin and psychedelic mushrooms (Michaux, 2004: xii, 1485). Michaux also read older scientific works on peyote and mescaline by Ellis (1898), Rouhier (1927), and Lewin (1928) (Martin, 2003; p. 514-5). He was well versed too in more literary engagements with psychoactive drugs, notably Thomas De Quincey's *Confessions*, a foundational text for psychonautic drug-writing (Partridge, 2018), work by Baudelaire (1860) on cannabis and opium, and the more proximate engagements, with mescaline, by Jean-Paul Sartre in the 1930's [Sartre's own account was published posthumously in Sartre (2010), but had circulated in unpublished form and is mentioned in Merleau-Ponty (1942, 1945); see also Dassonneville (2021) and Farrell (2021)] and by Artaud in the 1940's (Artaud, 1945).

1.5. The psychotomimetic paradigm

As well as Michaux's likely supplier, Ajuriaguerra was the co-author of the first monograph on Michaux's drug writing (Ajuriaguerra and Jaeggi, 1963), which construed the experiences largely in terms of the "model psychoses" or "psychotomimetic" paradigm (Swanson, 2018) dominant in psychiatric research on psychedelics during the 1950's but dating back, as a paradigm for the effects of psychoactive drugs more widely, to the mid-nineteenth-century work of Jacques-Joseph Moreau ("de Tours") on cannabis, among other substances (Foucault, 2003; p. 280-84). Ajuriaguerra and his co-author's reliance on this paradigm are unsurprising given its dominance in the day and the way Michaux indulges in largely speculative comparisons between his experience and what he observed of the behavior of patients at the Sainte-Anne and other psychiatric hospitals, where he was seemingly permitted fairly free access to wander the wards making amateur observations. Nevertheless, adherence to this now obsolete paradigm is by no means complete, or sustained evenly, in the works; as the substantive part of this article now aims to show, they survive the obsolescence of that paradigm.

2. The psychedelic enhancement of "creativity"

Although the main focus of research in the "psychedelic renaissance" to date has been on the medical and therapeutic potential of psychedelics for treating diagnosed mental health

9 I shall return to reflect on the significance of this particular trip in §2, below. When he felt things were getting out of hand, Michaux also sometimes resorted variously to the following real and imagined antagonists: sugar, oranges, benzodiazepine chlordiazepoxide (Librium), nicotinamide (vitamin B3), Véricardine (a heart medication containing phenobarbital), and even the stimulant camphor (Solucamphre) (Halpern, 1998; p. 106).

disorders, the question of whether psychedelics can enhance creative thinking more widely, and if so how, remains open (Sessa, 2008) and has recently been posed in relation to scientific creativity specifically (Gandy et al., 2022). "Creativity" is a particular focus in research on microdosing, whether in the form of analyses of self-reports (Anderson et al., 2019; Petranker et al., 2020) or an ongoing RCT study (Murphy et al., 2021), the results of which are eagerly awaited given suspicions that self-reported benefits of microdosing might be placebo effects.[10]

"Creativity" was a preoccupation of pre-prohibition research on psychedelics, as is indicated by the name of Al Hubbard's Commission for the Study of Creative Imagination, established in 1955, to extend the study of these substances beyond medical use. "Creativity" was a particular focus of research on the West Coast of the United States, the cradle of the often forgotten "technophilic" counterculture (Turner, 2006), notably undertaken under the auspices of Willis Harman and Myron Stolaroff's International Foundation for Advanced Study in Menlo Park, California, on the fringes of Stanford University; some of this research involved, as participants, Douglas Engelbart and other pioneering computer developers from his Augmented Human Intellect Research Center at the Stanford Research Institute (Markoff, 2005; p. 67). Rather than research involving art or artists, "creativity" in this strand of pre-prohibition research was largely understood as the resourceful and successful solution of technical problems, in a manner akin to the popular-psychological notion of "lateral thinking" (De Bono, 1970).[11]

The most significant of these pre-prohibition "creativity" experiments, using mescaline (Harman et al., 1966), involved as participants engineers, architects, and scientists, each of whom was asked to bring to the study one unresolved technical problem, on which they had been working for some time and had become "stuck." The study concluded that above-threshold but moderate doses of the psychedelic, administered under conditions of "appropriate expectancy" (Harman et al., 1966; p. 216), enabled "enhanced ability to recognize patterns" (219), "deautomatization" (221), "[h]igh movitation to obtain closure; an appetite for elegance" (224), and the "[c]apacity to visualize the completed solution in its entirety" (224).[12] For successful "creative" problem-solving by humans, this study suggested that technical, motivational, perceptual, and cognitive aptitudes are all required. One of the abovementioned microdosing studies (Anderson et al., 2019), based on a grounded theory analysis of self-reports by microdosers, concluded that "creativity" came third in a list of benefits ascribed to the practice, after "improved mood" and "improved focus" and before "self-efficacy" and "improved energy." Most of these are recognizably similar, despite the different language, to many of the benefits registered in the landmark 1966 macrodose study (Harman et al., 1966), which made a point of trying to focus narrowly on the technical problems and aptitudes required to resolve them and preparing participants pre-administration to avoid addressing problems of a personal nature during the trip. For professional problem-solvers, it is reasonable to suppose that "improved mood" would also follow from a successful resolution of the problem. My point is not to indulge in idle speculation about the relationship between two very different types of studies conducted under very different conditions some half a century apart but rather to observe that, conceptually speaking, work on the psychedelic enhancement of creativity tends to look for a cluster or multiplicity of aptitudes in which the perceptual, cognitive, and motivational are closely intertwined. In so far as scientists draw their understanding of "creativity" from the surrounding culture, in a process of abstraction and reconstruction that is explicitly built into the grounded theory methodology of the microdosing study (Anderson et al., 2019), their understanding and what they look for empirically will to some extent reflect the fuzziness, or

10 In this section, I generally place "creativity" within scare quotes because (a) it is notoriously difficult to define and measure psychologically (Said-Metwaly et al., 2017); (b) it has largely displaced the more venerable and broader concept of the esthetic, which I feel would in many ways be preferable; (c) despite the near-universal scientific and popular consensus that it is a good thing, it has a sinister history of entanglement with the politics of corporate "innovation"and technocratic rule, reflected in the favor it finds today among microdosing Silicon Valley tech workers who design and refine the digital instruments of global governance.

11 Their explicit technical-motivational conception of psychedelically enhanced creativity in terms of improved problem-solving ability and greater willingness to succeed was prominent in pre-prohibition scientific research and is neatly encapsulated in the title of one influential book-length study: *LSD: The Problem-Solving Psychedelic* (Stafford and Golightly, 1967). Harman et al. (1966) is also a foundational point of reference in this book, which collates the accounts of problem-solving scattered through a biomedical literature of the day which was more directly orientated toward therapeutic use. The authors envisage psychedelics beyond their medical use as aiding "the alleviation of those countless problems by which man [*sic*] is beset" (Stafford and Golightly, 1967; p. 30), or in other words for the general enhancement of human activity by solving problems in all manner of areas: "business, pleasure, sickness, health, birth, death, ad infinitum" (30).

12 The "primary active agent" in the experiments that were written up was 200 mg of mescaline sulfate (Harman et al., 1966; p. 216). However, in common with a certain amount of other early research (for instance, Martin, 1962), the psychedelic was co-administered in this study with a stimulant, in this case, methedrine (methamphetamine) but with scant discussion of the likely impact of the second drug. One of the co-authors, psychologist James Fadiman, later gave an evasively euphemistic account of the second part of this drug combination: "The dose was 50 micrograms of LSD, preceded by *energizers*." (Fadiman, 2011; p. 168, emphasis added), the reference to LSD probably being to the informal preliminary sessions before those written up. While it is hardly surprising that biomedical researchers tentatively resuming work on psychedelics in the renaissance should have steered well clear of methamphetamine, now the most abhorred of substances (Parsons, 2014), it is remarkable that the impact of co-administration of psychedelics with stimulants in this and other early research has yet to be discussed or replicated.

clustered multiplicity, which characterizes this concept in ordinary usage.[13]

As Mason et al. (2021) note, "Creativity is an essential cognitive ability linked to all areas of our everyday life, allowing us to adapt to an ever-changing environment and come up with ways to solve problems." Creativity can in this sense be considered an essential human aptitude. Nevertheless, ordinary cultural usage does also recognize one particular activity more especially concerned with creativity than others: the making of art. Even those who concur with Joseph Beuys saying "Everyone is an artist" (Michaud, 1988; p. 36) cannot escape the fact that in the current social division of labor, those we call artists are especially concerned with creativity. It is plausible to suppose that creative artists who have experimented with psychedelics might have something substantial to contribute to the cultural conversation from which scientific conceptualizations of elements within the creativity cluster are drawn and it is in this spirit that I turn to Michaux.[14] What can he add? His initial verdict (Michaux, 1956) on the impact of mescaline on his creative imagination is entirely negative: "Mescaline diminishes the imagination. It castrates the image, desensualizes it. It makes images that are 100% pure, laboratory grade. [...] Thus it is the enemy of poetry, of meditation and above all of mystery." (Michaux, 2001; p. 674). Furthermore, he complains of the drug's aftereffects: "Two weeks after the last experiment I was still unable to write except repetitively, in the most banal of ways; this is largely due to a lack of (natural) images [...]. Even in conversation, although more garrulous, less restrained, I had become a pauper as far as images are concerned." (Michaux, 2001; p. 674). The mescaline visuals are dismissed as a "tacky retinal circus" (Michaux, 2001; p. 632) and although he does not use the word, Michaux seems to object, in effect, to their *kitsch*: they are "*shockingly like advertisements*" (Michaux, 2001; p. 624, italics original). Their garish colors, their insistence, and their schematic or abstract quality, which detaches them from the realm of sensuous experience, make them "the enemy" of "poetry," in Michaux's initial judgment. We may not share the rather conventional assumptions implicit in this verdict about what making (good) art, or conversation, involves—the production of sensuously rich "images"—but if we compare Michaux's experience with the findings of the 1966 creativity study discussed in the preceding paragraph (Harman et al., 1966), substituting "images" for "solutions," then it seems that his early experiences of mescaline ran counter to those of the engineers and scientists enrolled on that study and resulted, so to speak, in a lowering of the rate of artistic production.

In his early encounters with the drug, even before the fourth experiment's dosing "error," mescaline seems to frustrate Michaux's capacity to produce creative work. The mescaline experiences are initially an unwelcome disruption to his settled ways of working creatively. Yet, they lead eventually to a body of work which is remarkable not for the "images" it contains, less for its "content," and more for how, by working through the adversity of that disruption, Michaux undertakes a formal and textural esthetic reconstitution of the pullulating profusion—the sense of sprouting and generative multiplicity, of chaotic creative potentiality—which characterizes his experience. The first two books in the series (Michaux, 1956, 1957) adopt a novel textual practice whereby sparse marginal annotations in italics sit alongside the main body of the text, effectively introducing two columns of text on each page.[15] Michaux commented in the preface to *Misérable Miracle* (Michaux, 1956): "In this book the margin occupied more by shortcuts than titles expresses very insufficiently the overlappings [*les chevauchements*], a phenomenon always present with Mescaline [...]. No other 'devices' have been used. Too many would have been needed." (Michaux, 2001; p. 620) A double text is thereby created, which is, as it were, doubled again by the inclusion of the drawings in the first three of the five books (Michaux, 1956, 1957, 1959), and the writing and drawing are in turn doubled by

13 Given that terms used to name elements within this creativity cluster vary between studies, I note that the perceptual and cognitive dimensions might together have been described as "aesthetic" aptitudes, according to a long-established use of this term in philosophy which has nevertheless fallen from favor in psychology. Although this "aesthetic" dimension was not addressed in such terms in the discussion of their findings by the study's authors, it was alluded to briefly (as "aesthetic sensibility") in the somewhat amorphous working definition of creativity deployed in the study from Carl Rogers (216): by "aesthetic", I refer both to the perceptual and the cognitive dimensions involved, for example, in the capacity to see pattern *as* pattern, or "visualize" the solution (Harman et al., 1966; p. 224)—as well as that which pertains to the beauty of its form, for example, in the "elegance" of a "solution," a way of speaking common in mathematics and technology, which also suggests economical use of symbolic or other materials. The relevance of this point will become clear in §3. Two recent studies (Kuypers et al., 2016; Mason et al., 2021) try to focus more precisely on two dimensions widely thought to be important dimensions of creative thinking: divergent and convergent thinking. The first (Kuypers et al., 2016) found an increase in divergent thinking during the acute phase following ayahuasca administration; the second (Mason et al., 2021) did not find the same effect with psilocybin but did find that divergent thinking and creative cognition had increased after the acute effects had worn off, 7 days after administration.

14 There is one obvious, principled but pedestrian reason why this is the case: a single artist's experience can count with no more weight than any other participant in the statistical analysis of experimental results. However, in the design of studies to investigate "creativity" and its psychedelic enhancement, working definitions of "creativity" must to some extent be abstracted from a cultural conversation that remains very confused about what that elusive quality might be but in which, nevertheless, art and artists have since time immemorial generally been recognized to have a certain kind of proficiency or prominence. Appealing to a standard-issue conception of the scientific method as an excuse not to take any account of the collective wisdom reflected in that social and historical fact is itself a methodological decision with consequences, not least in that not only the results but also the working assumptions of such narrowly conceived research on "creativity" also feed back into the culture in a way which further flattens it to fit the thin template of techno-scientific rationalism. One task of the psychedelic humanities is to arrest this downward spiral.

15 The resulting layout of the page bears a passing resemblance to some medieval manuscripts which incorporate marginal annotations and glosses, although the italicized marginalia in Michaux's case generally sit in a more conflictual, unstable, and less harmonious relationship to the adjacent column.

the filmic representation (Duvivier, 1963). This textual doubling, or multiplication—this proliferation of the text into text plus paratext, complicated in turn by proliferation across media into drawings and film—can be understood as an attempt to go some way toward expressing formally the pullulating multiplicity characteristic of Michaux's mescaline experience and the tendency for elements within that experience to overlap, influence, and interact with and impinge on one another—and to share that experience with his audience in the way that it obliges them to read and see differently.[16] The iterative formal reduplication of the text can be understood as the expression, in terms more of form than content, of his experience of pullulating multiplicity and multiplication under mescaline: "Pullulation! Pullulation everywhere! Pullulation from which there is no exit. Space full to overflowing, space of gestation, space of transformation and multiplication; teeming space, which, even if it were only an illusion, would give better account than ordinary sight of what the Cosmos is." (Michaux, 2001; p. 679).

Considering Michaux's work alongside the early creativity study, I surmise that mescaline provoked a radical "deautomatization" (Harman et al., 1966; p. 221) of his creative practice, creating an initially unwelcome disruption of his settled ways of working but which ultimately enabled, through his deliberate and repeated practicing against this new coefficient of adversity, a type of creativity quite unlike the production of sensuous images or literary "content" and much more concerned with inventions in texture and form. The "solutions" mescaline offers Michaux lie not in ready-made images that might be captured from its visuals and reproduced citationally on the page but rather in the way in which the psychedelic upskittled his well-established ways of working and enabled or forced him to develop an innovative and expansive new practice of the form. In an illuminating counterpoint to biomedical research on the psychedelic enhancement of creativity, Michaux's work suggests that psychedelics do not always enhance creativity simply by increasing output within existing forms and frameworks. They sometimes first dismantle those forms and frameworks: they disassemble the production line, so to speak, and deautomatize the production. They thereby clear a space in which the subject can reconfigure the terms of representation, remaking the forms, tools, and techniques of representing: when enhanced by psychedelics, creativity can also involve destruction and stoppage. I would speculate that the capacity to rebuild new forms and frameworks depends in part on training and discipline, and the enhancement in creativity on the will to continue "practicing" with the creatively destructive psychedelic technique. I return to the significance of such anthropotechnical practice in my conclusion. Evidently, Michaux's experience of mescaline was far more disruptive and, at least initially, chaotic than that reported by the engineers, architects, and other macrodosed tech workers [in Harman et al. (1966)]. Why might this be? Perhaps because he approached the drug with a relatively open set, as noted above (Section 1.3): he did not have a specific problem to solve, nor do we have any evidence that he was depressed, or "stuck," personally or professionally, nor that he was prone to psychosis. Under these relatively open conditions of exploration—starting with the relatively open set characteristic of the psychonaut—he seems to have had a more radical experience of creativity as an original pullulating or potentiating chaos before the emergence of order and form.

Michaux's early descriptions of mescaline's effects often characterize the drug as a mechanism operating inside him, heteronomously. He begins to realize that it will work upon any thought he feeds it: observing to himself that the "himalaya" mountains he visualizes are "immense," the two-letter m's in this adjective suddenly shoot off upwards and become "arches for unthinkable and baroque cathedrals" (Michaux, 2001; p. 624).[17] As he begins to discover that mescaline enhances his capacity for self-suggestion, he resolves to try not to think of anything: "Let's not give one idea, not one item, to this crazy mechanism. But already the machine had begun moving again at one hundred images per minute." (624) The mechanistic quality he attributes here to the drug could perhaps be understood as his experiencing, under its influence, the limitations of his own mechanistic self-conception, in particular, as this involves unhelpful capitalist-productivist assumptions about what it means to be productive as a creative artist, or even as an imitative reactualization from his reading of earlier trip reports [notably Rouhier (1927); p. 252].

The abstracting effect which he attributes to the drug leads, in his esthetic reconstitution of the experience, to an explosive experimentation with form and medium by way of textural complication and transmedial expansion. Most significant and consequential is the fourth experiment [in Michaux (1956)], which begins with the abovementioned dosing "error" such that, unusually, he consumes a "heavy" dose of 0.6 g (Erowid, 2015). Michaux experiences becoming letters and a line: "Large Z's are passing within me (zebra-stripes-vibrations-zigzags?). Then it is broken S's, or then again, perhaps halves of them, incomplete O's" (Michaux, 2001; p. 733); "To have become a line was catastrophic, but it was also, if this is possible, all the more unexpected and prodigious." (Michaux, 2001; p. 738). In other words, Michaux experiences becoming one with the very matter of his creative activity, letters, and lines, in a psychedelically enabled immersive expression of the renewed focus on medium and form often thought to characterize esthetic modernism. Michaux's experience bears some resemblance to the self-report by biochemist Kary

16 The innovative formal doubling of the written text into text and paratext is by far the most significant of these proliferations, given that in some of his other work beyond the drug series, he also juxtaposes writing and visual art. See Parish (2007).

17 Mouchard (1979; p. 168-9) noted that the title of the first book in the drug series, *Misérable Miracle*, contains a phonetic reflection of its author's surname in the repeated first syllable of each word; given Michaux's interest in onomastics elsewhere, this is a pertinent observation. Here, the double m, in "immenses," refers us back to the title and the author's surname even while it serves as the occasion of Michaux's first glimpse of the drug's enhancement of his capacity for self-suggestion. This line of interpretation could be pushed further: given the dramatic reversal in affective attitude between the first and second books (see §4, below), the move from the "me, me" of *Misérable Miracle* to the "it" of *L'Infini turbulent* might be understood as the expression, drawing on the rudiments of a foreign language with which Michaux was passingly familiar, of the transition from an agonistic ego-focused relationship to the drug to one more accepting of its "autoheteronomous" activity.

Mullis on his discovery of how to automate the polymerase chain reaction, a discovery he was convinced had been enabled by self-experimentation with LSD: "I was down there with the molecules" [cited in Doyle (2011); p. 193]. In both Michaux's and Mullis's cases, the psychedelic trip enables a radical perspectival shift, an immersive empathic-projective visualization of the scenario at a microscopic level with a high degree of intensity: "I was living intensely in microperception, among the microsignals" (Michaux, 2001; p. 997). It is in the cognitive yield enabled by this engrossing shift of perspective to the microperceptual level that the successful "creative" problem-solving documented in the 1966 creativity study (Harman et al., 1966) might best be understood and explicated: the mind becomes a much more sensitive and more incisive instrument, reattuned to the basic elements of the problem, visualizing them at the microperceptual level, and capable of remaking the forms and frameworks of its understanding around those elements.

3. The politics of psychedelics

As well as offering insight into the way psychedelics enhance creativity, the shift to the microperceptual documented in Michaux's drug works sheds new light on the increasingly vexed question of the politics of psychedelics. For the historically contingent reason of their entanglement with a left-leaning counterculture, it has often been assumed that psychedelics are conducive to greater openness to other people and cultures, as well as the profound realization of human interconnectedness with other species and the natural environment, for example, in the suggestion that psychedelics might be "ecodelics" (Doyle, 2011). This way of thinking has been reflected in the theorization of Acid Communism by Mark Fisher (Stamm, 2019) and Psychedelic Socialism by Jeremy Gilbert (Gilbert, 2017), as well as some outlying biomedical research (Nour et al., 2017; Lyons and Carhart-Harris, 2018). However, a longstanding line of skepticism about such claims, which dates back to the 1970's (Felton, 1972), is now gaining ground in the psychedelic humanities, as scholars point to the penchant for psychedelics among some right-wing ideologues historically (Piper, 2015), the wider phenomenon of "Rightist Psychedelia" (Langlitz, 2020) and the interest in these substances in some corners of the alt-right today, including Q-Anon and neo-Nazism (Pace and Devenot, 2021). Attempts to conceptualize the politics of psychedelics would thus appear to have reached an impasse: the substances seem to be conducive to either extreme, or a number of extreme positions, with research to date suggesting that the most we can say is that they eschew the centrist middle-ground of liberal democracy and that they are politically versatile, or "pluripotent" (Lonergan, 2021), and conducive to the entrenchment of any already held belief.

However, this impasse presupposes quite a conventional view of politics, which envisages the political in terms of already constituted macropolitical positions and the subjects who hold to them. There is another way of looking at politics, well-established in theorization of radical democracy, which offers a more promising approach better attuned to the way psychedelics function—and this is probably no accident of history. Advanced by Deleuze and Guattari (1984 [1972]; 1987 [1980]) and Guattari (2012), then recrafted by Jacques Rancière, this "molecular" perspective on politics focuses on the micropolitical processes by which macropolitical ("molar") institutions, positions, and subjects who hold them come to be constituted.[18] An exhaustive account of this approach is impossible within the constraints of the present article (see Davis, 2010; p. 74–100) but its merits are expressed succinctly in Michaux's comment on the microperceptual perspective which psychedelics enable: "Everything or almost everything is constituted, constituting and thus reconstituable." (Michaux, 2004; p. 33) Reading through the lens of these "molecular" theorists of politics, Michaux's work suggests that the psychedelically trained mind's sensitivity to infraperceptual phenomena which remain below the level of ordinary awareness gives rise to a conviction that any constituted object of consciousness, including those shared culturally and politically, might be remade anew. This is not magical thinking but rather the subjective "molecular" ground of the indispensable political conviction that things could be otherwise.

If the political import of psychedelics is to show that every object of common political belief and every believing subject might be remade anew, as Michaux and the political thinkers he influenced suggest, little wonder that psychedelics seem to appeal more to thinkers of radical, extreme, or revolutionary politics and to alarm those who prefer the centrist middle-ground of consensual, representative-electoral liberal democracy. Does this mean, however, that psychedelics are entirely versatile in political terms and are unwedded to any particular form of politics? While their use in numerous indigenous cultures as agents of socio-cultural consolidation and reproduction is well-documented (Dobkin de Rios, 1990 [1984]), in a social setting that is already heterogeneous, it is highly unlikely that psychedelics could readily serve the same consolidating purpose. The very "wildness" (Langlitz, 2012; p. 131) of these substances—the difficulty of predicting and stabilizing their effects—militates against this. For psychedelics to function reliably in such a way would require that setting and set already be controlled so comprehensively as to make the political use of psychedelics redundant: if a regime already had control of its subjects' mindset and environment to such an extent, there would simply be no need to call on the amplificatory effects of psychedelics.[19] I call this the *redundancy thesis*: it posits

18 The influence of Michaux on Deleuze and Guattari has been noted by Raymond Bellour (Michaux, 1998; p. lix-lxi), who remarks on the long quotation from one of the drug books (Michaux, 1961) in the early pages of *Anti-Oedipus* (Deleuze and Guattari, 1984 [1972]; p. 6-7). Although talk of "molecules" evidently abounds in science and the wider culture, it may well be that "the molecular," in the precise sense it acquires politically in this body of work, was also drawn from Michaux and from the first study of his drug writing, in which the "the molecular swarming of elements" and "the as it were molecular disturbance of the constituents of thought" are particular points of emphasis (Ajuriaguerra and Jaeggi, 1963; p. 12, 44). The genealogy of Rancière's political thought presented in outline here may surprise some: there are, of course, other important elements he brings to—and assembles with—the "molecular" vision of politics outlined by Guattari and Deleuze but, in my considered view, there is no doubting the continuity of this line of thinking.

19 I do not mean to imply that psychedelics have never been used by authoritarian political regimes or for abusive purposes by repressive state

the redundancy of psychedelics for authoritarian macropolitical organization, whether right or left. Rather, psychedelics are interruptive, "molecular," emancipatory political technologies of radical freedom and emergence which are far more likely to weaken established macropolitical structures than to consolidate them. This does not mean that they are politically redundant—far from it—or that the old consensus about psychedelics being conducive to left-leaning politics can be restored: to say they are "molecular" technologies of radical freedom is not necessary to align them with left-wing politics but it is to oppose them to organized political authoritarianism of any stripe and to calm mounting panic at the prospect they may stand set to usher in a fascist future. A new account is required of how the "molecular," or micropolitical, activity of psychedelics and those groups who make use of them can transform macropolitical structures. Prominent in such an account will be many of the same aptitudes discussed in Section 2, under the enhancement of "creativity": from a "molecular" perspective, creative problem-solving is not only an individual but also, fundamentally, a "transversally" intersubjective matter (Guattari, 2012); the methodological individualism of the psy-sciences and the individualization which therapies derived from their research produces, reflect, from a "molecular" perspective, arbitrarily anti-social decisions.[20]

In addition to inspiring a "molecular" approach to politics, of the type encountered later in theorizations of radical democracy, Michaux's work makes another contribution to the understanding of psychedelic politics by registering, resisting, and partially interpreting a tendency toward what might be called delusions of grandeur. "One is overcome by superlatives. One suffocates with superlatives. One would scream superlatives. One is immense and radiant with superlatives. One is thirsty and in great need of superlatives. The greatest and most extraordinary. One is insatiable. One lives superlatively." (Michaux, 2001; p. 812). Michaux is wary of this propensity toward the superlative: "If I had given something of myself to this, it would certainly have led to megalomania. In sum, the strings of the megalomaniac were being given a sharp tug. A sharp and mechanical tug. So I didn't respond. [. . .] Perhaps one day the ingestion of Mescaline and some other well-chosen drugs will be made compulsory at university level for future 'leaders [*manieurs*]'" (Michaux, 2001; p. 693). Michaux lacked the messianic ambition of Timothy Leary; his advocacy for psychedelics was far more contorted, unwieldy, and ambivalent—for characteriological reasons, I would suggest more than to avoid the French legal prohibition on proselytizing for drugs (see n.7). Nevertheless, it is extraordinary that Michaux not only apprehends and resists the "maximomaniacal pressure" (Michaux, 2001; p. 812) he experiences in his encounter with mescaline but also envisages a future in which psychedelics will be put to technocratic use in the training of political leaders. That is, in a far more sinister vein than Leary's vision of the university in which psychedelics would eventually replace books as anthropotechnical devices for the fashioning of selves, Michaux speculates about a strongly hierarchized technocratic political future in which psychedelics will have become part of the curriculum for training an elite destined to govern by moving the masses with carefully administered doses of charisma.[21]

How can this distinctly authoritarian vision of the future be reconciled with my earlier claim that Michaux's drug writing inaugurates a "molecular" conception of politics according to which psychedelics tend to undo organized political authoritarianism? Like many artists and intellectuals preoccupied with their own creative activities, Michaux had what might be described as solipsistic or even, in his case, autistic tendencies: "*Evil is other people's rhythm*," he wrote in 1949 (Michaux, 2001; p. 342, italics original). When he imagines the possible advantage which psychedelics might give to the leaders of a hierarchical technocratic state of the future, he, like some of today's oligarchs, pharma entrepreneurs, and "psychedelic pundits" (Devenot et al., 2022) and some of their critics, does not pause to consider that others with very different political viewpoints starting from much less privileged positions could also enjoy a similar benefit but to different ends. He does not imagine, but his readers can, the effect of such a boost in political self-belief on the undermotivated and quietly despairing multitudes who might lack the basic self-esteem and self-confidence which, according to philosopher Axel Honneth's recognitive account of autonomy, for example, are essential proto-political conditions for the exercise of this and other aspects of political agency: "molecular" conditions, even though Honneth does not use this term (Honneth and Anderson, 2005). There is good reason to believe that without quite being above the threshold at which they might be diagnosed as clinically depressed, a sizeable proportion of the world's downtrodden lack the motivational means and self-belief to engage in projects of individual or collective transformation: they are held captive by their situation, beaten down by economic hardship and social deprivation, caught up in flows of information, "guidance," and "entertainment." Reading against its grain, from the perspectives of radical democracy and recognitive theory outlined here, perforce briefly, Michaux's anticipation of a psychedelically assisted technocratic future suggests that there would be a considerable

agencies working within ostensibly democratic countries. Mescaline, among other drugs, was used in experiments on prisoners at Dachau by Dr. Kurt Plötner as part of the Nazis' search for a truth serum to facilitate interrogation. In parallel, the Truth Drug Committee of the US Office of Strategic Services, the forerunner of the CIA, trialed mescaline in 1942 (Jay, 2019; p. 185). When the war ended, Plötner was recruited by the Americans and went on to work in Project Bluebird, later absorbed into the MKUltra project. Bluebird and MKUltra sought to deploy psychedelics and other substances and techniques for mind control and behavior modification and included experimentation on subjects who had not given their consent, in violation of the Nuremburg Code. For the purposes of my "redundancy thesis," the key conclusion to be salvaged from this sickening history is that even the CIA concluded that psychedelics were unsuitable for their purposes because they were far too unpredictable in their effects.

20 Further discussion of this matter would take me too far away from Michaux. It is the point of departure for my forthcoming book on the politics of psychedelics.

21 I elaborate on the argument presented in this section in my forthcoming book on the politics of psychedelics. In so far as neoliberal capitalism already relies on bureaucracies of ranking and is committed to self-optimization on the part of its subjects, it might be able to make especially effective use of this superlative or "maximomaniacal" propensity in psychedelic experience.

transformative benefit in the psychedelically assisted self-raising of their self-esteem and motivation by a despondent global majority, indeed that this would in effect consolidate the force of their political will.

There is one respect in which Michaux's drug works are politically problematic: as mentioned (Section 1.1), their orientation is resolutely toward Western technoscience and biomedicine and engages only very fleetingly with indigenous cultural practices. In this one respect, Michaux's approach is rather narrow and ignorant and I would not wish to suggest otherwise, though at least he is transparent about this orientation and, as the following section establishes, he is to some extent consistent or evenhanded in the sense that Christian mystical experience is also subordinated to scientific explanation and translated into secular naturalistic terms. Had he been questioned on this point, I can imagine him responding along these lines: however significant indigenous practices may be, like it or not, Western technoscience is now the hegemonic paradigm and unless indigenous experiences can be translated into its terms they are destined to remain of largely antiquarian interest. They can certainly be "recognized," as many scholars in the psychedelic humanities tirelessly demand, but whether much follows concretely from earnestly felt rhetorical gestures in this direction is a decidedly moot point. Of course, Michaux's approach contrasts markedly with that of some scholars in the psychedelic humanities, who wish to envision a future that "respects the lineages of the knowledges that are essentially and not accidentally bundled with these plants—Indigenous and counterculture wisdoms" (Devenot et al., 2022). However, Michaux is less interested in "plant medicines" than in synthetic chemical forms and, like it or not, the field of psychedelics is now very much wider than that of plant medicines and cannot be reduced to plant medicines. Even if one agrees with the sentiment of these authors that indigenous uses constitute an invaluable archive of techniques, as I do, a treasury of techniques sometimes at variance with Western technoscience, sometimes in prescient anticipation of its slow and forgetful "discoveries," perhaps often also superior and in certain ways richer than it, one has to face the fact that Western technoscience is hegemonic in political and regulatory terms and that, under such hegemony, the conditions under which such techniques will be retrieved from that archive and redeployed are likely to be determined to a significant extent by the criteria determined by that paradigm. Despite Michaux's indifference to indigenous experience and history, I nevertheless take the view that his drug works also contain valuable resources with which we can reconceptualize the politics of psychedelics, including in ways which will ultimately favor well-founded demands for "psychedelic justice" (Cavnar and Labate, 2021), among them for the recognition—in a substantial sense exceeding mere rhetoric and virtue-signaling—of indigenous expertise, stewardship, and tradition.[22] When reading, one need not bow to pressure to accept or reject everything en bloc: one can analyze, differentiate, and reassemble—indeed, this is what it means to read critically.

4. Michaux's mystical naturalism

The dominance of the psychotomimetic paradigm of psychedelic efficacy in the biomedical science of Michaux's day probably contributed to the difficulty of some of his early experiences and, in turn, to his hostile early judgments. Yet, as they develop, his drug writings reveal that this mindset changed gradually, with repeated practicing of the psychedelic experience, culminating in a stark divide between the first and second books.[23] Despite attempting to stick with his initial skepticism and maintain an agonistic, distanced, scientific, and observational relationship to the drug (Michaux, 2001; p. 847), in the second book he eventually reports a full-blown mystico-religious experience, in block capitals: "I HAVE SEEN THE THOUSANDS OF GODS" (Michaux, 2001; p. 852). He also claims to experience being traversed by, in a sense, of one substance with, a wave of energy he calls "the furrow" [*le sillon*], "Furrow without beginning or end [...], which I would say comes from one side of the world, traversing me as it moves to the other" (Michaux, 2001; p. 626). As his practicing of the drug proceeds, this initially harrowing experience is acknowledged in some sense to be the revelation of a valid metaphysical intuition about the universe and his set changes from resistance to acceptance: "I stopped struggling, I let myself be traversed by the fluid which, entering by way of the furrow, seemed to come from the end of the world" (Michaux, 2001; p. 648–9). Unsurprising too that in the second book (Michaux, 1957), he draws on Christian mystics, including Catherine of Siena (Michaux, 2001; p. 914); in the third (Michaux, 1961), he recounts hallucinating snippets of "Trois Petites Liturgies de la présence divine" (1944), a cantata by the devout Olivier Messiaen. However, these mystico-religious experiences do not challenge Michaux's implicit commitment to philosophical naturalism and strong physicalism, or in other words, the belief that physics offers a complete description of causality, that the universe is as the natural sciences describe it, that some physical entities lack mental properties, and those physical entities with mental characteristics evolved from physical entities with no mental characteristics [for a fuller account of these related positions see Angel (2002); p. 317-8]. In the "Addenda" to the first book, published only in the 1972 edition, after the completion of the other texts of the cycle, he testifies to what amounts to lasting personality change over the intervening years, under the influence of psychedelics, yet this too is entirely intelligible within the frame of naturalism: "Strange! I have become active. Attentive to what is happening—in and of itself—without trying to deform it or imagine it differently to make it more interesting to me" (Michaux, 2001; p. 770).

22 I explain in more detail how in my forthcoming book on the politics of psychedelics.

23 In the second edition of Michaux (1956), published by Gallimard in 1972, the sceptical and pessimistic verdict on mescaline delivered in the main body of the text is flatly contradicted by a series of appendices revealingly entitled "Addenda," in which Michaux presents a much more positive view of the psychedelic, inflected by his subsequent practicing with the drug.

Regarding the epistemological reliability of the mystical experiences some users encounter under psychedelics, in particular the status of visions of what is sometimes called "other entities," there are two opposing extremes in the current literature, exemplified in recent scholarship by Chris Letheby's plea for a "natural philosophy" of psychedelics (Letheby, 2021; p. 8), one which is compatible with naturalism and physicalism, on the one hand, and Peter Sjöstedt-Hughes's conviction that mystical experiences under psychedelics constitute evidence for panpsychism (Sjöstedt-Hughes, 2021), on the other. Michaux's work demonstrates *both* a strong mystical impulse *and* a strong commitment to naturalism and physicalism: not only is there no sense of dissonance between mysticism and naturalism but in many ways, Michaux's work succeeds in integrating them, such that his position might be characterized as "mystical naturalism" (Angel, 2002), or a "mystic materialism" of the type Huxley and Leary espoused, perhaps even one anticipating the "biomysticism in awe of life itself" which Nicolas Langlitz has seen gradually emerging from the intersection between neuroscience and psychedelics (Langlitz, 2012; p. 255).

Michaux's mysticism nevertheless requires careful reading to discern its fidelity to naturalism and physicalism: sometimes he comes quite close to suggesting that this experience might be evidence of the real existence of other entities. As Blanchot noted perceptively: "Someone we have every reason to believe has met the gods. Unique revelation. But do we gather around this encounter? Do we forsake our occupations, our thoughts, to consider so significant an affirmation? Not in the slightest. Even Michaux's admirers speak of the incident without emotion. For a start, I note this indifference." (Blanchot, 1966; p. 83). Michaux is, in a sense, convinced by his mystical experiences but only quality experience in a restricted, implicitly subjective sense of the term compatible with naturalism and physicalism. The mystical visions he sometimes experienced under psychedelics do not cause him to question this framework, though at times he comes quite close to doing so.

As Michaux reflects on his experience of mescaline, he traverses many different ways of envisioning the drug's effects, of which mystical visions are just one: from mystical encounters with other entities and cosmic energies, he passes through figurations of his serfdom to the drug to become the object of its feminine seduction and be queerly penetrated by it. Passing through these different figurative plateaux, Michaux gradually embraces the belief that the drug reveals a power within himself that is also other than himself, which I have termed elsewhere the "autoheteronomous": "a reserve within me, a zone x, an zone in waiting of which I had had no knowledge," "both a third party and yet purely myself" (Michaux, 2001; p. 773; Davis, 2022; 679). From the perspective of my reading of Michaux and the program I glean from him for the psychedelic humanities, what matters most is the potential for a creative individual, social and political transformation in the intelligent and skilled use of these substances within the frame of scientific naturalism and physicalism: the psychedelic humanities must, I would argue, chart a scientifically enlightened path—but rather than the sobering prospect of a natural philosophy of psychedelics, Michaux's work suggests that a more promising paradigm, which better captures the force of psychedelic experience, might be mystical naturalism.

5. Conclusion: the concept of psychedelics as anthropotechnics and a note on Michaux's "program"

This article has argued that the drug works by Henri Michaux make a substantial contribution to the cultural understanding of psychedelics in three areas: (1) the role of psychedelics in enhancing "creativity"; (2) conceptualization of the politics of psychedelics; and (3) mystical naturalism. In this way, I have gleaned from the treasury that Michaux's work constitutes a "program" for research in the psychedelic humanities. I must emphasize, in part, because this became a source of contention during the review process: a program, not the program. In siding so resolutely with Western technoscience and biomedicine, in its preference for synthesized laboratory chemicals over plant medicines and its relative lack of interest in indigenous cultural practices, Michaux's program is certainly out of step with much research in the field today. In reconstructing Michaux's engagement with drugs as a "program," I am not proposing that any other approaches thereby be displaced or invalidated. At the same time, Michaux's vision has an integrity and honesty of its own which should not quickly be disparaged and, limited though it is in other respects, he assuredly does have substantial contributions to make to contemporary debate in the three areas I have outlined.

Finally, a note on the method. Implicitly, my analysis has envisaged Michaux's work in terms of philosopher Peter Sloterdijk's conception of "anthropotechnical practicing" (Roney and Rossi, 2021), whereby psychedelics are anthropotechnics (tools, techniques, or technologies for the modification of the human), and this way of conceptualizing psychedelics is, I believe, a valuable—indeed, perhaps, foundational—theoretical framework for research in the psychedelic humanities. For Sloterdijk, humanity is a self-enhancing species: we deploy anthropotechnical tools, learn from the experience, refine, and repeat in an elevating cycle of practicing to develop performance and yield. Some critics have lamented Michaux's repetitiveness in the drug works (Bowie, 1973; p. 151; Parish, 2007; p. 74). However, their somewhat repetitive character makes more sense when they are envisaged as the record of a program for self-enhancement by repeated practicing with psychedelic anthropotechnics. For Sloterdijk, the anthropotechnical instruments of education in the humanities, from their emergence in the 19th century, were books. For the psychedelic humanities, psychedelics assembled with other techniques (including books and other cultural objects—these are not to be supplanted, contrary to Leary's suggestion) perform a similar educative function, yielding individual and social transformation. A "program" is also a script, a set of choices and outcomes that can in turn be fed back into new experiments with new assemblages of psychedelics and other

anthropotechnics, as John Lilly and Erik Davis, commenting on Lilly, have envisaged (Lilly, 1968; Davis, 2019; p. 32). Unfortunately, because of the extent and difficulty of Michaux's own works and for contingent reasons of translation, the insights they contain have too long remained the preserve of a happy few and so not been available for such redeployment. Although the account I have given here is necessarily selective in its coverage, I have tried to focus on three particular areas in which Michaux's work has something substantial to contribute to ongoing conversations today, while also acknowledging its limitations.[24]

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

24 Full discussion of the film, in conjunction with the drawings, is reserved for a future article.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Ajuriaguerra, J., and Jaeggi, F. (1963). *Contribution à la connaissance des psychoses toxiques. Expériences et découvertes du poète Henri Michaux. Dessins d'Henri Michaux faits sous l'influence de la mescaline*. Basel: Sandoz.

Anderson, T., Petranker, R., Christopher, A., Rosenbaum, D., Weissman, C., Dinh-Williams, L-. A., et al. (2019). Psychedelic microdosing benefits and challenges: an empirical codebook. *Harm Red. J.* 16, 4. doi: 10.1186./s12954-019-0308-4

Angel, L. (2002). Mystical naturalism. *Relig. Stud.* 38, 317–338.

Artaud, A. (1945). *D'un voyage au pays des Tarahumaras*. Paris: Fontaine.

Baudelaire, C. (1860). *Les Paradis artificiels*. Paris: Poulet-Malassis.

Black, S. (2022). "French Drug Control from Poisons to Degeneration," in *The Oxford Handbook of Global Drug History*, ed. P. Gootenberg (Oxford: OUP), 284–300.

Blanchot, M. (1966). "L'infini et l'infini", in *Henri Michaux*. Cahiers de l'Herne, ed. R. Bellour (Paris: L'Herne), 80–88.

Bowie, M. (1973). *Henri Michaux: A Study of His Literary Works*. Oxford: Oxford University Press.

Broome, P. (1977). *Henri Michaux*. London: Athlone.

Bruchez, J. (2007). *Henri Michaux et Aldous Huxley*. Deux expériences. Geneva: Slatkine.

Brun, A. (1999). *Henri Michaux ou le corps halluciné*. Paris: Les Empêcheurs de Penser en Rond/Institut d'édition Sanofi-Synthélabo.

Calabrese, J. (2013). *A Different Medicine: Postcolonial Healing in The Native American Church*. Oxford: Oxford University Press.

Cavnar, C., and Labate, B. (2021). *Psychedelic Justice: Toward a Diverse and Equitable Psychedelic Culture*. Santa Fe: Synergetic Press.

Chayet (2020). *Phantastica: ces substances interdites qui guérissent*. Paris: Grasset.

Dassonneville, G. (2021). Dans l'ivresse mescalinique: Jean-Paul Sartre, clinicien de l'imagination? *Cygne noir. Revue d'exploration sémiotique* 3, 1462. doi: 10.7202./1091462ar

Davis, E. (2019). *High Weirdness: Drugs, Esoterica, and Visionary Experience in the Seventies*. Cambridge, MA: MIT Press.

Davis, O. (2010). *Jacques Rancière*. Cambridge: Polity.

Davis, O. (2022). "Autonomy and 'autoheteronomy' in psychedelically assisted psychotherapy," in New Interdisciplinary Perspectives On and Beyond Autonomy, ed. O. Davis and C. Watkin (London: Routledge), 83–100. doi: 10.4324/9781003331780-8

De Bono, E. (1970). *Lateral Thinking: Creativity Step by Step*. London: Harper and Row.

Delay, J., and Benda, P. (1958). L'expérience lysergique L.S.D.—25. A propos de 75 observations cliniques. *L'Encéphale. Journal de neurologie, de psychiatrie et de médecine psycho-somatique* 47, 3. 169-209.

Delay, J., and Gérard, H. P. (1948). L'intoxication mescalinique expérimentale. *L'Encéphale* 37, 196–235.

Delay, J., Pichot, P., and Lemperière, T. (1959). La psilocybine. Historique. Pharmacophysiologie. Clinique. *La Presse médicale* 67, 1731–1733.

Deleuze, G., and Guattari, F. (1984 [1972]) *Anti-Oedipus: Capitalism and Schizophrenia*. Translated by Robert Hurley, Mark Seem and Helen Lane. London: Athlone.

Deleuze, G., and Guattari, F. (1987 [1980]). *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Brian Massumi. Minneapolis: University of Minnesota Press.

Devenot, N., Conner, T., and Doyle, R. (2022). Dark side of the shroom: erasing indigenous and counterculture wisdoms, and the open source alternative. *Anthropol. Conscious.* 33,2, 476–505. doi: 10.1111/anoc.12154

Dobkin de Rios, M. (1990 [1984]). *Hallucinogens: Cross-Cultural Perspectives*. Bridport: Prism.

Doyle, R. (2011). *Darwin's Pharmacy: Sex, Plants and the Evolution of the Noösphere*. Seattle: University of Washington Press.

Dubus, Z. (2022). (2022). L'émergence des psychothérapies assistés au LSD (1950–1970). *Ann. Médico-psychologiques Revue Psych.* 181, 96–100. doi: 10.1016/j.amp.11002

Duvivier, E. (1963). Images du monde visionnaire. [Film] Basel: Sandoz. Available online at: https://www.canal-u.tv/chaines/cerimes/images-du-monde-visionnaire (accessed November 19, 2022).

Dyck, E. (2008). *Psychedelic Psychiatry: LSD from Clinic to Campus*. Baltimore: Johns Hopkins University Press.

Ellis, H. (1898). Mescal: A New Artificial Paradise. *The Contemporary Review* LXXIII: 130-141. Available online at: https://archive.org/details/contemporaryrev23unkngoog/page/130/mode/2up?view=theater (accessed January 28, 2023).

Erowid (2015). Mescaline dosage. Available online at: https://erowid.org/chemicals/mescaline/mescaline_dose.shtml (accessed November 27, 2022).

Fadiman, J. (2011). *The Psychedelic Explorer's Guide*. Rochester, VT: Park Street Press.

Farrell, P. (2021). Mescaline scribe. Available online at: https://chacruna.net/mescaline-scribe-beauvoir-sartre/ (accessed January 28, 2023).

Felton, D. (ed.) (1972). *Mindfuckers: A Source Book on the Rise of Acid Fascism in America*. New York City: Straight Arrow Publishers.

Foucault, M. (2003). *Le Pouvoir psychiatrique. Cours au Collège de France (1973-1974)*, ed. by F. Ewald, A. Fontana and J. Lagrange. Paris: Gallimard and Seuil.

Gandy, S., Bonnelle, V., and Jacobs, E. and Luke, D. (2022). Psychedelics as potential catalysts of scientific creativity and insight. *Drug Sci. Policy Law* 8, 1–16. doi: 10.1177/20503245221097649

Gilbert, J. (2017). Psychedelic socialism. Available online at: https://www.opendemocracy.net/en/psychedelic-socialism/ (accessed January 28, 2023).

Ginsberg, A. (1995). *Journals Mid-Fifties 1954-1958*. Edited by Gordon Ball. London: Viking.

Guattari, F. (2012 [1977 and 1980]). *La Révolution moléculaire*. Paris: Les Prairies Ordinaires.

Halpern, A-. E. (1998). *Henri Michaux. Le laboratoire du poète*. Paris: Seli Arslan.

Harman, W., McKim, R., Morgar, R., Fadiman, J., and Stolaroff, M. (1966). Psychedelic agents in creative problem-solving: a pilot study. *Psychol. Reports* 19, 211–227.

Healy, D. (2004). *The Creation of Psychopharmacology*. Cambridge MA: Harvard University Press.

Honneth, A., and Anderson, J. (2005). "Autonomy, Vulnerability, Recognition, and Justice" in *Autonomy and the Challenges to Liberalism: New Essays*, ed. Christman, J and Anderson, J (Cambridge: Cambridge University Press) 127–149.

Huxley, A. (2004 [1954]). *The Doors of Perception and Heaven and Hell*. London: Vintage Classics.

Jay, M. (2019). *Mescaline: A Global History of the First Psychedelic*. New Haven: Yale University Press.

Kristeva, J. (1974). *La Révolution du langage poétique: l'avant-garde à la fin du XIXè siècle, Lautréamont et Mallarmé*. Paris: Seuil.

Kuypers, K., Riba, J. De la Fuente Revenga, M., Barker, S., Theunissen, E., Ramaekers, J. (2016). Ayahuasca enhances creative divergent thinking while decreasing conventional convergent thinking. *Psychopharmacology* 233, 3395–3403. doi: 10.1007/s00213-016-4377-8

Langlitz, N. (2012). *Neuropsychedelia: The Revival of Hallucinogen Research Since the Decade of the Brain*. Berkeley: University of California Press.

Langlitz, N. (2020). Rightist psychedelia. Cultural Anthropology. Available online at: https://culanth.org/fieldsights/rightist-psychedelia (accessed January 28, 2023).

Légifrance (2007). Code de la santé publique, Art. L3421-4. Available online at: https://www.legifrance.gouv.fr/codes/article_lc/LEGIARTI000006688178 (accessed January 28, 2023).

Letheby, C. (2021). *Philosophy of Psychedelics*. Oxford: Oxford University Press.

Lewin, L. (1928). *Les Paradis artificiels: opium, morphine, cocaïne, peyotl, chanvre indien, agaric, jusquiame, datura, alool, chloroforme, éther, chloral, kawa, camphre, bétel, thé, hola, maté, tabac, arsenic*. Tr. by F. Gidon. Paris: Payot.

Lilly, J. (1968). *Programming and Metaprogramming in the Human Biocomputer*. St Paul, MN: St Thomas Communication Research Institute.

Lonergan, E. (2021). Psychedelics: politically pluripotent. Available online at: https://mind-foundation.org/psychedelics-politically-pluripotent/ (accessed January 28, 2023).

Loras, O. (1967). *Rencontre avec Henri Michaux au plus profond des gouffres*. Chassieu: Bleyon.

Lyons, T., and Carhart-Harris, R. (2018). Increased nature relatedness and decreased authoritarian political views after psilocybin for treatment-resistant depression. *J. Psychopharmacol.* 32, 811–819. doi: 10.1177/0269881117748902

Marchant, A. (2018). *L'Impossible prohibition. Drogues et toxicomanie en France 1945–2017*. Paris: Perrin.

Markoff, J. (2005). *What the Dormouse Said. How the 60s Counterculture Shaped the Personal Computer Industry*. London: Penguin.

Martin, J. (1962). The treatment of twelve male homosexuals with "L.S.D." (followed by a detailed account of one of them who was a psychopathic personality. *Psychoth. Psychosom.* 10, 394–402.

Martin, J-. P. (2003). *Henri Michaux*. Paris: Gallimard.

Mason, N., Kuypers, K., Reckweg, J., Müller, F., Tse, D., Rios, Da., et al. (2021). Spontaneous and deliberate creative cognition during and after psilocybin exposure. *Translat. Psych.* 11, 209. doi: 10.1038/s41398-021-01335-5

McClure, M. (1966). *Meat Science Essays*, 2nd edn. San Francisco: City Lights.

McClure, M. (1993). *Lighting the Corners: On Nature, Art, and the Visionary. Essays and Interviews*. Albuquerque, NM: University of New Mexico Press.

Merleau-Ponty, M. (1942). *La Structure du comportement*. Paris: Presses Universitaires de France.

Merleau-Ponty, M. (1945). *Phénoménologie de la perception*. Paris: Gallimard.

Michaud, E. (1988). The end of art according to Beuys. *October* 45, 36–46.

Michaux, H. (1929). *Ecuador, journal de voyage*. Paris: Gallimard.

Michaux, H. (1956). *Misérable Miracle: la mescaline*. Monaco: Editions du Rocher.

Michaux, H. (1957). *L'Infini turbulent*. Paris: Mercure de France.

Michaux, H. (1959). *Paix dans les brisements*. Paris: Flinker.

Michaux, H. (1961). *Connaissance par les gouffres*. Paris: Gallimard/Le Point du Jour-N.R.F.

Michaux, H. (1963a). *Miserable Miracle*. Translation by Louise Varèse, preface by Octavio Paz. San Francisco: City Lights.

Michaux, H. (1963b). *Light Through Darkness*. New York: Orion.

Michaux, H. (1966). *Les Grandes Épreuves de l'esprit et les innombrables petites*. Paris: Gallimard/Le Point du Jour-N.R.F.

Michaux, H. (1975). *Infinite Turbulence*. Translation by Michael Fineburg. London: Calder and Boyars.

Michaux, H. (1998). *Œuvres complètes*, volume 2. Edited by Raymond Bellour and Ysé Tran. Paris: Gallimard.

Michaux, H. (2001). *Œuvres complètes*, volume 2. Edited by Raymond Bellour and Ysé Tran. Paris: Gallimard.

Michaux, H. (2004). *Œuvres complètes*, volume 3. Edited by Raymond Bellour, Ysé Tran and Mireille Cardot. Paris: Gallimard.

Milner, M. (2000). "Henri Michaux," in *L'Imaginaire des drogues*, by M. Milner (Paris: Gallimard) 368–435.

Morgan, B. (2006). *I Celebrate Myself: The Somewhat Private Life of Allen Ginsberg*. London: Viking Penguin.

Mouchard, C. (1979). "La 'pensée expérimentale' de Michaux," in *Ruptures sur Henri Michaux*, ed. by R. Dadoun (Paris: Payot): 159–208.

Murphy, R., Sumner, R., Evans, W., Menkes, D., Lambrecht, I., Ponton, R., et al. (2021). MDLSD: study protocol for a randomised, double-masked, placebo-controlled trial of repeated microdoses of LSD in healthy volunteers. *Trials* 22, 302. doi: 10.1186/s13063-021-05243-3

Nour, M., Evans, L., and Carhart-Harris, R. (2017). Psychedelics, personality and political perspectives. *J. Psych. Drugs* 49, 182–191. doi: 10.1080/02792017, 1312643

Ouvry-Vial, B. (1989). *Henri Michaux: Qui êtes-vous?* Lyon: La Manufacture.

Pace, B., and Devenot, N. (2021). Right-wing psychedelia: case studies in cultural plasticity and political pluripotency. *Front. Psych.* 3, 3185. doi: 10.3389./fpsyg.2021.733185

Parish, N. (2007). *Henri Michaux: Experimentation with Signs*. Amsterdam: Rodopi.

Parsons, N. (2014). *Meth Mania: A History of Methamphetamine*. Boulder: Lynne Riener Publishers.

Partridge, C. (2018). *High Culture: Drugs, Mysticism, and the Pursuit of Transcendence in the Modern World*. Oxford: Oxford University Press.

Petranker, R., Anderson, T., Maier, L., Barratt, M., Ferris, J., Winstock, A., et al. (2020). Microdosing psychedelics: subjective benefits and challenges, substance testing behavior, and the relevance of intention. *J. Psychopharmacol.* 36, 1. 85–96. doi: 10.1177/0269881120953994

Pic, M. (2014). "Preface", in *Mescaline 55, by Edith Boissonnas, Henri Michaux and Jean Paulhan* (Paris: Claire Paulhan), 8–79.

Piper, A. (2015). *Strange Drugs Make for Strange Bedfellows: Ernst Jünger, Albert Hofmann and the Politics of Psychedelics*. Portland: Invisible College Publishing.

Retaillaud-Bajac, E. (2009). Les paradis perdus: drogues et usagers de drogues dans la France de l'entre-deux-guerres. Rennes: Presses Universitaires de Rennes. Available online at: https://books.openedition.org/pur/126099 (accessed January 28, 2023).

Roney, P., and Rossi, A. (2021). Sloterdijk's Anthropotechnics. Angelaki 26, 1. Available online at: https://www.tandfonline.com/toc/cang20/26/1 (accessed January 28, 2023).

Rouhier, A. (1927). *Le Peyotl (Echinocactus Williamsi Lem.): la plante qui fait les yeux émerveillés*. Paris: Doin.

Said-Metwaly, S., Van den Noortgate, W., and Kyndt, E. (2017). Methodological issues in measuring creativity: a systematic literature review. *Creat. Theor. Res. Appl.* 4, 2. doi: 10.1515/ctra-2017-0014

Sartre, J. P. (2010). "Notes sur la prise de mescaline", in *Les Mots et autres écrits autobiographiques*, ed. by J. F. Louette, G. Philippe and J. Simont (Paris: Gallimard, Pléiade) 1222–1237.

Sessa, B. (2008). Is it time to revisit the role of psychedelic drugs in enhancing human creativity? *J. Psychopharmacol.* 22, 8. 821–827. doi: 10.1177/0269881108091597

Sessa, B. (2012). *The Psychedelic Renaissance: Reassessing the Role of Psychedelic Drugs in 21st Century Psychiatry and Society*. London: Muswell Hill Press.

Sjöstedt-Hughes (2021). *Modes of Sentience: Psychedelics, Metaphysics, Panpsychism*. London: Psychedelic Press.

Stafford, P., and Golightly, B. (1967). *LSD: The Problem-Solving Psychedelic*. New York: Award Books.

Stamm, E. (2019). How Mark Fisher's 'Acid Communism' has inspired a new current in politics and art. E-flux conversations. Available online at: https://conversations.e-flux.com/t/how-mark-fishers-acid-communism-has-inspired-a-new-current-in-politics-and-art/9252 (accessed January 28, 2023).

Swanson, L. (2018). Unifying theories of psychedelic drug effects. *Front. Pharmacol.* 4, 172. doi: 10.3389./fphar.2018.00172

Thuillier, J. (1999). Ten *Years That Changes the Face of Mental Illness*. Boca Raton: CRC Press.

Turner, F. (2006). *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism*. Chicago: Chicago UP.

Yvorel, J. J. (2012). La loi du 12 juillet 1916: première incrimination de la consommation de drogue. *Les Cahiers dynamiques* 56, 128–133. doi: 10.3917/psyt.222.0009

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Transformative experience and informed consent to psychedelic-assisted psychotherapy

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Just as psychedelic-assisted psychotherapy (PAP) represents a clinical innovation that may need to be accommodated with corresponding theoretical and methodological innovations, there is growing awareness that the tools, normative frameworks, and standard practices of our clinical ethics may also need to be adapted, renewed, or replaced to accommodate its unusual features. Drawing on L. A. Paul's work on "Transformative Experience," I argue that the acute and long-term effects that are repeatedly reported following the administration of psychedelic drugs, including in clinical contexts, are epistemically inaccessible at the point of deciding to take them. By virtue of both the so-called "mystical" experiences that frequently arise during PAP, and the long-term shifts to outlooks, values, and priorities that can follow treatment, the processes of decision-making that are normatively expected of patients run aground. If this framing is correct, then prospective patients cannot meet the requirement of understanding that is one of the principal analytic components of informed consent. The role of understanding in supporting two functions of informed consent—avoiding unauthorized trespass against patients and supporting values-aligned decision-making—is explored, and I argue that, while the normative standard for the first function may be met by extant suggestions for enhancing the consenting process for PAP, the latter function remains unattainable. In light of this, the consequences for the ethical preparation of prospective patients are considered.

KEYWORDS

informed consent, transformative experience, psychedelic-assisted psychotherapy, value change, consent, psychedelic, psychedelic ethics

1. Introduction

The anticipated (re-)introduction of classical psychedelics into psychiatry (chiefly among them, psilocybin and LSD) is likely to bring with it a number of challenges to standard models of practice. This has already proven the case as psilocybin works its way through the drug licensing process, wherein its particularly obvious acute subjective effects, psychotherapeutic components, and the challenge for effective blinding that these bring impose a complication in meeting the evidentiary gold standard of the double-blind, placebo-controlled clinical trial (Muthukumaraswamy et al., 2021; Schenberg, 2021; Aday et al., 2022). Similarly, there is growing awareness that the atypical features of psychedelic-assisted psychotherapy (PAP), the hybrid pharmacotherapy-psychotherapy modality of psychedelic

medicine, may demand the adaptation, renewal, or replacement of the tools, normative frameworks, and standard practices of our clinical ethics (Brennan et al., 2021; Smith and Sisti, 2021; Smith and Appelbaum, 2022).

The current study is an exploration of one apparent tension between the familiar tools and practices of medical ethics and the atypical features of PAP. I argue that informed consent, as standardly conceived as a legitimacy requirement for medical intervention (Eyal, 2018), may not be possible before undertaking PAP. In brief, this is because informed consent demands that a prospective patient be presented with, and understands, an account of the intended treatment that is not materially incomplete, such that she is equipped to autonomously authorize a course of action while understanding whether, and how, it aligns with her values—i.e., to choose a treatment that is *right for her*. Using the framework of philosopher L. A. Paul's "transformative experience" (Paul, 2014), I propose that prospective patients cannot undertake a rational reflection of whether PAP is right for them, given that materially relevant facts about the treatment remain epistemically inaccessible to patients before treatment has begun. This is because of two features of the psychedelic experience: first, the epistemically transformative nature of the acute drug effects, which can be of so radically different a nature to previous experience as to be fully comprehensible only by experiencing it. More crucially, clinical evidence supports the thesis that PAP can be of a personally transformative nature: repeatedly recorded downstream changes following psychedelic use, including rapid and robust shifts to values, personality, beliefs, and behavior (Griffiths et al., 2008, 2011; MacLean et al., 2011; Timmermann et al., 2021; Nayak et al., 2023), have the potential to change the very beliefs, value set, and core preferences against which people make decisions. As such, there are grounds to believe that the idealized conception of meaningfully informed consent, which we standardly seek before beginning treatment with a competent patient, could be an inappropriate tool for legitimizing a course of PAP.

2. Consent and informed consent

The act of consenting is central to our interactions in many spheres—most prominently sexual, commercial, and medical, and its importance is so widely accepted that its function might easily go unarticulated. At its center across all these contexts is a recognition of the need to respect autonomy. While a full normative analysis of the varying conceptions of autonomy is neither possible nor necessary here (see Christman, 1988, or Taylor, 2005, for an overview), it suffices for current purposes to point to the intuitive core that they share—the value of the freedom to be authors of our own lives, choosing what we think best for us in matters of importance to us, and remaining sovereign over our own bodies (Beauchamp and Childress, 2019). Because of this, we consider people to have, at default, a "perimeter of rights" of non-interference against their person, property, or lives (Dougherty, 2020, p. 138). However, since we, at times, want to relax that perimeter to interact meaningfully and valuably with others, the "autonomous authorization" (Faden and Beauchamp, 1986) of valid consent to a specific action serves to toggle that protection on and off, albeit in a precisely delineated manner,[1] that is, consent functions to *waive* important ethical requirements in limited ways and particular contexts so as to license actions that would otherwise be ethically or legally unacceptable (Manson and O'Neill, 2007, ch. 4). Consent turns "a rape into love-making, a kidnapping into a Sunday drive, a battery into a football tackle, a theft into a gift, and a trespass into a dinner party" (Hurd, 2004). Hurd (1996) goes so far as to ascribe to consent as a "moral magic."

Standardly, an *autonomous authorization* is viewed as comprising three components: It must be intentional, voluntary, and made by an actor with sufficient understanding of what is being authorized (Beauchamp, 2009), but note that the thresholds for voluntariness and understanding, and thereby for valid and morally forceful consent, can vary across contexts. In an oligopsony market, in which there are many suppliers but few buyers (in Australia, two supermarkets control some 70% of the national food market), a buyer may threaten not to renew a supply contract unless a significant reduction in price is agreed: Such an agreement may not be wholly voluntary but remains valid. The act of ordering a bottle of champagne at a club is seen as tokening a valid consent to being charged for it, even where a price is never mentioned. A drunk first-time gambler can bet his life savings on a spin of the roulette wheel, consenting to have his stake taken if the ball lands on red instead of black. In these, and many other mundane interactions, we recognize the moral power of that consent even when the acts in question are potentially damaging to the consenting parties' interests or wellbeing.

But the bar is set much higher in clinical research and healthcare (Eyal, 2018)—here alone, we talk of "informed consent" rather than "consent." The common function of consent—safeguarding autonomy—remains, and with it, a toggling off of important rights, most obviously to bodily integrity. To add to Hurd's list, consent can turn a battery into a life-saving surgery. In doing so, the consent-taking process also serves an important institutional role in protecting physicians from litigation. Requiring consent to be *informed* also serves as an additional level of defense for patients in recognition of a particular vulnerability: Across the physician–patient relationship, wherein highly important rights are to be waived, there is a significant asymmetry of information. The point of drawing this distinction is to highlight that different norms govern the practice of giving and accepting consent across different relationships and contexts. Although the variability in these norms does not undermine the validity of consent in any given context, we ought to tread carefully in eliding norms across situations.

While safeguarding patient autonomy is a key function of informed consent in healthcare, contemporary discussion signals that this is not the only role we want it to perform (Dickert et al., 2017). Among those diverse goals, that which is of interest here, "[o]ne of the most widely accepted goals for informed consent[,] is to promote more informed healthcare decisions in

1 For example, to the extent that a valid consent to a surgical procedure under anesthetic permits an action that would otherwise be an assault on the right to bodily integrity, such a consent does not constitute carte blanche against any violation of bodily integrity, be it sexual touching or the opportunistic removal of an appendix that was found to be infected during surgery.

accordance with patients' values" (Berg et al., 2001, ch. 14). It is not enough that a physician has decided that an intervention is medically the best course of action but also that, for the patient themselves, "[a]dvantages and disadvantages have to be understood and weighed rationally…patients have to be made aware of both the informative and emotional content of a decision" (Dsubanko-Obermayr and Baumann, 1998). Supporting decision-making that allows patients the opportunity to choose treatments in accordance with their values is driven by wanting their choices to reflect who they are and what they care about, or, in everyday terms, if a treatment is *right for them*.[2,3] Something has gone wrong in the informed consent process if a patient who ardently wants to bear children unwittingly accepts a treatment with a high risk of resulting in sterility, or a Jehovah's Witness agrees to an intervention that unbeknown to her involves a blood transfusion, where other options are available.

As such, a secondary function of informed consent, and a secondary obligation imposed on clinicians, is to promote value-aligned decision-making, where this is understood as supporting patients to "weigh the pros and cons of the alternative choices at hand and choose the option that most aligns with their values, needs, and belief" (Rogers and Johnson, 2021). Doing so secures or enhances the *instrumental* value of the autonomy of patients, i.e., that of "enabling persons to act to attempt to satisfy their own desires and secure their own goals" (Taylor, 2010, p. 141). This function—helping patients to avoid mistakes in their decision-making process about what is *right for them*—might stem from a generalized clinical duty of *beneficence*, or more specifically the physician's role as a fiduciary toward the patient (Joffe and Truog, 2010).[4]

To draw out why PAP presents a challenge for informed consent, it is useful to outline the analytic components of informed consent that are frequently appealed to across legal, medical, and philosophical contexts, namely, (1) competence, (2) disclosure, (3) understanding, (4) voluntariness, and (5) consent.

The pertinent component when considering transformative experiences is *understanding*. For a number of scholars, understanding takes a lexical priority over *disclosure*: Disclosure of the nature and details of a prospective intervention, in the absence of understanding, does not seem to be sufficient for informed consent—"[p]lainly, comprehension is essential for truly informed consent, for the act of disclosure would otherwise be pointless" (Capron, 2008, p. 625)—while disclosure may not be necessary where the patient is already in a position of understanding. The relevant information may be naturally understood in a context where a physician applies a bandage to a profusely bleeding wound (Pugh, 2020, p. 163), or, for more involved interventions, where the patient in question is a colleague in the same medical specialty as the treating physician (Faden and Beauchamp, 1986, p. 276). The *understanding* component bears upon both the *autonomous authorization* and *supporting value-aligned decision-making* functions of informed consent. Because of the informational asymmetry often at play in medical contexts, there is a high risk of both *referential opacity* and *failure to grasp the consequences*. This is chiefly because consent is a propositional attitude; consent to a treatment described one way does not necessarily entail consent to the same treatment described differently: A description couched less euphemistically, or with an emotionally richer articulation of *what it is like* to experience its side-effects (O'Neill, 2002, p. 42–44), might yield different results.

For consent to count as *autonomous authorization* in a medical context, the threshold for understanding is higher than that we seek from the club patron ordering champagne in ignorance about its price. Where a doctor fails to take steps to ensure that her patient *understands* the nature and implications of a particular treatment, she thereby deprives them of the opportunity to reflect on how the descriptive facts concerning the treatment align with their own values and preferred ways of living—i.e., whether the treatment is right *for them*. For fulfilling either function of informed consent, it is a contested matter as to just how much information, or precisely what information, must be understood. Clearly, informed consent cannot be secured if *nothing* of the proposed intervention is understood, as when there is no common language between doctor and patient, and no interpreter is present. Nor must *everything* be understood: understanding everything about an intervention would require a high degree of medical expertise on the part of the patient, and any workable account of informed consent cannot require that patients themselves be medical experts. In both philosophical and legal discussions of informed consent, an appeal is given to the concept of *materiality*—information concerning the procedure that is *material* to the patient's decision must be understood. Whether a 16-gauge or 18-gauge needle is used in venipuncture exemplifies a non-material aspect of the treatment; however, a treatment's risk of causing infertility is a clear example of a material aspect, impinging as it does on the values and important ends of a patient. There is a vagueness to this distinction, and while different conceptions have sought to articulate clear bright lines to define the threshold of materiality in any given circumstance,[5] for current purposes, we can remain agnostic here: As discussed below, the kinds of changes that have been recorded

2 That we place value on treatment decisions being value-aligned or *authentic* to the patient in this way is perhaps most clearly seen in a context where informed consent is not possible: In cases of surrogate decision-making, when needing to make a decision for a temporarily incompetent relative, we naturally ask "what would they choose" (Brudney, 2009).

3 With thanks to a reviewer for presenting at this juncture the example of a medical abortion chosen by someone who considers abortion morally wrong. This example neatly demonstrates that informed consent does not require that the chosen procedures must align with patient values, rather, that patients are made aware of how treatment options interact with their values.

4 It is noteworthy that some writers conceive of this function of informed consent as a duty both to doctors *and* patients: "Doctors are obligated to facilitate patients' opportunities for reflection to prevent ill-considered rational and irrational influences on choice. Patients, in turn, are obligated to participate in the process of thinking about choices" (Katz, 2002, p. 122).

5 As in, for example, accounts that set the threshold for the material aspects of a treatment that must be disclosed as that which the physician judges to be material to the patient or that which the patient judges to be material.

following PAP will count as material to treatment decisions on any plausible account.

3. Transformative experience and choosing

A helpful framework through which to understand the challenge to informed consent from PAP is philosopher L. A. Paul's "transformative experience" (Paul, 2014). Paul demarcates a class of experiences that have two important features that impose a challenge on our decision-making about *what is right for us*. The first feature is that they are *epistemically transformative*—because they are so unlike any previous experience, a person cannot imagine what the experience will be like for them except by undergoing it. In addition, they are *personally transformative*—the act of undergoing the experience changes someone's perspectives, priorities, or core values such that, in a sense, the kind of person they are changes. Paul offers a dramatic example to highlight these features—being presented with a genuine opportunity to become a vampire (Paul, 2014, p. 2). As Paul astutely observes, if you were to take up this offer, "life will be completely different." But the nature of this difference, as it is experienced by you, is epistemically inaccessible at the point of choosing. This is because, never having been a vampire before, "you cannot compare the character of the lived experience of what it is like to be you… to the character of the lived experience of what it is like to be a vampire" (p. 4). Moreover, though you might prioritize sunbathing as a prized form of relaxation now, or a vegan diet as the pinnacle of nutrition and a moral necessity, these ideas become positively repugnant after *the change*.

Paul draws attention to the reality that we face similar, if less fantastical, choices throughout life—typically "central, life-defining choices" (p. 94) which involve transformative experiences, the lived reality of which is epistemically inaccessible at the point of choosing them, and which can change both *us*, and *what we care about*, in ways that we cannot anticipate, which thereby "limits our ability to make informed, rational, and authentic plans" (Sebo and Paul, 2019, p. 1).

The paradigmatic case that Paul deploys to explain the character of transformative experience is that of having a child. Having your first child is *epistemically transformative*, in that it allows an individual to grasp new knowledge (i.e., what it is like to have a child), that is epistemically accessible *only* through having your first child: Parents are known to remark that no amount of babysitting nieces and nephews, nappy-changing and all, truly informs a person as to *what it is really like to have your own child*.[6] More crucially, the experience of having a child is *personally transformative*: By having and raising a child, *you* can be transformed in a fundamental, personal way—through the updating or development of your core personal values, beliefs, and practices: "Your preferences will change. The way you live your life will change. What and who you care about will change" (Paul, 2014, p. 80–81). Such experiences are significant in that they "function as crossroads in your path toward self-realization" (Paul, 2014, p. 17). An experience that changes your point of view enough to revise your core values and preferences, or how you see yourself in the world, has consequences that can reverberate through the rest of your life.

Transformative experiences are ethically significant because they demonstrate that our preferred conception of how we make important decisions in our life is lacking in some way. We cannot decide whether to have a child by rationally weighing the pros and cons of having a child vs. remaining childless, choosing outcomes that align with our values and preferences, evaluating "each possible act and its experiential outcomes by imagining or running a mental simulation of what it would be like" (Paul, 2014, p. 26). Firstly because "one cannot determine the value of what it is like to have one's own child before actually having her" (Paul, 2015, p. 11). But it is not only that there is a deep ignorance about what it is *really* like to have *your* child (they're not all alike, and who your child is makes a big difference to your experience of parenthood). Additionally, anyone considering having children must grapple with their ignorance about what it would really be like to undergo a fundamental shift in their values, preferences, and worldview upon becoming a parent. The practice of making transformative decisions through rational decision theory, estimating the subjective value *for you* of each option, is thereby doubly frustrating: you don't know what the experience will be like, and you don't know which values and preferences you will have in the wake of the experience, and what it is like to have them, by which to judge its value.[7] These "central, life-defining choices" intractably involve a leap of faith—a commitment to discovering the unknown. This discovery is not simply of what it will be like to have some novel experience, but also, and more pressingly, the discovery of *who you will become*, should the experience give you attitudes, a worldview, and values that are at the point of the choice alien to you. Salvaging a rational weighing of options by appeal to third-person accounts, or social scientific data, is of limited use in such circumstances, if we value *making our own choice*. Paul (2014) rejects this option on existentialist grounds, going so far as to call it "disastrous" (p. 87), doing "great violence to our ordinary way of thinking about deliberation" (p. 128). Someone who chooses to have a child against her own desires on the basis of such data, "in effect, turns her decision over to the experts and eliminates consideration of her personal references, [and] seems to be giving up her autonomy for the sake of rationality" (Paul and Bloom, 2015). There is significant merit to this view: Fundamentally we want our "central, life-defining choices" to ultimately be *our* choices, and, thus, electing to undergo a transformative experience on the basis of third-person or population data appears like a misstep, if not an outright evacuation of responsibility. A 0% regret rate among vampires is not as reassuring as the number alone suggests—"do you want to become a vampire, live a vampire life,

6 On this rendering, a good many "first-time" experiences are epistemically transformative, even trying a new fruit for the first time, but note that the experience of having one's first child is a radical and profoundly consequential departure from a person's previous experience, along multiple dimensions, compared to having one's first guava.

7 As Paul frames this double dilemma when trying to weigh whether undergoing a transformative experience will be right for us, "[w]e only learn what we need to know after we've done it, and we change ourselves in the process of doing it" (Paul, 2014, p. 4).

have vampire values?" is a question not just about which option maximizes your subjective expected value but about deciding *who you want to become*. Or suppose that, wanting to remain childless, you are presented with data that supports the thesis that having children confers higher life satisfaction, or greater meaning, or more of any other desirable end. The transformational experience of having a child remains open to you, but to be swayed by this data appears to be countermanding your own preferences in a sphere in which your own preferences are of significant importance.

4. Does psychedelic-assisted psychotherapy involve transformative experience?

> To begin with, the usual: the experience is so fantastic in both its novelty and its power as to beggar all possibility of adequate depiction through words. The most that can be hoped for by way of description is an approximation, and only those who have had the drug can know how far removed from actuality the approximation must be.
>
> -Scholar of religions Huston Smith, quoted in Ulrich, 2018.[8]

Alongside many such poetic tributes to the psychedelic experience, there is empirical evidence that supports the interpretation of PAP, and the changes that have been reported to follow it, as "transformative" in both Paul's *epistemic* and *personal* sense. I say "supports," rather than "demonstrates," because there are no objective criteria that can be appealed to for demarcating transformation in either sense. Clinically relevant doses of psychedelics frequently involve "peak" or "mystical" experiences, reported repeatedly in the context of clinical and experimental psychedelic use (Pahnke, 1967; Garcia-Romeu et al., 2014; Griffiths et al., 2016). These are characterized in part by a sense of sacredness, strongly felt positive mood, transcendence of space and time, a noetic quality—the subjective feeling of accessing knowledge or revelation unmediated by usual sources of validation or evidence—and ineffability. Alongside these is *ego dissolution*, the disintegration of the perceived boundary between the self and the external world, and occasionally quasi-synaesthetic[9] (Studerus et al., 2012) perceptions. These acute drug effects, and the other phenomenological aspects of a psychedelic trip (Preller and Vollenweider, 2018), are exemplary candidates for epistemic inaccessibility, with psychedelic "trips" representing a radical departure from previous experience.[10] This framing is consistent with What fMRI evidence is available which examines the psychedelic state—namely, that it is driven by significantly altered patterns of cortical activity. At a first gloss, the changes are characterized by the disintegration and desegregation of typically stable brain networks, meaning that, at a neural level, information processing takes place in ways that are markedly different from what has been experienced before (Carhart-Harris, 2019). For example, the functional connectivity of the primary visual cortex under LSD is greatly expanded, correlating with simple hallucinations and complex imagery, suggesting that considerably more parts of the brain contribute to visual processing during acute drug effects than in normal conditions (Carhart-Harris et al., 2016).

The potentially *personally* transformative nature of the psychedelic experience manifests in a range of ways. Findings in healthy and clinical populations include increases in the personality domain of openness sustained in the weeks and months after drug sessions (MacLean et al., 2011; Lebedev et al., 2016; Erritzoe et al., 2018). Openness is typified by aesthetic sensitivity, attentiveness to inner feelings, and intellectual curiosity (Costa and McCrae, 1992), where each characteristic that is described as developing in qualitative reports by patients (Watts et al., 2017; Noorani et al., 2018). Shifts in attitudes toward life and the self are also frequently reported (Studerus et al., 2011; Gasser et al., 2015; Ross et al., 2016; Belser et al., 2017; Johnson et al., 2017; Schmid and Liechti, 2018), although the magnitude of these effects is not consistently pronounced across research centers (Nicholas et al., 2018; McCulloch et al., 2022). For some patients, PAP has resulted in renewed confidence and determination to pursue long-valued goals that were nonetheless orthogonal to the target condition (Swift et al., 2017, p. 20). In others, the treatment led to the revision of life priorities and lifestyle preferences (Belser et al., 2017; Forstmann and Sagioglou, 2017), the discovery of new values and preferences, and the adoption of new habits and activities (Watts et al., 2017). Persisting life changes following PAP are attested to as much as 4.5 years following treatment (Agin-Liebes et al., 2020). Since much of the data regarding these changes derives from using psilocybin to treat existential anxiety secondary to a cancer diagnosis, or treatment-resistant depression, one possibility is that these changes are simply natural consequences of remission in these serious conditions and might equally come about following *any* successful treatment. However, this is not plausible for all such shifts—such as the sustained adoption of a vegetarian diet (Watts et al., 2017, p. 559), while changed relationships with loved ones and alterations to long-standing habits, attitudes, and priorities have been recorded after PAP for tobacco cessation (Noorani et al.,

8 Cf. Lyreskog and McKeown's (2022, p. 51) description of a transformative experience as "one with such a profound impact that once having had it, one would recognize the testimony or observation of others who had it as falling far short of communicating what the experience is like."

9 Patient reports of synesthetic experiences from Belser et al. (2017) include "my entire body was musical instrument for every sound, which was coming through my head, and it eviscerated from top to bottom… I know what a grand piano feels like when it is played." "I started tasting music… some of Indian instruments have very sharp chords, those felt metallic in my mouth."

10 This is not necessarily the case for prospective patients who are not psychedelic naïve (about whom see more in Section 7 below), although my sense, arguably supported by the existence of subjective phenomenological scales with strong discriminant validities between different pharmacologically-induced altered states of consciousness (Studerus et al., 2010), is that these experiences are significantly novel even for those familiar with other drug-induced intoxications. Additionally, there may be some prospective patients who have had sufficiently similar experience from advanced meditative practice, or holotropic breath work, or congenital synesthetic perceptual processing. Regardless, the radical novelty of the psychedelic experience will likely hold true for most patients.

2018). In the latter study, participants were smokers averaging 18 cigarettes a day, decades of smoking, and seven previous quit attempts. While changes were, in some cases, noted even in the absence of treatment success, where treatment resulted in tobacco cessation, it was "often reported as one of the *least* important effects of the study for participants in retrospect" (Noorani et al., 2018, p. 763).

Not least because psychedelic experiences are not *always* transformative in these ways—those subject to psychedelic administration can experience no such change, deteriorations (Studerus et al., 2011), or instead a reinforcing of extant worldviews (Pace and Devenot, 2021)—the precise nature and cause of these changes, and how patients come to understand them, are still unclear, remaining an important avenue for further study. One psychological model to account for the clinical changes following PAP, which might also be used to explain the non-clinical changes described here, dovetails neatly with the concept of transformative experience. Hendricks (2018) proposes that the profound awe that characterizes psychedelic-induced mystical experiences—a response to a stimulus perceived as far larger than the self, or standard experiential anchors of comparison—demands a cognitive accommodation, "the need to adjust mental structures so as to integrate [the experience]." Brouwer and Carhart-Harris (2021) operationalize a construct overlapping with transformative experiences, including but not limited to psychedelic experiences, in neurobiological terms as a "Pivotal Mental States." These states (rather than the potentially transformative outcomes they can induce) are defined by Brouwer and Carhart-Harris as "*transient, intense hyper-plastic mind and brain states, with exceptional potential for mediating transformation*," suggesting more objective criteria of "(a) *elevated cortical plasticity*, (b) *an enhanced rate of associative learning*, and (c) *a unique capacity to mediate psychological transformation*" (p. 320). As well as the advantage of generalizability across other pivotal mental states, this account benefits from an explicit valence agnosticism regarding such transformations: A hyper-plastic state that enhances the likelihood of major psychological change is not good *per se*, as the examples collated above might suggest, but rather the broad valence and precise nature of ensuing changes is dependent on contextual factors.

This valence agnosticism is of particular clinical importance when considering the role of transformative experience in PAP, not only because it underlines the need for research on how to shape contextual factors to minimize negatively experienced transformations but also because the reality of the potential for negative outcomes needs to be made apparent to prospective patients, whose prior perceptions of PAP may be unduly informed by science communications and a wider media that has for some years been beholden to a hype bubble of inflated expectations (Yaden et al., 2022). The impact of this hype is not trivial—suicidal behavior was recorded among three participants of one trial of PAP for treatment-resistant depression, and a demoralization effect, the affective response that *not even this much reported cure-all* can relieve my symptoms, might plausibly contribute to hopelessness (Gukasyan, 2023).[11] As with the clinical effects of psychedelics, the broader effects of interest here are far from guaranteed. One early pooled analysis of psilocybin studies found that, while 18% of participants reported positively-assessed changes in values and 25% positively-assessed changes in relationships with other people, about one-quarter as many reported that their values (5%) or relationships with others (7%) changed for the worse (Studerus et al., 2011). If and when PAP becomes a mainstream medical intervention, such negative changes could be a reality for significant numbers of patients.

Whatever the mechanism supporting these changes, their character, coupled with the repeated finding from one research center that psychedelic experiences are often counted among the most personally meaningful and spiritually significant experiences in a person's life—on a par with the birth of a first child or death of a parent (Griffiths et al., 2006; Johnson et al., 2017; Schmid and Liechti, 2018)—it should be taken as a serious possibility that the long-term effects of PAP are personally transformative in the sense described by Paul (2014) that is such a challenge for informed consent.

5. Do they know what they are getting themselves in for? Uncertain outcomes and transformative experiences across medicine

Are transformative experiences a particular problem for informed consent in medicine, when uncertainty about outcomes is part and parcel of the practice of medicine? In medicine (and elsewhere), the outcomes of our decisions are not guaranteed. This ignorance about the future is an inevitable part of life, and part of what living an autonomous life *is*, is deciding how to act in the face of uncertainty. But typically when choosing between medical treatment plans, a patient who is provided with the probabilities of treatment success and of side-effect risks for various options is nonetheless still *informed* in a materially significant way that does not preclude rational reflection on what is right for them: By knowing about the character, severity, and likelihood of possible outcomes, and reflecting on the personal impact of these potential outcomes, patients can model, at least roughly, the expected subjective value of each choice. Within this commonplace gray area of uncertainty, the physician provides what expertise they can, and the patient makes their best guess on the basis of this information.

The challenge from transformative experiences is a distinct one: It is not garden-variety uncertainty, in which, at the moment of choice, the patient cannot know which of the potential outcomes will come to pass and must in some sense roll a dice and hope for the best. Rather, it is that the rational, value-oriented processes of decision-making under uncertainty themselves run aground. For epistemically transformative experiences, without being able to model *what it will be like* for one or more of the potential outcomes of a choice to come to pass, she cannot assign that choice an expected subjective value. This is not a *best guess*—it is just a guess. For potentially personally transformative experiences, in which a choice can bring about deep changes to your values and perspectives: "the edifice of our choice model stands on shifting sands: in virtue of having the transformative experience we've

11 With thanks to a reviewer for this highly consequential observation.

chosen, we change what we care about… it means that, if you choose to have the experience, it will change who you are. This affects the way we understand how the decision 'turns out"' (Paul, 2019, p. 358–359). Deciding whether to have a child, to join the military or a monastery, or to undergo any transformative experience, is not simply about what will maximize your subjective expected value, but rather about whether you are willing to risk becoming someone different; however, PAP does not stand alone as the only treatment with transformative features known to medicine. Given that epistemically transformative experiences are as accessible as trying a new fruit for the first time, it would be odd for them *not* to arise in healthcare settings. But *any* psychoactive medicine to which a patient is naive represents an epistemically transformative experience, as well as many instances of pain that are largely medical procedure-specific, among which are uteroscopies, bone marrow donations, and dental implants. Inasmuch as PAP provides a novel challenge for informed consent, it is because of their potentially *personally* transformative nature.

While personally transformative choices can be found elsewhere in medicine, note that they characteristically take a different form which is distinct when considering informed consent. Challenging pregnancies or deliveries, or some cases of pediatric neurosurgical disease (Shlobin et al., 2022), bring to light the reality that there are some medical contexts in which all roads lead to transformative experience—for example the choice between living with the death of a child or with a permanently disabled child. Any available treatment option (or electing not to treat) is liable to profoundly change how you see yourself, how you see the world, or what is important to you. Suppose that the lesson you took away from this article (*pace* my suggestions below) was that, because transformative experience makes truly informed consent impossible, any potentially transformative procedures would become so ethically hazardous as to be impermissible for clinicians to perform. This would not mean that the ethical hazard of transformative experience is avoided since medical inaction can result in transformation as much as action.

There are some scenarios, though, where only one medical choice leads to personal transformation. Paul's exemplar transformative experience, having children, is at least sometimes accommodated within the medical realm, as when parents seek support in conceiving through *in vitro* fertilization and other fertility treatments. Undergoing gender-affirmation procedures might similarly be conceived of as a model transformative experience, but considering that, in distinction to the potentially transformative nature of PAP, in these cases, transformative experience is reflectively and actively *sought*: Conceiving and bearing a child, or the development of secondary sex characteristics of the sex with which the individual identifies, is the *aim* of these procedures.[12] For these patients to *not* undergo a transformative experience would lead to a sense that the treatment has failed and a comparison of themselves with prospective PAP patients who suffer from depression, addiction, or another psychopathology: These patients would judge treatment as successful if their symptoms abated, whether or not they underwent a transformative experience (indeed, they may be considering other, non-transformative interventions alongside PAP).[13] Here, the transformative experience is a likely foreseen consequence, rather than the aimed-for outcome of intervention. Although such a distinction is typically viewed as morally pertinent (McIntyre, 2019), it does not need to be accepted for how I propose we deal with the challenge of transformative experience below: much of what I recommend might equally apply to these similar procedures.

6. Psychedelic experiences as a challenge for informed consent

The evidence of psychedelic-induced value, behavior, and personality change remains preliminary—as do many of the findings of the psychedelic "renaissance," but their recurrence across different treatment indications, and across different research centers, as well as how consequential these changes can be, provides sufficient cause to take seriously the possibility of such changes. This is of substantial relevance to clinical ethics: recall that a patient needs to understand the material implications of a potential treatment to provide informed consent, because this understanding is required to not only autonomously authorize an intervention but also to judge whether the treatment is right *for them*—i.e., whether undergoing the treatment is most likely to bring about an outcome that coheres with their values and preferences, but, since the relevant information about PAP is epistemically inaccessible at the point of deciding whether to commence with treatment, a patient cannot provide *informed* consent to the transformative facets of PAP as we standardly deploy the term—it must always involve a significant leap of faith: not just about what it will be like to experience PAP, but about who they might be following it.

A possible objection is that the bar for *informed consent* is being set too high here. Perhaps being informed that there is an epistemically inaccessible aspect of the treatment, that is ineffable, experientially mysterious, or personally transformative, should count as sufficiently informed for informed consent. To this, I would propose that a threshold of material understanding needs to be met for informed consent, or it does not. A lack of understanding of the material facts of another treatment would not be an acceptable basis on which to proceed with treatment. Excusing PAP from this requirement might fairly be charged with the accusation of "psychedelic exceptionalism"—"believ[ing] that the nature of the experiences people have on psychedelics are so sacred or important that the normal rules do not apply" (Johnson, 2020, p. 580). However, what is at hand here is not a special pleading to excuse psychedelics from the normal rules *because they are psychedelic*, rather, to reassess the appropriateness of the normal rules for psychedelics *because they are transformative*, along with any other medical interventions which involve transformative experience. Writing on PAP with transformative experience in mind, Smith and Sisti (2021) note that "we regularly accept

12 The same may be true of perhaps the ultimate transformative experience that is the goal of medical assistance in dying.

13 Here, I restrict myself to medical applications of psychedelics, rather than the expressly non-medical uses as permitted by, e.g., recent legislational changes in Oregon, for which distinct consenting frameworks are appropriate.

consent to various activities that we cannot be fully imagined—including beginning new relationships, getting married, starting a job, and moving." Certainly this much is true, but such experiences tend not to take place within the context of an asymmetrical, professionalized relationship between a fiduciary and a vulnerable person, governed by a duty of care. In choosing to marry someone, for example, you are making a "commitment to discover a future life together" (Paul, 2014, p. 97), a reality that is typically brought out in the rituals of the marriage ceremony. We *do* accept consent when people choose to undergo transformative experiences such as marriage or parenthood, but this is a markedly different animal to the *informed* consent that typifies clinical practice.

At this point, it would be useful to rearticulate the two functions of informed consent in clinical practice that were outlined above. The first is that of *autonomous authorization*, or ensuring *valid consent*—that is, ensuring physicians do not proceed with treatment without permission, thereby violating the rights of patients. In other contexts, *autonomous authorization* can happen on very little understanding—you can autonomously choose to gamble, even where the odds, or indeed the outcomes are not known. You can agree to pay $20 to roll a dice: roll a 1 and you'll get a surprise! Supposing you don't know how many sides the dice has, or have the faintest idea what the surprise may be, such a gamble clogs up our processes of decision-making under uncertainty at least partially how transformative experiences do.[14] Agreeing to roll the dice is perhaps unwise. It may be liable to produce poor outcomes. However, it would be hard to call the choice *non-autonomous*, even though we know such a gambler does not understand what they are getting themselves in for. However, a higher threshold is demanded in biomedical contexts: While we do not consider a roulette player's consenting invalid when they are under the misapprehension of the "gambler's fallacy" (the last four spins were red, the next is sure to be black!), we *do* question the validity of the consent of a prospective clinical trial participant reasoning under the "therapeutic misconception" (not understanding that their trial participation is aimed at generating scientifically valid data, rather than their medical best interests).

Smith and Sisti (2021) and Smith and Appelbaum (2022), in papers reflecting more widely on ethical issues in PAP, acknowledge that there is more we could do to narrow the apparent informational gap when seeking consent. They observe that "for anyone to imagine what they would be like if their values changed or their awareness was altered is a daunting task" (Smith and Appelbaum, 2022, p. 2), arguing that the "novel risks [of PAP...] warrant an enhanced informed consent process—one that is more comprehensive than what may be typical for other psychiatric medications" (Smith and Sisti, 2021, p. 1). Smith and Sisti propose discussion prompts for the enhanced consent process (e.g., "you may feel a sense that you have lost yourself, that everything is somehow connected, or that all is one"; "you may feel a deeper connection with nature"; "you may become more spiritual—whether or not you currently consider yourself spiritual"), while Smith and Appelbaum propose facilitating exchanges between prospective patients and those who have previously been through the treatment. A prospective patient who has gone through these enhanced processes is clearly better informed than one who has not, and as such, both of these steps are valuable inclusions to the processes before treatment begins. However, if the characterization of PAP as involving transformative experience is correct, there remains an *epistemic inaccessibility* from the point of view of the prospective patient. Speaking to former patients is akin to speaking to those who have become parents to find out *what it is really like* to become a parent or speaking to a Carthusian monk to find out *what it is really like* to commit to near-total silence for a lifetime. Uncertainty can be reduced, but the perspectival shifts that result from transformative experiences can *only* come from the experience itself (Lyreskog and McKeown, 2022, p. 52).[15]

I take both of the above proposals as valuable inclusions to the processes before treatment inception: A prospective patient who has gone through these enhanced processes is better informed than one who has not. Indeed, I would argue that such patients tend to be informed enough to pass the higher threshold of understanding required for *autonomous authorization* in healthcare settings.

Although, considering that we expect consent in the medical sphere—*informed* consent—requires more than autonomous authorization, we also expect physicians, in their position as fiduciaries for their patients, to promote value-aligned decision-making by securing an understanding and rational weighing of the informative and emotional content of their decisions. However, where potentially transformative choices are at hand, comprising both an epistemic inaccessibility of the lived experience of one option, as well as a psychological incommensurability between patients before and after the treatment, such rational weighing to secure value-aligned decision-making is not possible. Recall the psilocybin for tobacco cessation study: participants who were, after many years of failed attempts, so motivated to quit smoking that they volunteered for an experimental medical trial. For some, following the trial, the changes they experienced were such that quitting smoking was of secondary importance to them.

Exposing oneself to the possibility of transformative change clearly *is* something that can be consented to, given the recognized legitimacy of the marriage ceremony. A decision to marry can (indeed, legally must) be made autonomously, even if the material, lived consequences of this decision cannot be foreseen or explained in advance. A decision to explore the unknown, to risk becoming a heretofore unknown self, can be consented to, but it is not rightly understood as *informed consent* as the term is used in clinical ethics.

7. Can PAP be done ethically, if transformative experience renders informed consent impossible?

Given the centrality of informed consent to modern discourse in biomedical ethics, my summative claim so far—that, when considering its potentially transformative nature, what we typically conceive of as informed consent cannot be secured for PAP—merits

14 Undertaking such a gamble is, after all, *epistemically transformative*, if not *personally transformative*.

15 On the potential and the shortcomings of clearing the "epistemic wall" through testimony, literature, and imagination, see Ismael (2019), Paul (2019), and Woollard (2021).

some exploration of whether PAP can be performed ethically. In the section, I present some considerations that can inform reflection on this question.

First, if psychedelic experiences can be transformative in nature, it may be that their transformational potential does not weigh equally heavily on all prospective patients. Certainly, the *epistemically* transformative nature of psychedelic experience is less of a concern for patients who are not psychedelically naive. Although *prima facie*, there is no reason why psychedelic-familiar patients would be immune to the potentially personally transformative effects of PAP, robust evidence on this matter is currently unavailable. Moreover, practically speaking, this does not offer much of an ethical backdoor to offering PAP without jeopardizing high standards of informed consent: Restricting PAP to those with prior experience of psychedelics would generate the perverse incentive of encouraging prospective patients to seek psychedelic experiences outside of controlled settings, or simply to lie in their medical histories, in order to access treatment.

For the physician that accepts to some degree the force of the challenge from transformative experience, drawing in broader considerations could guide decision-making. They might point to the currently limited evidence of efficacy for PAP—it has still yet to pass clinical trials—or acknowledge the methodological issues that complicate confidence in the usefulness of that data (Muthukumaraswamy et al., 2021). But this is a strategy to avoid, rather than engage with the issue—and a strategy that is unlikely to work in perpetuity. A related strategy might be to point to the state of the *comparative* evidence for PAP. Suppose that the results of the only published study directly comparing PAP to treatment as usual (Carhart-Harris et al., 2021)—i.e., no significant differences in antidepressant effects—were ultimately replicated across some or all clinical indications, in this case, the potential for infringement on informed consent might serve as justification to avoid PAP, or to leave it as a 3rd or 4th line treatment.

Another avenue could be worth exploring if the distinction I drew between PAP and other elective interventions with transformative potential (e.g., IVF and gender-affirmation procedures) is not as clear as I suggested. Previously, I suggested that IVF and gender-affirmation surgeries involve transformative change as the directly desired outcome of intervention, while this is not the case for those seeking PAP. But an argument could be made that this is not always the case for PAP. Some clinical indications for which PAP seems promising—for example severe, treatment-resistant depression, and existential distress secondary to life-threatening illness—might be framed as *treated* by a transformation of values, worldview, and priorities, in a sense that is not true for all potential applications.[16] If this is the case, at least some uses of PAP could be as permissible as those transformative treatments.

My sense is that a better approach would be to think more deeply about what informed consent is, and why we care about it. Despite the central importance of *autonomous authorization* and *promoting value-aligned decision-making*, informed consent is not the only tool that is deployed in legitimizing medical intervention. When informed consent is not secured because it is impossible to secure, as in some emergency settings or when a patient is incapacitated, treatment is accepted as legitimate through the "emergency exception" guided by the "reasonable patient" doctrine, or through proxy decision-making (Vojta and Brown, 2015; Wrigley, 2018). Though these alternative legitimate routes are conceived of as stand-ins for informed consent, they are not informed consent *per se*. As alternative methods of treatment legitimation are acceptable in other medical contexts, it is at least in principle possible that the same can be true of PAP.

8. If not informed consent, then what?

Hopefully by this point, my claim—that a patient cannot provide informed consent, as we typically understand the term, to PAP—appears more plausible. It is not that a patient cannot *autonomously authorize* an intervention that involves a transformative experience. Rather, the physician's duty to support value-aligned decision-making cannot be met, if not because of the *epistemic inaccessibility* of some of the materially relevant facets of the treatment, then because of the non-clinical changes to values and priorities that can occur as a consequence of treatment. This is not to claim that physicians who currently administer PAP in the context of clinical trials, or who will do so therapeutically after licensing, are morally failing their patients in failing to secure informed consent. To the extent that PAP is transformative, informed consent is not *possible*, and therefore cannot be *required*, before beginning.

This does not need to be a problem. As outlined above, central though informed consent may be in contemporary medicine, it is not the *sine qua non* of ethical practice. It is a tool that was developed at a specific, historically contingent point, originally to minimize some of the risks associated with the asymmetrical nature of the relationship between patient and doctor—the risks of undermining autonomy, and of coercion, deception, and manipulation. Any of these charges might be leveled at a physician who intentionally withholds or misrepresents material information concerning the consequences of a treatment, including if the information is not shared in such a manner as the patient *understands* it, but in the case of transformative experience, the threshold for *understanding* cannot be met. Practitioners involved in current trials of PAP are not intentionally or negligently withholding materially relevant information—i.e., they are not deceiving or subtly coercing patients—and so the consent secured is *valid* (Bullock, 2018), but patients cannot be properly understood as *informed* about the consequences of the treatment as we usually understand it, given the forward-looking inaccessibility of the material features of the treatment. To choose PAP is, in an important respect, to choose to make a leap of faith. As considering transformative experiences in other contexts demonstrates that leaps of faith can be made autonomously, if not from a position of materially complete understanding.

What does this mean? Obviously, it does not mean that we should weaken patient protections in PAP. The increased vulnerability and suggestibility experienced during acute drug effects predispose patients to heightened risks, including the

16 Although this may depend on the nature of the broader psychotherapeutic programme in which the drug sessions are contained (Devenot et al., 2022).

grievous harms that have come to light in recent years (Hall, 2021) and the range of other ethical challenges that arise in a modality that heightens existing relational risks of therapeutic encounters, as well as introducing new ones (Brennan et al., 2021). Rather, it demands recognition that our standard conception of *informed consent* as a legitimizing procedure in medicine may not be appropriate for PAP.

Thinking along these lines introduces another dimension along which to consider a reconceptualization of the nature of the relationship between a PAP practitioner and their patient, which is not best understood as that identical to that which typically pertains between a physician and patient. The co-discovery that takes place is more akin to that between a psychotherapist and her client (see Nayak and Johnson, 2021). Indeed, readers with less biomedical orientations may have been unperturbed by the foregoing argument on the basis that, to some approximation, the same problem from transformative experience applies to all insight-oriented (rather than symptom-focused) psychotherapies and psychoanalysis (Saks and Golshan, 2013; Poppe, 2019).

Previous writers on informed consent in long-term psychotherapies have acknowledged that "neither party knows at the outset in what directions the therapy might evolve, what information or understanding may unexpectedly emerge... or what the final outcome will be" (Beahrs and Gutheil, 2001, p. 6), but ultimately conclude that informed consent is possible even if "clear and probable outcomes cannot realistically be stated" in advance (p. 6). This position is buttressed by the temporally extended nature of long-term psychotherapeutic or psychoanalytic work, permitting the progressive, longitudinal disclosure of the material facets of the process as they arise, and affording the opportunity to discontinue treatment. In comparison, the temporally compressed nature of PAP—changes arise very quickly following psychedelic intervention—may not permit such discontinuation. Additionally, I submit that optimism about the possibility of fully informed consent to, say, psychoanalysis fails to recognize the force of the challenge from transformative experience. The issue is not simply that the possible outcomes are unknown at the outset of treatment and so cannot have likelihoods attached to them. Rather, even if the possible outcomes could be identified, a prospective patient could not know how to assign values to her options and choose between them, given that the process of coming to know those outcomes could radically alter her values and preferences in relation to them. Reflecting on some of the relational risks that can arise in psychoanalysis, Saks and Golshan write: "No one can understand something like transference or regression until it happens. And once it happens, one is not free to truly consent or decline: one is already too caught in the transference or regression to be able to escape… [Like a religious conversion,] one may imagine that if one doesn't care for it, one can just return to how one was. But arguably, after the conversion, one doesn't want to be any different. It is too late to go back" (Saks and Golshan, 2013, p. 37; see also Poppe, 2019).

While a range of safety considerations (as well as standard clinical trials requirements) demand that a lengthy consenting process be undertaken with participants in current clinical trials of PAP (Johnson et al., 2008; Smith and Sisti, 2021), the challenge from transformative experience suggests that the inappropriateness of the term "informed consent" for covering some aspects of treatment is acknowledged, both among practitioners and also with patients. Involving as it does the prescription of a controlled drug, PAP may predominantly be institutionally contained within the medical establishment when it is licensed. Nonetheless, the foregoing arguments suggest that the choice to proceed is distinct from other medical treatments, involving a process of discovery which cannot be understood before undertaken: not just about what outcomes and side-effects might arise, but what kind of values might I have? What kind of person might I become?

A modest step toward acknowledging that legitimizing procedures for PAP differ from the norm can be taken by reflecting on the etymology of *informed consent*, a term in which both words might be viewed as hangovers from a more paternalistic era of medicine (Wise, 2007). *In* + *formare* means to shape, form into, or fashion, while *com* +*sentire* is to think or feel together, to be of one mind—together implicitly characterizing a prospective patient as a passive recipient to be led to agree with a physician's better judgment about what is in their best medical interests. Changing how we describe the consenting process to include more pro-active or agential terminology—reflective commitment, decision, or choice are some options—would be a place to start, not so much because of some occult power of etymology, as because word choice can impact cognitive processes and frames of thought by invoking different mental schemata (Loftus and Zanni, 1975; Farrow et al., 2018). As well as explicitly drawing a distinction from informed consent as it is practiced for non-transformative treatments, a suitable shift in vocabulary can underline the depth of the individual nature of the decision to be made. If the doctrine of informed consent that partially grounds the physician's duty of care is poorly suited to the transformative context of PAP, what ought to replace it? *Consent*, as *autonomous authorization*, remains important, since the wrongdoing of administering PAP to an unwilling patient clearly dwarfs the challenge that comes from the epistemic inaccessibility of transformative experiences, as does the exploitation of a patient in the heightened state of vulnerability and suggestibility during acute drug effects.[17] Similarly, PAP practitioners would be committing a serious transgression if they were to intentionally misrepresent the nature of the treatment, e.g., by overpromising with regard to its efficacy (Rucker and Young, 2021). Such risks could still be minimized by retaining the concept of *valid* consent (Cave, 2021), wherein patients are confirmed in their understanding of the broad nature of the treatment. The requirements for disclosure ought to at least include those recommended in Smith and Sisti (2021) "enhanced consent," including an acknowledgment of the potential long-term changes in outlook, but it would be remiss of practitioners not to explicitly underline both the gravity, and the strangeness, *qua* medical intervention, of the treatment patients are about to embark upon, as contrasted both to their previous experience of medical treatments, and against the rest of their life. Patients should be made aware that there is good reason to think that the treatment they are about to

17 Indeed, some underground practitioners *double up* on the use of consent during acute drug effects in recognition of the special risk to autonomy that they pose, using a two-stage consent process to touch, seeking consent both before psychedelic administration and again during acute drug effects (Brennan et al., 2021).

undergo may be one of the most meaningful experiences of their life and that this is not universally experienced positively. Moreover, for at least some treatment indications, patients ought to know that the health condition that brought them to the clinic may, in retrospect, be of comparatively minor importance to the other dimensions of the experience. In reality, weaving these considerations into practice may not be a trivial undertaking. The information to be reviewed during the consenting procedure, relating to both the risks and realities of the acute drug experience, as well as the potentially transformative nature of the treatment in the long term, constitutes just one of the myriad factors for clinicians to consider when preparing patients for PAP. This entire process has a formative effect on the patient's "set and setting," the extrapharmacological factors that are understood to impact the psychedelic experience itself and the outcomes that follow (Haijen et al., 2018).

9. Conclusion

The rebirth of PAP as a clinical tool is itself characterized by a process of discovery, being undertaken by the breadth of its supporters and stakeholders, as we attempt to find frameworks to make sense of the PAP model, especially where our standard operating procedures seem insufficient. Just as this process seeks to determine and optimize the mechanisms of action of PAP (Hendricks, 2018; Walsh and Thiessen, 2018; Fischman, 2019) and design models that might be employed to equitably provide it for those who can benefit from it (Noorani, 2020; Zelner, 2020), it will also involve interrogating the ethical frameworks supporting the treatment itself. This process of discovery will need to explore the practitioner–patient dynamic,[18] drawing from other models of care, especially if "psychedelic therapy is like putting a magnifying glass on many of the [relational] aspects of non-psychedelic therapy," wherein the practitioner is "associated with what might be one of the [most] meaningful experiences in a person's life" (Johnson, 2020).

Does the foregoing—suggesting that informed consent is not an appropriate norm for addressing the potentially transformative nature of PAP—amount to "psychedelic exceptionalism"? To answer this, I will draw a parallel to the scientific challenge for PAP that began the current study, on the appropriateness of the double-blind randomized placebo-controlled trial. To bypass the drug evaluation processes for PAP in their entirety—as in the successful Oregon ballot initiative to legalize "psilocybin services"—is clearly to excuse psychedelics from "the normal rules" of drug safety and efficacy testing. However, consider that PAP is hypothesized to partially depend on psychotherapeutic support and involves hard-to-blind subjective effects, not as bugs but as features. To insist that its efficacy testing wholly conform to rules that are designed to discount extrapharmacological factors, and which depend on neither patient nor practitioner knowing if an active agent is at work, is to focus on the rules rather than what the rules seek to secure. While pragmatic and feasible steps can be made to conform PAP trial processes to better fit established norms (Aday et al., 2022), we should remain flexible to the reality that the valued end at which these trials aim—objective drug efficacy evaluation—can also be approached by incorporating complementary evaluation methodologies, without compromising our epistemic standards (Butler et al., 2022). In a similar vein, if the transformative nature of PAP is such that informed consent, as we standardly understand it, is not feasible, pragmatic steps including those suggested by Smith and Sisti (2021) and Smith and Appelbaum (2022) can narrow the gap between current practice and the normative ideal, but if this much—as I have suggested—is not enough to completely conform to "the normal rules," we should not lose sight of the end at which those rules aim, namely, ethical treatment of patients.

The gold-standard status of the double-blind placebo-controlled trial is akin to the prized position of informed consent in clinical ethics, but neither is manna from heaven: They developed at specific, historically contingent points in time to meet the perceived needs of the moment (Faden and Beauchamp, 1986; Berg et al., 2001, Ch. 14; Oram, 2018). Acknowledging that our most powerful tools may not be the best approach to solving all problems—that they may not always live up to our expectations for them—does not lessen their general value (Berg et al., 2001). As new medical techniques and technologies develop, the more likely it is that our medical ethics must be revised to keep in step (Einav and Ranzani, 2020).

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

18 See Timmermann et al. (2020) for one such example.

Publisher's note

References

Aday, J. S., Heifets, B. D., Pratscher, S. D., Bradley, E., Rosen, R., and Woolley, J. D. (2022). Great expectations: recommendations for improving the methodological rigor of psychedelic clinical trials. *Psychopharmacology* 239, 1989–2010. doi: 10.1007/s00213-022-06123-7

Agin-Liebes, G. I., Malone, T., Yalch, M. M., Mennenga, S. E., Ponté, K. L., Guss, J., et al. (2020). Long-term follow-up of psilocybin-assisted psychotherapy for psychiatric and existential distress in patients with life-threatening cancer. *J. Psychopharmacol.* 34, 155–166. doi: 10.1177/0269881119897615

Beahrs, J. O., and Gutheil, T. G. (2001). Informed consent in psychotherapy. *Am. J. Psychiatry* 158, 4–10. doi: 10.1176/appi.ajp.158.1.4

Beauchamp, T. L. (2009). "Autonomy and consent," in *The Ethics of Consent: Theory and Practice, Online edn*, eds F. Miller and A. Wertheimers (New York, NY: Oxford Academic), p. 55–78. doi: 10.1093/acprof:oso/9780195335149.003.0003

Beauchamp, T. L., and Childress, J. F. (2019). *Principles of Biomedical Ethics*. Oxford: Oxford University Press

Belser, A. B., Agin-Liebes, G., Swift, T. C., Terrana, S., Devenot, N., Friedman, H. L., et al. (2017). Patient experiences of psilocybin-assisted psychotherapy: an interpretative phenomenological analysis. *J. Hum. Psychol.* 57, 354–388. doi: 10.1177/0022167817706884

Berg, J. W., Appelbaum, P. S., Lidz, C. W., and Parker, L. S. (2001). *Informed Consent: Legal Theory and Clinical Practice*. Fair Lawn, NJ: Oxford University Press.

Brennan, W., Jackson, M. A., MacLean, K., and Ponterotto, J. G. (2021). A qualitative exploration of relational ethical challenges and practices in psychedelic healing. *J. Hum. Psychol.* 1–31. doi: 10.1177/00221678211045265

Brouwer, A., and Carhart-Harris, R. L. (2021). Pivotal mental states. *J. Hum. Psychol.* 35, 319–352. doi: 10.1177/0269881120959637

Brudney, D. (2009). Beyond autonomy and best interests. *Hastings Center Rep.* 39, 31–37. doi: 10.1353/hcr.0.0113

Bullock, E. (2018). "Valid consent," in *The Routledge Handbook of the Ethics of Consent*, eds A. Müller and P. Schaber (New York, NY: Routledge), 119–130. doi: 10.4324/9781351028264-9

Butler, M., Jelen, L., and Rucker, J. (2022). Expectancy in placebo-controlled trials of psychedelics: if so, so what?. *Psychopharmacology* 239, 3047–3055. doi: 10.1007/s00213-022-06221-6

Capron, A. M. (2008). "Legal and regulatory standards of informed consent in research," in *Oxford Textbook of Clinical Research Ethics*, eds E. Emanuel, C. Grady, R. Crouch, R. Lie, F. Miller, and D. Wendler (Oxford: Oxford University Press), 613–632.

Carhart-Harris, R., Giribaldi, B., Watts, R., Baker-Jones, M., Murphy-Beiner, A., Murphy, R., et al. (2021). Trial of psilocybin versus escitalopram for depression. *N. Engl. J. Med.* 384, 1402–1411. doi: 10.1056/NEJMoa2032994

Carhart-Harris, R. L. (2019). How do psychedelics work?. *Curr. Opin. Psychiatry* 32, 16–21. doi: 10.1097/YCO.0000000000000467

Carhart-Harris, R. L., Muthukumaraswamy, S., Roseman, L., Kaelen, M., Droog, W., Murphy, K., et al. (2016). Neural correlates of the LSD experience revealed by multimodal neuroimaging. *Proc. Natl. Acad. Sci.* 113, 4853–4858. doi: 10.1073/pnas.1518377113

Cave, E. (2021). Valid consent to medical treatment. *J. Med. Ethic.* 47, e31.

Christman, J. (1988). Constructing the inner citadel: recent work on the concept of autonomy. *Ethics* 99, 109–124. doi: 10.1086/293038

Costa, P. T., and McCrae, R. R. (1992). Normal personality assessment in clinical practice: the NEO personality inventory. *Psychol. Assess.* 4:5. doi: 10.1037/1040-3590.4.1.5

Devenot, N., Seale-Feldman, A., Smith, E., Noorani, T., Garcia-Romeu, A., and Johnson, M. W. (2022). Psychedelic identity shift: a critical approach to set and setting. *Kennedy Institut. Ethics J.* 32, 359–399.

Dickert, N. W., Eyal, N., Goldkind, S. F., Grady, C., Joffe, S., Lo, B., et al. (2017). Reframing consent for clinical research: a function-based approach. *Am. J. Bioeth.* 17, 3–11. doi: 10.1080/15265161.2017.1388448

Dougherty, T. (2020). Informed consent, disclosure, and understanding. *Philos. Public Affairs* 48, 119–150. doi: 10.1111/papa.12164

Dsubanko-Obermayr, K., and Baumann, U. (1998). Informed consent in psychotherapy: demands and reality. *Psychother. Res.* 8, 231–247.

Einav, S., and Ranzani, O. T. (2020). Focus on better care and ethics: are medical ethics lagging behind the development of new medical technologies? *Intens. Care Med.* 46, 1611–1613. doi: 10.1007/s00134-020-06112-4

Erritzoe, D., Roseman, L., Nour, M. M., MacLean, K., Kaelen, M., Nutt, D. J., et al. (2018). Effects of psilocybin therapy on personality structure. *Acta Psychiatr. Scand.* 138, 368–378. doi: 10.1111/acps.12904

Eyal, N. (2018). "Informed consent," in *The Routledge Handbook of the Ethics of Consent*, eds A. Müller and P. Schaber (New York, NY: Routledge), 119–130. doi: 10.4324/9781351028264-25

Faden, R. R., and Beauchamp, T. L. (1986). *A History and Theory of Informed Consent*. New York, NY: Oxford University Press.

Farrow, K., Grolleau, G., and Mzoughi, N. (2018). What in the word! The scope for the effect of word choice on economic behavior. *Kyklos* 71, 557–580. doi: 10.1111/kykl.12186

Fischman, L. G. (2019). Seeing without self: discovering new meaning with psychedelic-assisted psychotherapy. *Neuropsychoanalysis* 21, 53–78. doi: 10.1080/15294145.2019.1689528

Forstmann, M., and Sagioglou, C. (2017). Lifetime experience with (classic) psychedelics predicts pro-environmental behavior through an increase in nature relatedness. *Journal of Psychopharmacology*, *31*, 975-988.

Garcia-Romeu, A., Griffiths, R., and Johnson, M. (2014). Psilocybin-occasioned mystical experiences in the treatment of tobacco addiction. *Curr. Drug Abuse Rev.* 7, 157–164. doi: 10.1177/0269881117714049

Gasser, P., Kirchner, K., and Passie, T. (2015). LSD-assisted psychotherapy for anxiety associated with a life-threatening disease: a qualitative study of acute and sustained subjective effects. *J. Psychopharmacol.* 29, 57–68. doi: 10.1177/0269881114555249

Griffiths, R. R., Johnson, M. W., Carducci, M. A., Umbricht, A., Richards, W. A., Richards, B. D., et al. (2016). Psilocybin produces substantial and sustained decreases in depression and anxiety in patients with life-threatening cancer: a randomized double-blind trial. *J. Psychopharmacol.* 30, 1181–1197. doi: 10.1177/0269881116675513

Griffiths, R. R., Johnson, M. W., Richards, W. A., Richards, B. D., McCann, U., and Jesse, R. (2011). Psilocybin occasioned mystical-type experiences: immediate and persisting dose-related effects. *Psychopharmacology* 218, 649–665. doi: 10.1007/s00213-011-2358-5

Griffiths, R. R., Richards, W. A., Johnson, M. W., McCann, U. D., and Jesse, R. (2008). Mystical-type experiences occasioned by psilocybin mediate the attribution of personal meaning and spiritual significance 14 months later. *J. Psychopharmacol.* 22, 621–632. doi: 10.1177/0269881108094300

Griffiths, R. R., Richards, W. A., McCann, U., and Jesse, R. (2006). Psilocybin can occasion mystical-type experiences having substantial and sustained personal meaning and spiritual significance. *Psychopharmacology* 187, 268–283. doi: 10.1007/s00213-006-0457-5

Gukasyan, N. (2023). On blinding and suicide risk in a recent trial of psilocybin-assisted therapy for treatment-resistant depression. *Med* 4, 8–9. doi: 10.1016/j.medj.2022.12.003

Haijen, E. C., Kaelen, M., Roseman, L., Timmermann, C., Kettner, H., Russ, S., et al. (2018). Predicting responses to psychedelics: a prospective study. *Front. Pharmacol.* 9:897. doi: 10.3389/fphar.2018.00897

Hall, W. (2021). *Ending the Silence Around Psychedelic Therapy Abuse*. Mad In America. Retrieved at: https://www.madinamerica.com/2021/09/ending-silence-psychedelic-therapy-abuse/ (accessed, September 5, 2021).

Hendricks, P. S. (2018). Awe: a putative mechanism underlying the effects of classic psychedelic-assisted psychotherapy. *Int. Rev. Psychiatry* 30, 331–342. doi: 10.1080/09540261.2018.1474185

Hurd, H. M. (1996). The moral magic of consent. *Legal Theory* 2, 121–146. doi: 10.1017/S1352325200000434

Hurd, H. M. (2004). Blaming the victim: a response to the proposal that criminal law recognize a general defense of contributory responsibility. *Buff. Crim. L. Rev.* 8:503. doi: 10.1525/nclr.2005.8.2.503

Ismael, J. (2019). Experience, transformation, and imagination. *Riv. Int. Filosofia e Psicol.* 10, 330–338. doi: 10.4453/rifp.2019.0028

Joffe, S., and Truog, R. D. (2010). "Consent to medical care: the importance of fiduciary context," in *The Ethics of Consent: Theory and Practice*, eds F. Miller and A. Wertheimers (New York, NY: Oxford Academic), 347. doi: 10.1093/acprof:oso/9780195335149.003.0014

Johnson, M. W. (2020). Consciousness, religion, and gurus: pitfalls of psychedelic medicine. *ACS Pharmacol. Transl. Sci.* 4, 578–581. doi: 10.31234/osf.io/zwy96

Johnson, M. W., Garcia-Romeu, A., and Griffiths, R. R. (2017). Long-term follow-up of psilocybin-facilitated smoking cessation. *Am. J. Drug Alcohol Abuse* 43, 55–60 doi: 10.3109/00952990.2016.1170135

Johnson, M. W., Richards, W. A., and Griffiths, R. R. (2008). Human hallucinogen research: guidelines for safety. *J. Psychopharmacol.* 22, 603–620. doi: 10.1177/0269881108093587

Katz, J. (2002). *The Silent World of Doctor and Patient*. JHU Press. doi: 10.56021/9780801857805

Lebedev, A. V., Kaelen, M., Lövdén, M., Nilsson, J., Feilding, A., Nutt, D. J., et al. (2016). LSD-induced entropic brain activity predicts subsequent personality change. *Hum. Brain Mapp.* 37, 3203–3213. doi: 10.1002/hbm.23234

Loftus, E. F., and Zanni, G. (1975). Eyewitness testimony: the influence of the wording of a question. *Bull. Psychon. Soc.* 5, 86–88. doi: 10.3758/BF03336715

Lyreskog, D. M., and McKeown, A. (2022). On the (non-) rationality of human enhancement and transhumanism. *Sci. Eng. Ethics* 28, 1–18. doi: 10.1007/s11948-022-00410-4

MacLean, K. A., Johnson, M. W., and Griffiths, R. R. (2011). Mystical experiences occasioned by the hallucinogen psilocybin lead to increases in the personality domain of openness. *J. Psychopharmacol.* 25, 1453–1461. doi: 10.1177/0269881111420188

Manson, N. C., and O'Neill, O. (2007). *Rethinking Informed Consent in Bioethics*. Cambridge: Cambridge University Press. doi: 10.1017/CBO9780511814600

McCulloch, D. E. W., Grzywacz, M. Z., Madsen, M. K., Jensen, P. S., Ozenne, B., Armand, S., et al. (2022). Psilocybin-induced mystical-type experiences are related to persisting positive effects: a quantitative and qualitative report. *Front. Pharmacol.* 13:560. doi: 10.3389/fphar.2022.841648

McIntyre, A. (2019). "Doctrine of double effect," in *The Stanford Encyclopedia of Philosophy*, *Spring 2019 Edition*, ed N. Edward. Available online at: https://plato.stanford.edu/archives/spr2019/entries/double-effect/ (accessed April 1, 2023).

Muthukumaraswamy, S. D., Forsyth, A., and Lumley, T. (2021). Blinding and expectancy confounds in psychedelic randomized controlled trials. *Expert Rev. Clin. Pharmacol.* 14, 1133–1152. doi: 10.1080/17512433.2021.1933434

Nayak, S., and Johnson, M. W. (2021). Psychedelics and psychotherapy. *Pharmacopsychiatry*, 54, 167–175. doi: 10.1055/a-1312-7297

Nayak, S. M., Singh, M., Yaden, D. B., and Griffiths, R. R. (2023). Belief changes associated with psychedelic use. *J. Psychopharmacol. 37*, 80–92. doi: 10.1177/02698811221131989

Nicholas, C. R., Henriquez, K. M., Gassman, M. C., Cooper, K. M., Muller, D., Hetzel, S., et al. (2018). High dose psilocybin is associated with positive subjective effects in healthy volunteers. *J. Psychopharmacol.* 32, 770–778. doi: 10.1177/0269881118780713

Noorani, T. (2020). Making psychedelics into medicines: the politics and paradoxes of medicalization. *J. Psychedelic Stud.* 4, 34–39. doi: 10.1556/2054.2019.018

Noorani, T., Garcia-Romeu, A., Swift, T. C., Griffiths, R. R., and Johnson, M. W. (2018). Psychedelic therapy for smoking cessation: Qualitative analysis of participant accounts. *J. Psychopharmacol.* 32, 756–769.

O'Neill, O. (2002). *Autonomy and Trust in Bioethics*. Cambridge: Cambridge University Press. doi: 10.1017/CBO9780511606250

Oram, M. (2018). *The Trials of Psychedelic Therapy: LSD Psychotherapy in America*. Baltimore, MD: JHU Press. doi: 10.1353/book.60680

Pace, B. A., and Devenot, N. (2021). Right-wing psychedelia: case studies in cultural plasticity and political pluripotency. *Front. Psychol.* 12:733185. doi: 10.3389/fpsyg.2021.733185

Pahnke, W. (1967). "LSD and religious experience," in *LSD, Man and Society,* eds R. DeBold and R. Leaf (Middletown, CT: Wesleyan University Press), 60–85.

Paul, L. A. (2014). *Transformative Experience*. Oxford: Oxford University Press. doi: 10.1093/acprof:oso/9780198717959.001.0001

Paul, L. A. (2015). What you can't expect when you're expecting. *Res Philosophica.* 92, 149–170.

Paul, L. A. (2019). Reply to symposiasts. *Riv. Int. Filos. Psicol.* 10, 357–367. doi: 10.4453/rifp.2019.0031

Paul, L. A., and Bloom, P. (2015). *How Should We Make the Most Important Decisions of Our Lives? A Philosophical Debate.* Slate. A Team of Superpowered Misfit. Retrieved at: https://slate.com/culture/2015/03/transformative-experience-by-l-a-paul-in-conversation-with-paul-bloom.html (accessed March 5, 2015).

Poppe, C. (2019). Procedural informed consent to psychoanalysis: The challenge from transformative experience. *J. Ethics Ment. Health Open.* 10, 1–11.

Preller, K. H., and Vollenweider, F. X. (2018). "Phenomenology, structure, and dynamic of psychedelic states," in *Behavioral Neurobiology of Psychedelic Drugs*. p. 221–256.

Pugh, J. (2020). *Autonomy, Rationality, and Contemporary Bioethics*. Oxford: Oxford University Press. doi: 10.1093/oso/9780198858584.001.0001

Rogers, B. R., and Johnson, L. M. (2021). Informed consent conversations: neither the beginning nor the end. *Am. J. Bioeth.* 21, 76–78. doi: 10.1080/15265161.2021.1907481

Ross, S., Bossis, A., Guss, J., Agin-Liebes, G., Malone, T., Cohen, B., et al. (2016). Rapid and sustained symptom reduction following psilocybin treatment for anxiety and depression in patients with life-threatening cancer: a randomized controlled trial. *J. Psychopharmacol.* 30, 1165–1180. doi: 10.1177/0269881116675512

Rucker, J. J., and Young, A. H. (2021). Psilocybin: from serendipity to credibility?. *Front. Psychiatr.* 12, 659044.

Saks, E. R., and Golshan, S. (2013). *Informed Consent to Psychoanalysis: The Law, The Theory, and The Data*. Fordham University Press.

Schenberg, E. E. (2021). Who is blind in psychedelic research? Letter to the editor regarding: blinding and expectancy confounds in psychedelic randomized controlled trials. *Expert Rev. Clin. Pharmacol.* 14, 1317–1319. doi: 10.1080/17512433.2021.1951473

Schmid, Y., and Liechti, M. E. (2018). Long-lasting subjective effects of LSD in normal subjects. *Psychopharmacology* 235, 535–545. doi: 10.1007/s00213-017-4733-3

Sebo, J., and Paul, L. (2019). "Effective altruism and transformative experience," in *Effective Altruism: Philosophical Issues*, eds H. Greaves and T. Plummer (Oxford: Oxford University Press), 1–9. doi: 10.1093/oso/9780198841364.003.0004

Shlobin, N. A., Kolcun, J. P. G., Leland, B. D., and Ackerman, L. L. (2022). Disability or death: a focused review of informed consent in pediatric neurosurgery. *Seminars in Pediatric Neurology* 45:101030. doi: 10.1016/j.spen.2022.101030

Smith, W. R., and Appelbaum, P. S. (2022). Novel ethical and policy issues in psychiatric uses of psychedelic substances. *Neuropharmacology* 2022:109165. doi: 10.1016/j.neuropharm.2022.109165

Smith, W. R., and Sisti, D. (2021). Ethics and ego dissolution: the case of psilocybin. *J. Med. Ethics* 47, 807–814. doi: 10.1136/medethics-2020-106070

Studerus, E., Gamma, A., Kometer, M., and Vollenweider, F. X. (2012). Prediction of psilocybin response in healthy volunteers. *PLoS ONE* 7:e30800. doi: 10.1371/journal.pone.0030800

Studerus, E., Gamma, A., and Vollenweider, F. X. (2010). Psychometric evaluation of the altered states of consciousness rating scale (OAV). *PLoS ONE* 5:e12412. doi: 10.1371/journal.pone.0012412

Studerus, E., Kometer, M., Hasler, F., and Vollenweider, F. X. (2011). Acute, subacute and long-term subjective effects of psilocybin in healthy humans: a pooled analysis of experimental studies. *J. Psychopharmacol.* 25, 1434–1452. doi: 10.1177/0269881110382466

Swift, T. C., Belser, A. B., Agin-Liebes, G., Devenot, N., Terrana, S., Friedman, H. L., et al. (2017). Cancer at the dinner table: experiences of psilocybin-assisted psychotherapy for the treatment of cancer-related distress. *J. Humanistic Psychol.* 57, 488–519.

Taylor, J. S. (ed.). (2005). *Personal Autonomy: New Essays on Personal Autonomy and Its Role in Contemporary Moral Philosophy*. Cambridge University Press. doi: 10.1017/CBO9780511614194

Taylor, J. S. (2010). *Practical Autonomy and Bioethics*. New York, NY: Routledge. doi: 10.4324/9780203873991

Timmermann, C., Kettner, H., Letheby, C., Roseman, L., Rosas, F. E., and Carhart-Harris, R. L. (2021). Psychedelics alter metaphysical beliefs. *Sci. Rep.* 11, 1–13. doi: 10.1038/s41598-021-01209-2

Timmermann, C., Watts, R., and Dupuis, D. (2020). Towards psychedelic apprenticeship: developing a gentle touch for the mediation and validation of psychedelic-induced insights and revelations. *Transcult. Psychiatry*. 59, 691–704. doi: 10.31234/osf.io/j5768

Vojta, L. R., and Brown, J. E. (2015). "Informed consent," in *Ethical Dilemmas in Emergency Medicine*, eds C. Marco and R. Schears (Cambridge University Press). doi: 10.1017/CBO9781139941709.008

Walsh, Z., and Thiessen, M. S. (2018). Psychedelics and the new behaviourism: considering the integration of third-wave behaviour therapies with psychedelic-assisted therapy. *Int. Rev. Psychiatry* 30, 343–349. doi: 10.1080/09540261.2018.1474088

Watts, R., Day, C., Krzanowski, J., Nutt, D., and Carhart-Harris, R. (2017). Patients' accounts of increased "connectedness" and "acceptance" after psilocybin for treatment-resistant depression. *J. Hum. Psychol.* 57, 520–564. doi: 10.1177/0022167817709585

Wise, E. H. (2007). Informed consent: complexities and meanings. *Prof. Psychol.* 38, 182–183.

Woollard, F. (2021). Mother knows best: pregnancy, applied ethics, and Epistemically transformative experiences. *J. Appl. Philos.* 38, 155–171. doi: 10.1111/japp.12464

Wrigley, A. J. (2018). "Consent for others," in *The Routledge Handbook of the Ethics of Consent*, eds A. Müller and P. Schaber (New York, NY: Routledge), 322–333. doi: 10.4324/9781351028264-29

Yaden, D. B., Potash, J. B., and Griffiths, R. R. (2022). Preparing for the bursting of the psychedelic hype bubble. *JAMA Psychiatry* 79, 943–944. doi: 10.1001/jamapsychiatry.2022.2546

Zelner, B. (2020). The pollination approach to delivering psychedelic-assisted mental healthcare. *MAPS Bulletin Spring* 30, 34–37.

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Psychedelic literary studies and the poetics of disruption

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psychedelic literature, poetry, poetics, consciousness studies, nonduality, William Blake, Aldous Huxley, Alan Watts

Literary studies has seen a recent explosion of interest in several fields that overlap with psychedelic studies. One is "cognitive literary studies," which relates developments in neuroscience and psychology to the interpretation of literary texts. Others include the medical or health humanities and its subfield, narrative medicine, which explore the importance of storytelling and sense-making for the wellbeing of individuals and their communities. Despite sharing these similar methodologies and theoretical interests, literary studies remains underrepresented in the field of psychedelic studies and its associated conferences and publications. Regardless of this latency—which has no doubt been influenced by underfunding and deprioritization of the study of literature more generally—poetics are crucial to mapping the phenomenology of psychedelic experiences, and a proliferation of literary experiments could offer new ways of communicating the ineffable.

A key reason for this neglect is that research in the sciences and social sciences commonly assumes ontological positions that are fundamentally incompatible with psychedelic states as subjectively experienced. These positions include the commitment to materialism (reality is entirely reducible to a material substrate), physicalism (everything that exists is physical and dependent on mechanistic, natural laws) and scientism (the hard sciences provide the only genuine knowledge about reality). Even when studying the phenomena of conscious experience, many researchers presuppose that matter at the subatomic level constitutes the ground of reality and exists independently of human consciousness, that time and space as the necessary conditions of experience exist independently of the mind, and that consciousness is ultimately reducible to the material structure and processes of the brain. Guided by these widespread and closely-held assumptions, science dedicates itself to understanding the behavior of the material world—a world of matter and energy situated within time and space that unfolds according to established causal principles—while the social sciences commonly explore human behavior within the ontological framework created by these assumptions. Consequently, the discursive practices used by scientific and social scientific disciplines prioritize denotative language that suits the methods of empirical observation, mathematical logic, and the imperative for objectivity.

As Alan Watts explores in *The Joyous Cosmology*, the English language emphasizes "contrast and classification" in its denotative uses, which subtly reinforces the notion that reality is reducible to singular, isolated, material parts (Watts, 2013, p. 50). Although this view of reality often seems inevitable and intuitive in ordinary states of consciousness, psychedelic experiences frequently catapult even staunch materialists into a perspective where reality is seen as a dynamic play of eternal energy wherein the usual categories of opposition—self/other, subject/object, mind/matter—dissolve into awareness of interrelated unity. Given the persuasiveness and frequency of these sorts of experiences under the influence of psychedelics, it is unsurprising that a recent paper correlates psychedelic use with shifts away from "hard materialist" metaphysical beliefs (Timmermann et al., 2021). These experiences are thus ill-suited to the conventions of denotative language. To the extent

that they are susceptible to description, they require highly figurative, connotative language rich in metaphor and symbolic meaning, which is the domain of poetry and other verbal, pictorial, and musical arts.

The most successful literary and artistic renderings of psychedelic states work not by providing reductive testimonies, but rather by disrupting our habitual patterns of cognition with an aesthetic that *enacts* the very experience it represents. Within psychedelic culture, the works of William Blake (1757–1827) include paradigmatic examples of literary art that seeks to transform consciousness by wrenching it from the lethargy of custom. Blake's expertise in rendering this poetics of disruption explains the deep impression he left—following Aldous Huxley's *The Doors of Perception*, which draws its title from Blake—on Beat Generation poets as well as writers, musicians, and artists of the 1960s psychedelic counterculture. Although present-day psychedelic researchers still allude to William Blake as a reference for describing psychedelic effects (Nutt, 2021), few scholars within the contemporary research revival have investigated the reasons for Blake's artistic and literary appeal within psychedelia (for an early exception, see Boon, 2002).

Although Blake knew nothing of psychedelics, his artistic vision was rooted in an anti-materialist conviction that "Mental Things are alone Real[;] what is Call[e]d Corporeal Nobody Knows of its Dwelling Place[; it] is in Fallacy & its Existence an Imposture" (Blake, 1997, p. 565). In its alignment with the premise of metaphysical idealism—i.e., that reality is grounded in mind, not in matter—Blake's claim is congruent with recurring components of psychedelic phenomenology, wherein the material world is commonly seen to be the manifestation of mind rather than its cause. Blake's art thus attempts to draw its readers into a reality as foreign to the materialist zeitgeist of his times as the psychedelic explorer's experience is to the scientific norms of ours—a reality experienced as infinite consciousness unfolding in boundless modes of expression. His term for this engine of expression is "Poetic Genius," which draws upon *poiesis* (Greek for "a making") and the Latin *genero* (to beget, produce). For Blake, "the Poetic Genius is the true Man, and . . . the body or outward form of Man is derived from the Poetic Genius" (Blake, 1997, p. 1). Consequently, when Blake writes that his literary art intends to "rouse the faculties to act," his aim is to awaken the Poetic Genius in his readers so that they may become aware that their perceptions are actively creative rather than passive representations of sensory data emitted from a world of supposedly material objects independent of consciousness. Thus the creative imagination, regarded with suspicion by Enlightenment rationalists for producing pleasing but meaningless chimeras, is for Blake the activity of the individual mind participating in the generative processes of universal consciousness that render the natural world: "But to the Eyes of the Man of Imagination Nature is Imagination itself. As a Man is So he Sees" (Blake, 1997, p. 702).

To achieve this transformation of awareness in his readers, Blake employs what W. J. T. Mitchell terms a "composite art," with an aesthetic that hovers in the ambiguous interplay between its verbal and visual elements (Mitchell, 2019). The verbal elements present a world of *process* whose only principle of permanence resides in the creative imagination that drives the process, while the illustrations—which reject literal representation for suggestive symbolism—underscore the complete degree to which the visual world behaves according to the activities of Poetic Genius, whether in its transpersonal or individual expression. The composite effect thus aims to disrupt the culturally entrenched belief in the primacy of the material world by drawing our awareness to the processes by which consciousness—acting through the Poetic Genius of individuals as localizations of what Huxley calls "Mind at Large" (Huxley, 2009, pp. 22–24)—constitutes the ground of reality itself. It is important to note that this perspectival shift does not depend on any predetermined ontological commitments from the reader/experiencer; rather, psychedelics and psychedelic poetics alike provide an impetus by which one can experience the world beyond the hegemonic and routinized confines of materialist assumptions.

Plate 14 from *The Marriage of Heaven and Hell* (1790) serves as a case study on Blake's approach to shifting reality frames through a poetics of disruption. Its famous line—"If the doors of perception were cleansed everything would appear to man as it is: infinite," which inspired both the title of Huxley's *The Doors of Perception* and the name of the psychedelic rock band "The Doors"—exemplifies the aim of his artistic enterprise to disrupt our habitual cognitive filters so that we may better understand our *a priori* identity in consciousness (Blake, 1997, p. 39). An illustration sits at the top of the plate depicting a human figure with arms outstretched who appears to be flying directly at the reader. This figure hovers over and is partly immersed in flames that separate it from a stiffly prone, corpse-like human figure lying at right angles to the orientation of its airborne opposite. Beneath the illustration, the speaker declares: "The ancient tradition that the world will be consumed in fire at the end of 6000 years is true, as I have heard from Hell" (Blake, 1997, p. 39). Rather than suggesting sympathy with "Hell" as traditionally conceived, other plates treat flames as the element of transformation, and thus as a symbol of creative imagination. This symbolism informs the reader's interpretation of the speaker's proclamation: "For the cherub with his flaming sword is hereby commanded to leave his guard at the tree of life, and when he does, the whole creation will appear infinite and holy, whereas it now appears finite and corrupt" (Blake, 1997, p. 39). This proclamation implies that the foretold Biblical apocalypse is to be understood as an epiphany—ever available to the Poetic Genius—that the world is not susceptible to destruction, for it is not ultimately material in nature. Rather, for Blake, the ontological basis of the world *is* mind, and the mind is not bound by the limits of time and space, nor by the laws of causality that govern the world of material appearance.

Blake does not attempt to communicate this disruptive perspective through logical reasoning rendered in denotative language. Instead, such revelation comes about by "an improvement of sensual enjoyment" through the aesthetic of this very plate, which enacts the transformation it describes. This transformation invites readers to expunge "the notion that man has a body distinct from his soul," and realize that all bodies—indeed, all material appearances—are the playful activities of mind projected through the senses (Blake, 1997, p. 39). The speaker then describes how they will bring about this shift in perspective—"by

printing in the infernal method, by corrosives, which in Hell [i.e., the domain of fire as creative energy] are salutary and medicinal, melting apparent surfaces away and displaying the infinite which was hid" (Blake, 1997, p. 39). The speaker here refers to Blake's method of relief printing, which reveals inherent form through a process of eliminating the dross that obscures it. The plate thus anticipates Marshall McLuhan's assertion that "the medium is the message," since its use of acidic corrosives in the "cleansing" process allows the plate's verbal and visual images to emerge from their bondage within the blank copper plate (McLuhan, 1994, p. 7). The images revealed through this process encourage readers to perform a similar act of liberation—one that melts away the static dualisms of picture/verse, body/mind, self/other, space/time to reveal consciousness as dynamically creative, infinite, and eternal. By dissolving these boundaries, Blake's creative works enact the kind of paradigm shift away from entrenched beliefs that is commonly attributed to psychedelics.

The therapeutic effects of psychedelics are similarly associated with their ability to change one's self-understanding by clearing attachments, assumptions, and limiting habits of mind. Using Blake's artistry as an example, we propose that psychedelic literary studies can contribute to psychedelic studies in several key ways. To the extent that psychedelics are regarded as "experiential medicines," creative writers—whose trade is in the adept use of figurative language—are well-positioned to enact such transformative (and potentially therapeutic) experiences in their readers. These poetic strategies provide insight into the processes by which psychedelics disrupt conventional frameworks and suggest new experiential paradigms. Psychedelic users (including Huxley) have recounted how ideas that previously seemed preposterous or nonsensical suddenly became meaningful and coherent in a state of heightened affect and aesthetic sensitivity (Huxley, 2009, pp. 18–19). By replicating the feelings associated with such experiences, poetry as a technology can convey psychedelic perspectives in a manner that exceeds the capabilities of scientific discourse and method.

Blake's liberatory aesthetic thus offers a paradigmatic example of the ways in which literary studies specifically, and the arts more generally, can invite readers into modes of experience that challenge our standard conceptual frameworks for understanding ourselves and the world. Even when attempted renderings of psychedelic states are incomplete or imperfect, each new metaphor potentially functions as a useful tool for navigating and communicating future experiences, as Richard Doyle suggests in *Darwin's Pharmacy* (Doyle, 2011). Since the poetic creation of metaphors and other types of figurative language shapes the contents and interpretations of psychedelic experiences, poetry has been foundational to our understanding of their nature. As a result, poetry will continue to influence the future of psychedelic science, whether or not that influence is acknowledged or institutionally supported.

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References

Blake, W. (1997). *The Complete Poetry and Prose of William Blake* (ed D. V. Erdman). Garden City, NY: Anchor Books.

Boon, M. (2002). *The Road of Excess: A History of Writers on Drugs*. Cambridge, MA: Harvard University Press.

Doyle, R. (2011). *Darwin's Pharmacy: Sex, Plants, and the Evolution of the Noösphere*. Seattle, WA: University of Washington Press.

Huxley, A. (2009). *The Doors of Perception*. New York, NY: Harper Perennial.

McLuhan, M. (1994). *Understanding Media: The Extensions of Man*. Cambridge, MA: MIT Press.

Mitchell, W. J. T. (2019). *Blake's Composite Art: A Study of the Illuminated Poetry*. Princeton, NJ: Princeton University Press.

Nutt, D. (2021). *Developing the Current Status of Psychedelics in Psychiatry*. Berlin: Mind Foundation. Available online at: https://community.mind-foundation.org/posts/insight-2021-prof-dr-david-nutt-developing-the-current-status-of-psychedelics-in-psychiatry (accessed November 5, 2021).

Timmermann, C., Kettner, H., Letheby, C., Roseman, L., Rosas, F. E., and Carhart-Harris, R. L. (2021). Psychedelics alter metaphysical beliefs. *Sci. Rep.* 11, 22166. doi: 10.1038/s41598-021-01209-2

Watts, A. (2013). *The Joyous Cosmology: Adventures in the Chemistry of Consciousness*. 2nd ed. Novato, CA: New World Library.

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Psychedelic unselfing: self-transcendence and change of values in psychedelic experiences

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Psychedelic experiences have been shown to both facilitate (re)connection to one's values and change values, including enhancing aesthetic appreciation, promoting pro-environmental attitudes, and encouraging prosocial behavior. This article presents an empirically informed framework of philosophical psychology to understand how self-transcendence relates to psychedelic value changes. Most of the observed psychedelic value changes are toward the self-transcendent values of Schwartz's value theory. As psychedelics also reliably cause various self-transcendent experiences (STEs), a parsimonious hypothesis is that STEs change values toward self-transcendent values. I argue that STEs indeed can lead to value changes, and discuss the morally relevant process of self-transcendence through Iris Murdoch's concept of "unselfing". I argue that overt egocentric concerns easily bias one's valuations. Unselfing reduces egocentric attributions of salience and enhances non-egocentric attention to the world, widening one's perspective and shifting evaluation toward self-transcendent modes. Values are inherently tied to various evaluative contexts, and unselfing can attune the individual to evaluative contexts and accompanying values beyond the self. Understood this way, psychedelics can provide temporarily enhanced access to self-transcendent values and function as sources of aspiration and value change. However, contextual factors can complicate whether STEs lead to long-term changes in values. The framework is supported by various research strands establishing empirical and conceptual connections between long-term differences in egocentricity, STEs, and self-transcendent values. Furthermore, the link between unselfing and value changes is supported by phenomenological and theoretical analysis of psychedelic experiences, as well as empirical findings on their long-term effects. This article furthers understanding of psychedelic value changes and contributes to discussions on whether value changes are justified, whether they result from cultural context, and whether psychedelics could function as tools of moral neuroenhancement.

KEYWORDS

values, self-transcendence, psychedelics, unselfing, egocentricity, moral epistemology, salience, self

> Our states of consciousness differ in quality, our fantasies and reveries are not trivial and unimportant, they are profoundly connected with our energies and our ability to choose and act. If quality of consciousness matters, then anything which alters our consciousness in the direction of unselfishness, objectivity and realism is to be connected with virtue. (Murdoch, 2001, 84)

1. Introduction

This article aims to enrich our understanding of the value changes to which psychedelic experiences can lead. I argue that a significant reason for psychedelic value changes is self-transcendence—the reduction of egocentric ways of attributing salience and attention to the world around us—and the downstream effects. For example, in his autobiography, Albert Hofmann mentions meeting a young businessman:

> He thanked me for the creation of LSD, which had given his life another direction. He had been 100 percent a businessman, with a purely materialistic world view. LSD had opened his eyes to the spiritual aspect of life. Now he possessed a sense for art, literature, and philosophy and was deeply concerned with religious and metaphysical questions. (Hofmann, 1980, 93)

This provides *prima facie* evidence that psychedelic experiences sometimes radically change one's values. Not all value changes are radical: more commonly reported are moderate changes in various valuations and attitudes, or the ability to better (re)connect with pre-existing values (see Tables 1, 2).

No research has explicitly attempted to theoretically integrate and explain the value changes to which psychedelics can lead. To embark toward such integration, I review in Section 2, the literature on psychedelic value changes and argue that many such changes are changes toward self-transcendent values and are associated with various self-transcendent experiences (STEs).

In Section 3, I combine philosophical argumentation and empirical evidence to develop an explanatory framework for value changes in relation to a form of self-transcendence I call "unselfing" (Murdoch, 1997, 369). This framework gives a plausible explanation for why STEs might lead to self-transcendent values. My key philosophical claim is that selfhood and salience attributed to self are one central factor modulating how individuals intuit and grasp values. The central hypothesis is that overt egocentricity can easily bias valuations, reducing the importance of self-transcendent values. I claim that freeing of attention and salience from egocentric concerns enables an opportunity for perspectival and evaluative changes—opening our attention and concern to wider contexts, values, and frames of reference. Theorists in various disciplines converge on similar ideas, ranging from the philosophical psychology of Iris Murdoch, through the late developmental theories of Maslow and Kohlberg, to recent psychological work on "the quiet ego" and "hypo-egoic phenomena" (Leary and Guadagno, 2011; Wayment and Bauer, 2017).

In Section 4, I discuss psychedelic value changes in light of this framework and link them to psychological research and theoretical understanding of psychedelic experiences. Arguably, by reducing egocentric evaluative biases and increasing the attribution of attention and value outside the self, unselfing psychedelic experiences can connect and align us to the world and provide better epistemic access to self-transcendent viewpoints and values.

In Section 5, I discuss the implication of the framework. The proposed framework contributes to moral and epistemological discussions of psychedelics. Positing unselfing as a source of value change gives initial moral-epistemic justification for self-transcendent value changes (Lavazza, 2017; Langlitz et al., 2021), potentially legitimizing psychedelics as a societally valuable source of moral enhancement—a pharmacological means to improve humans' moral state (Earp et al., 2017; Earp, 2018).

An important caveat of this article is that self-transcendent value changes occur only in a subset of psychedelic experiences, presumably more likely in certain contexts or use patterns and conditioned by the pivotal influence of set and setting (i.e., personal and contextual factors), discussed further in Sections 3.9 and 4.4. Furthermore, self-transcendence is not the only factor contributing to psychedelic value changes (Pace and Devenot, 2021). Charting all factors and

TABLE 1 Definitions of central concepts.

Personal values (psychology)	Personal values refer to internalized cognitive structures that guide priorities and choices in life (Higgins, 2015; Oyserman, 2015)
Value (philosophy)	In philosophy, values are used to denote not only personal values, but also goods associated with various states of affairs, objects and contexts (i.e., beauty is a good associated with art, and justice as a good of the society). Philosophy is concerned with normative, epistemic and metaethical question concerning value, i.e., whether objects or state of affairs really are valuable, how this can be known and what values ontologically are (Tappolet and Rossi, 2015)
Salience	Salience refers to the importance (often automatically or subconsciously) attributed to various objects and aspects of experience, which makes certain objects or features stand out and be selected for attention (*cf.* Archer, 2022a,b)
Unselfing	Iris Murdoch coined concept 'unselfing' to refer to processes and experiences where salience attributed to self is reduced, and attention opens to the world and others (Murdoch, 2001)
Self-transcendence	The term 'self-transcendence' is used to refer both experiences and developmental processes of moving beyond one's immediate self-boundaries and egocentric perspective, as well as developmental stages, motivation, personality traits, worldview and value orientations which emerges as a result of this process (Garcia-Romeu, 2010, Kitson, 2020)
Self-transcendent experiences	Self-transcendent experiences (STEs) refer to experiences where salience attributed to self is reduced and felt connection to the world and others is enhanced (Yaden et al., 2017). Self-transcendent experiences encompass experiences ranging from states of flow, to peak-experiences, awe and mystical experiences
Self-transcendent values	In Schwartz et al. (2012) value theory, self-transcendent values are a class of culturally universal values, in orthogonal relation to self-enhancement values. They consist of the subcategories of benevolence (valuations concerning strivings toward benefit of members of one's ingroup) and universalism (strivings to benefit humanity, nature and other sentient beings in general).
Egocentricity (evaluative)	The degree to which salience and value are attributed to self, and the self is selected as the prominent context of evaluation, in contrast with other possible objects or evaluative contexts.

TABLE 2 Review of recent studies of values changes related to psychedelic use.

Value change	Is the change toward self-transcendent values?	Is the change conceptually associated with unselfing?	Studies	Type of study	Do authors link the changes to self-transcendent experiences?	How sustained changes were (i.e., when were last measurements conducted)?
Increased nature relatedness and/or increased appreciation of nature	Yes	Yes	Studerus et al. (2011)	Analysis of pooled data from eight double-blind studies in healthy volunteers	N/A	N/A
			Lyons and Carhart-Harris (2018)	Experimental study	In discussion connectedness is suggested as a possible mediating factor	Nature relatedness remained significantly increased 12 months post-dosing
			Kettner et al. (2019)	Prospective online survey	Changes were mediated by awe and ego-dissolutions	Nature relatedness was significantly increased 2 years after psychedelic experience
			Nour et al. (2017)	Survey	Ego-dissolutions mediated observed changes	N/A. Survey explored lifetime psychedelic use
			Forstmann and Sagioglou (2017)	Survey	Participants self-identification with nature predicted observed correlations, and authors suggest mediating effect of STEs	N/A. Survey explored lifetime psychedelic use
Increased pro-environmental behavior	Yes	Yes	Forstmann and Sagioglou (2017)	Survey	Participants self-identification with nature predicted observed correlations, and authors suggest mediating effect of STEs	N/A. Survey explored lifetime psychedelic use
Increased aesthetic appreciation of art and music	N/A (does not map to Schwartz theory)	Yes	Studerus et al. (2011)	Analysis of pooled data from eight double-blind studies in healthy volunteers	N/A	N/A
			Noorani et al. (2018)	Qualitative, interviews of therapy patients	Phenomenological reports suggest influence of STEs such as experiences of awe and interconnectedness	Interviews conducted 30 months after psychedelic experiences
			Masters and Houston (1966)	Qualitative, informal interviews and observational data from therapeutic practice	Phenomenological reports suggest influence of STEs	N/A
			Shanon (2002)	Qualitative, interviews of ayahuasca users and observational data	Phenomenological reports suggest influence of STEs	N/A
Increased altruism, prosocial behavior and/or concern for others	Yes	Yes	Griffiths et al. (2006)	Experimental study	Changes were mediated by mystical-type experiences	Changes were sustained 2 months after the experience
			Griffiths et al. (2008)	Experimental study	Changes were mediated by mystical-type experiences	Changes were sustained 14 months after the experience
			Griffiths et al. (2011)	Experimental study	Changes were mediated by mystical-type experiences	Changes were sustained 14 months after the experience
			Griffiths et al. (2018)	Experimental study	Changes were mediated by mystical-type experiences	Changes were sustained 6 months after the experience
			Noorani et al. (2018)	Qualitative, interviews of therapy patients	Phenomenological reports suggest influence of STEs such as experiences of awe and interconnectedness	Interviews conducted 30 months after psychedelic experiences
			Schmid and Liechti (2018)	Experimental study	Changes were correlated with mystical-type experiences	Altruistic/positive social effects and positive behavioral changes were significantly increased 12 months after the experience

(Continued)

TABLE 2 (Continued)

Value change	Is the change toward self-transcendent values?	Is the change conceptually associated with unselfing?	Studies	Type of study	Do authors link the changes to self-transcendent experiences?	How sustained changes were (i.e., when were last measurements conducted)?
Increased appreciation of spirituality	N/A (does not map to Schwartz theory)	Yes	Lerner and Lyvers (2006)	Survey	N/A	N/A. Survey explored lifetime psychedelic use
			Griffiths et al. (2018)	Experimental study	Changes were mediated by mystical-type experiences	Changes were sustained 6 months after the experience
Reduced valuation of financial success	Yes (by reducing self-enhancement value)	Yes	Lerner and Lyvers (2006)	Survey	N/A	N/A. Survey explored lifetime psychedelic use
More liberal and less authoritarian political views	No	No	Nour et al. (2017)	Survey	Ego-dissolutions mediated observed changes	N/A. Survey explored lifetime psychedelic use
Less authoritarian political views	No	No	Lyons and Carhart-Harris (2018)	Experimental study	In discussion connectedness is suggested as possible mediating factor	Authoritarianism remained decreased at trend level 12 month post-dosing
Reconnection to values	In some cases	In some cases	Belser et al. (2017)	Qualitative, interviews of therapy patients	Phenomenological reports suggest influence of STEs	N/A
Decreased specisism and increased animal solidarity	Yes	Yes	Pöllänen et al. (2022)	Survey	Ego-dissolutions were associated with decreased specisism, increased animal solidarity and increased desire to help animals	N/A. Survey explored lifetime psychedelic use

The table above reviews recent studies of value changes related to psychedelic use the author has been able to find (note that the same study can be listed in multiple categories). The table maps whether the value changes reported in the studies are changes toward (a) self-transcendent values (according to Schwartz et al., 2012, classification) and (b) conceptually associated with unselfing (defined as reduced salience attributed to self and increased attention and concern to the world and others). The table above also documents (1) the type of the studies, (2) whether STEs correlated with or mediated the value changes or if they were discussed by authors as potential causes, and (3) information regarding how sustained changes were.

mechanisms causing and modulating these changes, as well as the various types of value changes and their relation to self-transcendence, is an important future task. It should also be noted that this article uses "mechanism" in the general sense of "a natural or established process by which something takes place or is brought about" (Oxford English Dictionary), rather than as a strictly biological or neural concept (*cf.* van Elk and Yaden, 2022).

2. Review of psychedelic value changes and self-transcendent values

The concept of self-transcendent values is from Schwartz et al.'s (2012) value theory,[1] which classifies certain culturally universal values as self-transcendent. In this article, I loosely follow this usage, although self-transcendent values could be more broadly defined as personal values oriented beyond individual's gains and losses, implying an attribution of value outside the self for non-egocentric reasons. This broader definition of self-transcendent values includes the valuations associated with esthetics and spirituality.

As detailed in Table 2, recent empirical literature links psychedelics to long-term increases in:

(a) Appreciation of nature (Studerus et al., 2011), non-human animals (Pöllänen et al., 2022), nature relatedness (Nour et al., 2017; Lyons and Carhart-Harris, 2018; Kettner et al., 2019), and pro-environmental behavior (Forstmann and Sagioglou, 2017);
(b) Esthetic appreciation (Studerus et al., 2011; Noorani et al., 2018);
(c) Altruism and prosociality (Griffiths et al., 2006, 2008, 2018; Schmid and Liechti, 2018);
(d) Appreciation of spirituality (Griffiths et al., 2018);
(e) Reduced valuation of financial success (Lerner and Lyvers, 2006);
(f) More liberal and less authoritarian political views (Nour et al., 2017; Lyons and Carhart-Harris, 2018).

The link between self-transcendent values and psychedelics has not been proposed in the research literature, although it is suggested in Peck's (2020) recent popular article.[2] Overall, the above body of research supports the claim that psychedelic experiences can change values, valuations, and life priorities toward self-transcendent values:

1 Schwartz et al.'s (2012) value theory is an empirically based theory of culturally universal values. According to its various formulations, culturally universal values are grouped into either 10 or 19 core values forming a circumplex structure, where values are in orthogonal relation or inversely correlated to each other (i.e., scoring high on "A" values implies scoring low on "B" values). Self-transcendent and self-enhancement values are orthogonal categories in Schwartz's theory.

2 https://www.opendemocracy.net/en/oureconomy/psychedelics-systems-change-could-drugs-help-us-save-planet/ (Accessed 16.3.2023).

all of these studies except those concerning political orientation evidence change toward self-transcendent values.

Notably, these psychedelic changes of values often occur via the mediation of STEs. The connection between a particular value change and STEs (such as ego-dissolution, awe, or mystical experiences) is noted in many of these studies. Still, theoretical integration is lacking. To fill this research gap, I make the hypothesis that STEs and the long-term changes they induce provide a more general explanation for psychedelic value changes. Already, the same self-reducing mechanisms are considered central to the therapeutic and existential effects of psychedelics (Letheby, 2021, 197, 202; Letheby, 2022; van Elk and Yaden, 2022). Furthermore, there are plausible links among STEs, changes in many psychological variables induced by psychedelics, and self-transcendent values, explored in Section 4. The next section aims to philosophically articulate a way to understand this connection between self-transcendence and values.

3. Self, unselfing, and value change

3.1. Values and salience

There are various views on and approaches to values (e.g., Rokeach, 1973; Brosch and Sander, 2015; Oyserman, 2015; Hobbs, 2021). From a psychological viewpoint, values are abstract beliefs or cognitive structures that govern priorities and affective reactions and guide goals and choices (Oyserman, 2015; Schwartz, 2015). Values are part of the overall process of how a person situates and orients himself in the world, together with higher-order aspects of cognition such as worldview (Koltko-Rivera, 2004) and lower-level evaluations such as experiential valence, salience, and affective processes (Archer, 2022a,b; Varela et al., 1993).

In contrast to values, salience can be defined as what is experienced as important in the present moment (Watzl, 2022; Whiteley, 2022; Archer, 2022a,b). In our immediate experience, we find certain things or properties important while ignoring others. What is salient is a complex result of various contextual factors, unconscious processes, and the deliberate use of attention; it also changes spontaneously and fluidly between different moments and framings.

There are multiple connections between values and salience. Attribution of value occurs to a large extent as non-inferential and automatic attribution of salience guiding action and perception. Also, what is salient at any given moment modulates which values are activated. Conversely, our abstract values modulate how we attribute salience and attention. For example, Archer (2022a,b) argues that salience should be conceived in a complex dynamic relation to our evaluative worldview—various abstract "standing judgments" and values that affect salience through their context-dependent application and realization in particular situations.

3.2. The evaluative self

The notion of "self" is notoriously complex to define, causing much conceptual and theoretical confusion (Leary and Tangney, 2012). Here, I focus on an ordinary, basic sense of self: identification with and/or sense of ownership of a body and personhood, leading to perceiving oneself as a distinct and enduring entity separate from other entities in the world (Albahari, 2006).

A crucial evaluative function the self enables is the filtering of sensory data according to its importance. The machinery of selfhood in many ways constricts and dictates what is tagged as salient and worthy of attention (Letheby and Gerrans, 2017, 4). Cognitively and neurally, self-relevance influences many disparate processes: we pay more attention to stimuli that are self-related (Millière, 2017, 10–13; Sui and Humphreys, 2015). The world is a complex, chaotic place, and humans must narrow their perception to patterns relevant to survival. Constructing a self, or *selfing*, is intimately related to these utilitarian, evolutionary pressures to seek and avoid various things in the world (Huxley, 1954; Letheby and Gerrans, 2017).

I use egocentric salience to describe salience filtered through egocentric evaluative biases, resulting from identification and investment in personal self and its goals (Albahari, 2006, 60). This whole machinery of selfhood and associated egocentric salience creates an egocentric frame of reference into our experience, guiding the direction of attention and what features are considered salient (Letheby and Gerrans, 2017, 4).

Egocentric salience is related to both narrative and embodied aspects of self, and functions as a bridge between these aspects of selfhood (Letheby and Gerrans, 2017, 3; Millière et al., 2018). Narrative self adds whole layers of identity on top of the embodied self, affording the ability via thought and imagination to fix attention to past or future events relevant to the self and symbolically extend self (for example, by identifying with one's possessions and opinions).

Noting the possibility to conflate various meanings of egocentric used in the literature, I refer here exclusively to attributions of salience.[3] Similarly, egocentricity and egocentric salience in the present context should not be conflated with egoism: egocentric salience does not imply that one is egoistic in morally problematic ways. I reserve the term egoistic for extreme, morally problematic forms of egocentricity such as narcissism and the inability to care for others, assuming that most of our everyday experiences are egocentric to a morally acceptable degree. Another potential confusion is that, in some sense, all personal goals are egocentric as they are tied to self: for example, Wiese (2019) explores the idea that selfhood is constructed through the integration of salience attributed to various goals. Ego-structures can, adaptively and functionally, assimilate and serve self-transcendent goals and values—ego optimally facilitates our connection to the world. I mostly use egocentric in a narrower sense: denoting concerns serving and related to oneself, associated with mundane concerns with oneself, and the self-enhancement values (Schwartz, 2012).

3 Egocentricity and selflessness can have various connotations (Millière, 2020). Egocentricity is often contrasted with the capacity for taking on others' perspectives (e.g., Bukowski et al., 2022). The egocentric attributions of salience do not concern solely the capacity for perspective-taking. A person with high perspective-taking ability might still be egocentric, for example, when narcissistically taking another's perspective to manipulate them. Sometimes egocentricity is used to describe certain perceptual modes, as distinction between egocentric versus allocentric modes of visual perception (Fiehler et al., 2014; Letheby and Gerrans, 2017, footnote 3). This phenomenon is related to salience attribution in perceptual processes. However, I use a broader meaning of egocentricity.

3.3. Overt egocentricity as a falsifying veil

The capacity for egocentric attribution of salience is hugely adaptive—egocentric pursuits are a necessary part of human life. Still, for both existential and moral reasons, the degree of egocentricity matters. Humans are prone to situations where the salience attributed to self grows disproportionately strong, occluding wider concerns and values from our perspective. The philosopher Iris Murdoch beautifully thematizes how egocentric tendencies can limit our perspective:

> By opening our eyes we do not necessarily see what confronts us. We are anxiety-ridden animals. Our minds are continually active, fabricating an anxious, usually self-preoccupied, often falsifying veil which partially conceals our world. (Murdoch, 2001, 84)

I interpret that this "falsifying veil" denotes a cognition in which excessive value and focus are placed on egocentric ways of perceiving. Instead of enabling our connection to the world, the self sometimes works like an over-active filter, blocking from our vision everything other than egocentric pursuits. Murdoch referred to strongly egocentric forms of cognition as "fantasy," entailing "the proliferation of blinding self-centered aims and images" that reduce everything to the false unity of self (Murdoch, 1997, 354). Murdoch regarded this tendency to value only things connected to our concerns and with utility for the self as a central obstacle to directing our attention and imagination to the world (Denham, 2001, 624). In this sense, Murdoch claimed that the self is a place of illusion (2001, 93), entailing a possibility of a vicious self-reinforcing feedback loop between egocentric salience and sense of reified selfhood.

Murdoch is not alone in contending that egocentric motivations are often so strong as to limit our interests, scope of caring, and motivations for non-egocentric pursuits (Murdoch, 2001, 99). For example, Maslow (1971, 249–255), Fromm (1976), Schopenhauer (1818; see Denham, 2001, 623–624), and Buddhist traditions (Albahari, 2006, 24–27, 164; Burbea, 2014) all recognize this link between overt egocentricity and certain existentially and morally limiting modes of orienting, acting, and being in the world.

There are many common situations in which overt egocentricity occurs. States of suffering and stress tend to make people egocentric, while overt egocentricity can itself cause suffering, creating a feedback loop reinforcing disconnection to non-egocentric values (Leary and Guadagno, 2011, 139–40; Vervaeke et al., 2017). Karen Horney (1999 [1950]) suggested that neuroses always make one egocentric. For example, extreme rumination and associated inertia can make one self-centered to a dysfunctional degree. Similarly, addictive desires might divert extensive motivation away from other aims of greater importance (Vervaeke and Ferraro, 2013). Even highly functioning individuals can be drawn into the overtly egocentric pursuit of pleasure, fame, wealth, and power; extremely so in personality features dubbed "the dark triad" (Furnham et al., 2011).

3.4. Unselfing

Given these relatively strong forms of egocentric tendencies, it is easy to understand why unraveling the overt attribution of self-saliency is beneficial. I adopt Murdoch's term "unselfing" to stress both the existential and moral importance of reducing egocentric salience. Unselfing points to moments and processes where our attention opens and we break our psychological isolation from the world around us (Murdoch, 1992, 17; Driver, 2020, 169–170). Considering previous sections, we can interpret unselfing as a reduction in egocentric salience and a concomitant increase in our capacity and willingness to become concerned with what is non-self. For example:

> The most obvious thing in our surroundings which is an occasion for 'unselfing' is what is popularly called beauty […] I am looking out of my window in an anxious and resentful state of mind, oblivious of my surroundings, brooding perhaps on some damage done to my prestige. Then suddenly I observe a hovering kestrel. In a moment everything is altered. The brooding self with its hurt vanity has disappeared. There is nothing now but kestrel. And when I return to thinking of the other matter it seems less important. (Murdoch, 2001, 84)

The beauty of the kestrel is a value perceived in the outside world and occasions a shift to a less egocentric mode of attention. Unselfing can occur in various ways, encompassing appreciation of nature, art, contemplative practices, and intellectual disciplines—basically anything that involves non-egocentric attention to reality and recognition of value(s) lying outside the self (Murdoch, 2001, 84–86, 90–91; Denham, 2001, 624).

For Murdoch, at the core of unselfing is loving attention, a term she borrows from Simone Weil and describes as "a just and loving gaze directed upon an individual reality" (1997, 327). She elaborates thus:

> It is in the capacity to love, that is to see, that the liberation of the soul from fantasy consists. […] What I have called fantasy […] is itself a powerful system of energy […] What counteracts the system is attention to reality inspired by, consisting of, love. (Murdoch, 1997, 354)

Murdoch regards loving attention (and associated non-egocentric imagination) as a movement outward from the self, enabling progress toward a more accurate perception of the world (Panizza, 2019, 3–4, 15; Chappell, 2018; Driver, 2020). Loving attention—especially when combined with honest self-criticism—counteracts our egocentric fantasies and allows for overcoming our biased perspectives and those "convincingly coherent but false pictures of the world" that we so easily build (Murdoch, 1997, 329; see also Driver, 2020, 174–175).

For Murdoch, progress and virtue necessarily require the ability to see through egocentric structures of valuation, as this is the only way to truly understand what goodness is (Murdoch, 2001, 103; Mole, 2022). Loving (i.e., disinterested and non-egocentric) attention leads to moral progress by changing our perspective, which is the root of our reasoning and actions (Olsson, 2018, 168–169; Driver, 2020, 173–174). Only by opening our attention to the surrounding world, can we transcend our limited views, conceptions, and sensibilities, and learn to appreciate and respect that which is not ourselves, for example, by understanding an artistic work or another person more deeply. Through self-correction and learning enabled by the use of loving (or non-egocentric), one can refine one's evaluations and moral concepts and conceptions, which largely dictate how one concretely understands good and other abstract values (Murdoch, 1992, 325; Murdoch, 1997, 307, 313, 317–323). Wright (2005) denotes this process as "sensibility transcendence." Thus, transcending the

falsifying veil of self-absorbed fantasy is valuable for both moral and epistemic reasons (Denham, 2001; Murdoch, 2001, 84, 93, 97; Panizza, 2019).

3.5. Converging constructs

In psychological research, phenomena similar to unselfing have been approached through various constructs such as "hypo-egoic states" (Leary and Guadagno, 2011), "self-transcendent experiences" (Yaden et al., 2017), and "peak-experiences" (Maslow, 1970, 1971). All these are umbrella concepts denoting a variety of experiences that share a common core of (1) reduced self-awareness (or reflection about oneself), (2) reduced ego-involvement and egocentric salience, and (3) altered self-boundaries and sense of increased connection or interconnectedness to the world. I suggest that the phenomena discussed under these concepts almost always involve unselfing, i.e., directing attention and evaluation away from the self and egocentric concerns.

These constructs converge on the idea that our states vary according to the level of egocentricity, and that loosening egocentricity leads to shifts in our perspective on or position in relation to the world. In these experiences, the center of evaluation called "self" dissolves to various degrees, and the way we evaluate and pay attention alters. Becoming less entangled in and fixated by our egocentric biases, concerns, and wants, we can see the world from a wider perspective and our attention is more available and disinterested (Maslow, 1970, 78; Albahari, 2006, 51–74). In these kinds of states, the self might be conceived as more interconnected and relational and be more permeable to the world and others (Piff et al., 2015; Hanley et al., 2017; Yaden et al., 2017).

3.6. Unselfing and value change

I claim that these perspectival changes associated with unselfing can lead to changes in values. In general, values are perspectival. Which of our values are "active"—i.e., guiding our behavior and goal-framing—in any given moment is context-dependent, influenced by various conditions and factors (Schwartz, 2012; Schwartz et al., 2012; Oyserman, 2015). One key factor is what appears salient in the individual's conscious experience at any given moment. In turn, what is salient depends largely on the given context of evaluation. For example, an evaluation centered on one's economic prosperity will arouse different values compared to one focused on the survival of humanity. Conversely, possessing certain values tends to make certain contexts of evaluation more salient: for instance, if I value nature, I tend to ponder economic activities and my personal choices from the viewpoint of their impacts on nature.

In this sense, our personal values emphasize and make salient certain contexts of evaluation and associated goods. The given evaluative context and values one grasps can be conceived as mutually arising aspects of the same evaluative activity. In this sense, values are tendencies to evaluate from particular perspectives—seeing certain evaluative contexts as salient enough to trump consideration of other contexts.

I propose that attributions of egocentric salience foreground the **self as an evaluative context**. When egocentric concerns are sufficiently salient, the associated egocentric framings and attributions of salience filter which values or goods are intuited or grasped, nudging evaluation toward self-enhancement. The salience biases created by egocentric fantasies and goals thus instigate a structure of values that easily disconnects us from non-egocentric values. This line of thinking is also supported by and could be used to explain a central tenet of Schwartz et al.'s (2012) theory: the orthogonal relation between self-transcendent and self-enhancement values. Specifically, egocentric biases are either on or off, modulating whether our values center around the self or self-transcendent evaluative contexts.

I hypothesize that reducing egocentric salience and attention can lead to both momentary shifts and long-term changes in personal values by allowing a transition to a wider perspective, opening a person to values (or goods) beyond egocentric goals and considerations. Unselfing can be pictured as a continuum of progressively less egocentric ways of framing the relation between ourselves and our environment. Deconstruction of egocentric attributions of salience and attention allows contextualizing of the self to wider frames of reference and associated expansion in evaluative perspective and values. These perspectival changes are reflected in various modalities such as the cognitive processes of thinking and imagination, in our perceptual or experiential salience, and in our behavior.

I argue that this perspectival widening through unselfing drives a shift toward relatively more intrinsic and self-transcendent modes of attributing value, thus helping one to grasp non-egocentric values. Unselfing can allow for value-instigating experiences and perspectives, or activate existing self-transcendent values. Consequently, experiential salience might become more tuned with the values connected to goods of wider spatial, temporal, or social contexts, thereby expanding our scope of care and concern.

Perspective can open to the **immediate present-moment context** surrounding us and to its non-instrumental value(s). When one is more present, the narrative structures of selfhood required for instrumental goals operate less strongly. When less entangled in our plans and past and future, and less anxious about our gains and losses, we can more readily perceive the intrinsic value of particulars, such as the value of objects of nature and art. Unselfing might thus lead to "non-egocentric respect for the particular" (Nagel, 1986, 222–223).

Furthermore, perspective can open to **allocentric contexts**—interpersonal and relational contexts spanning from consideration of loved ones and an ingroup to universal concern for other persons and humankind. Benevolence values in Schwartz et al.'s (2012) classification and prosocial values, in general, are associated with the recognition of these contexts as salient.

Finally, perspective can open to vast contexts setting the self as part of still wider frames of reference, such as nature or the cosmos at large. These could be termed **cosmocentric contexts** (*cf.* Maslow, 1970, 96). The idea that universal values are maximally accessible from a minimally egocentric perspective is already found in philosophy of Plato's (2008). Murdoch (2001, 101–103)—who was heavily influenced by Plato—claimed that goodness is connected with an attempt to see the unself, i.e., the movement toward a non-egocentric perspective. She elaborated thus:

> Goodness is connected with the acceptance of real death and real chance and real transience and only against the background of this acceptance, which is psychologically so difficult, can we understand the full extent of what virtue is like. The acceptance

> of death is an acceptance of our own nothingness which is an automatic spur to our concern with what is not ourselves. (Murdoch, 2001, 103)

Seeing clearly the vastness of the world and the ephemerality of our self very understandably alters valuations. The same thrust to acknowledge our mortality, see through our self-centered perspective, and marshal a shift in values and ways of living has arguably long motivated religious and spiritual traditions (Hadot, 1995, 2004; Leary and Guadagno, 2011, 143; Albahari, 2014; Pelser and Roberts, 2015; Thompson, 2020).

In Murdoch's thinking, unselfing is associated with the capacity to put things in the right perspective by recognizing various values in the world (Driver, 2020, 171). In this line of thinking, self-transcendence and unselfing could be understood as processes of honing our conceptions of what should and should not matter. Opening attention to various evaluative contexts and associated goods is a necessary antecedent for putting things in the right perspective and refining one's values. As Murdoch claimed, letting go of egocentrism occurs naturally when we grasp non-egocentric values (Driver, 2020). Unselfing might thus reduce the discrepancy between what we see as important given our egocentric biases and what is more important in a wider context, and enable one to form more encompassing values than self-enhancement values.

3.7. Support for the framework

Both empirical research and theoretical models support the notions that (1) there are substantial long-term and trait differences in egocentricity, (2) self-transcendent developmental stages are associated with self-transcendent values, and (3) momentary experiences of reduced egocentricity can contribute to self-transcendent values.

3.7.1. Trait differences in egocentricity

Various psychological constructs describe trait-level differences in egocentricity. Wayment and Bauer (2017) use "quiet ego" (contrasted with "noisy ego") to describe traits associated with compassionate self-identity and the ability to transcend egoistic concerns and adaptively balance the needs of others and self. Dambrun and Ricard (2011) draw a similar trait-level distinction between selflessness and self-centeredness. Maslow (1971, 241–255) associates self-transcendence with non-egocentric "being-cognition" and its corollary "being-motivation," and contrasted these with "deficiency-cognition" and "deficiency-motivation," involving orienting oneself to the world through unfulfilled egocentric needs. Fromm (1976) contrasts two fundamental evaluative orientations or existential modes: the non-egocentric "being mode" and the egocentric, goal-oriented, and alienated "having mode."

Many theories converge on the notion that expanding one's perspective to universal concerns is essential for achieving mature development of human cognition and morals (Loevinger and Blasi, 1976; Kegan, 1982; Gibbs, 2003), or explicitly link self-transcendence to these higher developmental stages (Maslow, 1971; Kohlberg and Ryncarz, 1990; Levenson et al., 2001). Similarly, the expansion of self–other boundaries is theoretically central to many notions of developmental self-transcendence (St. Arnaud, 2019). Researchers have linked wisdom with the ability to transcend one's narrow perspectives and self-interests and with the development of a non-egocentric perspective on life (Le and Levenson, 2005; Ardelt, 2008; Vervaeke and Ferraro, 2013; Aldwin et al., 2019).

3.7.2. Trait or developmental self-transcendence and self-transcendent values

Multiple authors explicitly connect trait differences in egocentricity to self-transcendent values. Wayment and Bauer (2017, 83) identified strong empirical correlations between quiet ego and (a) prosocial concerns, (b) compassionate goals, and (c) self-transcendent values of Schwartz's classification. Researchers have also developed measurements for Fromm's existential modes and observed a conceptual similarity between these and the value orientations of Schwartz's value theory (Cohen et al., 2005).

Furthermore, there are theoretical frameworks linking developmental self-transcendence to both STEs and value change. Maslow suggested that peak-experiences can lead to temporary states of "being-cognition," in which the world is perceived through a set of values and qualities he called "being-values" or "intrinsic values of Being" (B-values), such as the Platonic triad of goodness, beauty, and truth (Maslow, 1970, 64–65, 96; Maslow, 1971, 186, 286–328). For Maslow, B-values were biologically rooted, transculturally shared, and "cosmocentric"—not based on social or egoic concerns. A shift in perception to these B-values forms another kind of gestalt to organize the perceived world, "a change in attitude, valuing reality in a different way, seeing things from a new perspective, from a different centering point" (Maslow, 1970, 78). B-values describe reality and imply a normative aspect, giving direction on what should be pursued; their introjection into one's value structure results in non-egocentric "metamotivation" (Maslow, 1971, 286–328).

Similarly, in later formulations of moral development theory, Kohlberg and Ryncarz (1990) speculated about a (metaphorical) seventh "cosmic" stage of moral development, beyond the sixth stage of universalizable ethical thinking (Gibbs, 2003, 70–72). They saw that the existential crisis from confronting the "finitude of our individual self" could cause a gestalt shift in self-understanding, leading one to identify "with the cosmic or infinite perspective and value life from its standpoint" (Kohlberg and Ryncarz, 1990, 192–196). Kohlberg and Ryncarz (1990, 200–201) speculated that this shift occurs through a radical transcendence or decentering of the egocentric viewpoint, with significant normative implications such as finding harmony with and love of the cosmic order, and understanding that power and pleasure are not intrinsic ends of human life (Gibbs, 2003, 70–72). Converging with Maslow, Kohlberg, and Ryncarz (1990, 192, 206) saw that mystical experiences or "experience of nonegoistic or nondual variety" might be required for this kind of gestalt shift in moral understanding and valuations.

3.7.3. Self-transcendent experiences and self-transcendent values

Evidence from non-psychedelic research supports the association of STEs with self-transcendent values. Awe has been observed to cause increases in prosocial behavior and generosity (Piff et al., 2015). Near-death experiences, which often involve ego-dissolution, have been observed to result in less materialistic values and increased connection to nature (Greyson, 1983; Gandy, 2017; Barberia et al, 2018; Martial et al., 2021; Sweeney et al., 2022). Nature immersion has been observed to lead to not only pro-environmental behavior but also

generosity, prosocial values, and more intrinsic values in general (Weinstein et al., 2009; Zhang et al., 2014; Lumber et al., 2017; Kettner et al., 2019). Isham et al. (2022) argue that STEs can promote ecological wellbeing, a notion intrinsically associated with considering non-egocentric matters such as other beings and nature, and review evidence for STEs possessing a general tendency to enhance pro-environmental and self-transcendent values.

3.8. Normative issues

The argument above might evoke normative questions on what degree of egocentricity an individual should have. According to this argument, value changes associated with unselfing are normatively desirable: personal values should be informed by evaluative contexts surpassing the good of the individual ego. Various thinkers and traditions converge on the view that developing a wider or more encompassing perspective beyond narrow self-interest and aligning and connecting with goods beyond the self is both a moral requirement and integral to human development (Maslow, 1970, 1971; Nagel, 1986; Kohlberg and Ryncarz, 1990; Murdoch, 2001). If we admit that genuine improvement in one's evaluations results from self-transcendence, self-transcendence has to be normatively desirable.

Admittedly, the question of how much self-transcendence is required for human flourishing or morality is complex. The exact standards for the normatively required level of egocentricity depend on many substantial value-and worldview-laden questions such as metaethical stances, which cannot be fully explored in this article.[4] I certainly do not argue that we should always be in states of utter self-transcendence—egocentric values have a place in human life. Too much self-transcendence or exclusive "view from nowhere" might even be morally problematic as it completely abstracts away particular subjective viewpoints and concerns (Nagel, 1986). Relatively uncontroversially, I advocate unselfing to the extent required for balancing our egocentric interests with consideration of wider goods: this is normatively desirable and helps to refine one's values and conceptions of the good (Murdoch, 1992, 325; Murdoch, 1997, 307, 313, 317–323; Wright 2005; *cf.* Leary and Guadagno, 2011, 143–144).

3.9. Contextual factors and issues of long-term changes

The framework presented above supports the notion that unselfing can plausibly change individuals' values. Since the pioneering work of William James, the occurrence of rapid and sustained change in one's outlook, worldview, beliefs, and values from momentary experiences is well attested and discussed under various terms such as "quantum change" and "pivotal mental experiences" (Miller and C'de Baca, 2001; Koltko-Rivera, 2004; James, 2008; Brouwer and Carhart-Harris, 2021; Timmermann et al., 2021; Yaden and Newberg, 2022).

Notably, STEs do not always lead to value changes. There are three stages in the process of value change that I have described above: (1) reduction of egocentricity; (2) tuning into non-egocentric goods and contexts of evaluation, and (3) long-term changes as these perceived goods are introjected into one's motivational structure. It is likely that each of these steps creates a window of opportunity for the next one to take place, but does not necessarily lead to the next stage.

There are currently many unresolved questions concerning how and when momentary experiences lead to long-lasting changes, and which overall conditions and determinants are required. Multiple factors possibly affect the translation of STEs into self-transcendent values. Examples include:

(1) Psychological conditions and actions of the individual, such as intention and desire for self-transcendence, a sufficient developmental stage, personality factors, and efforts to prepare, integrate, and reflect on experiences (St. Arnaud and Sharpe, 2022);
(2) Prior predisposing values and worldview, enabling one to see self-transcendence and self-transcendent values as meaningful goals or aspirations, thus fostering the ability to interpret experiences in ways that support value change (Koltko-Rivera, 2004, 17; St. Arnaud, 2019);
(3) Availability of viable cultural frameworks for interpreting these experiences (*cf.* Koltko-Rivera, 2004, 14). Value transmission is heavily influenced by culture (Boer and Boehnke, 2015), and the effects of singular experiences cannot be disentangled from the wider cultural matrix of values in which the individual is embedded. How experiences and their implications are interpreted depends on a person's cultural surroundings and worldview, particularly because experiences are plausibly affected or even constructed in interaction with the cultural context and meaning-making systems (Katz, 1978; Hartogsohn, 2020; Dupuis, 2021; Dupuis and Veissiere, 2022);
(4) Engagement in practices and social contexts that support long-term cultivation of self-transcendent values after singular pivotal experiences. Historically, STEs have often been embedded in wider cultural traditions providing a matrix of supporting social conditions and an ecology of practices to facilitate change (Hadot, 1995; Hunt, 2013; Yaden et al., 2020).

In summary, deconstruction of evaluative machinery around the self, or even temporary tuning into wider evaluative contexts might not always be enough for sustained change in values. As many developmental theories recognize, value formation is a complex process. A full theoretical account of value change through STEs should consider relevant contextual factors such as the individual's developmental stage, the role of cultural context, and engagement in the long-term cultivation of self-transcendence.

4. Psychedelic unselfing and change of values

Letheby (2017, 2021, 196–204) claims that psychedelics' ability to induce unselfing is core to psychedelic therapy and spirituality.

4 Value realism is one possible metaethical stance to ground this article's arguments. Values as human universals (i.e., existing not in the fabric of cosmos but in our shared make-up) and cultural relativism are also congruent metaethical positions. However, nihilism, subjectivism, error-theory, and similar stances that deflate or deny the existence of objective or intersubjective values are probably not coherent with present framework (Kähönen, 2020, 72–76, 96–106).

Unselfing for Letheby denotes the deconstruction of the self-model (constructed sense of self) and the consequent liberation of attention from its constraints—breaking down the narrow walls of ego. As Letheby (2021, 220) explains:

> When phenomenal reality is filtered and structured less strongly through the goals and preferences of a reified, essentialised self, we can experience wonder, awe, broader perspectives, and feelings of profound kinship with the entirety of manifest existence.

Similarly, I suggest that psychedelics' ability to transform values and sensibilities is closely tied to reducing egocentricity and occasioning self-transcendent perspectives. I propose that by deconstructing egocentric salience psychedelic experiences can open our attention to the world and widen our evaluative context to encompass the immediate environment, the whole context of our personal life, our ingroup, and even broader social, ecological, and cosmological contexts (*cf.* Whitfield, 2021). By tuning into these non-egocentric contexts and evaluative modes, one gains better epistemic access to various self-transcendent values, which sometimes leave lasting imprints on personal values.

Next, I chart the changes toward self-transcendent values associated with psychedelic experiences, using categories from Schwartz et al.'s (2012, 669) value theory, supplemented by reconnection to values, esthetic and spiritual values, and then explore related theoretical issues.

4.1. Self-transcendent psychedelic value changes

4.1.1. Reconnection to values

In Belser et al.'s (2017) study, all 13 cancer patients who suffered from anxiety described "revised life priorities" as a major effect of psilocybin therapy:

> These participants came to **"remember" during their psilocybin session what to them was most important about life.** […] "We forget what's really important; we get carried away with work and making our money and paying our bills, and this is just not what life is about." Participants **were compelled to reorient their lives afterward** in a way that continued to connect them to a similar place. (p. 374, emphasis added)

These participants described shifts in their life priorities away from instrumental pursuits toward more fundamental objects of valuation, similar to the observation of reduced valuation of economic success by Lerner and Lyvers (2006). Swift et al. (2017, 24) observe that these same participants were pulled away from habitual patterns and overwhelm caused by cancer and "given an expanded perspective on what was felt to be most important and meaningful in life, which endured beyond the session," allowing patients to reconnect to life, their authentic selves, and the wider world beyond their sickness. As argued in Section 3.3, suffering tends to narrow the evaluative perspective—a sense of disconnection is associated with mental health issues (Carhart-Harris et al., 2018a)—but psychedelic experiences can reverse this trend, as illustrated by the case of a terminal cancer patient:

> It was less about my illness. I was able to put it into perspective. […] Not to see oneself with one's sickness as center. There are more important things in life. […] The evolution of human kind for example. […] Your Inner Ego gets diminished, I believe, and you are looking at the whole. (Gasser et al., 2015, 62)

These changes might plausibly be explained by a widening of the evaluative context to the full context of one's life and beyond as a result of reduced egocentric salience. As egocentric pursuits and worries likely become relatively less important, there is space for attunement with pre-existing core values from which one was disconnected—which often are self-transcendent values.

4.1.2. Esthetic values

Beauty is perhaps the most commonly grasped intrinsic value in psychedelic experiences. Examples abound of profound esthetic psychedelic experiences (Huxley, 1954, 4–6; Masters and Houston, 1966, 156–165; Shanon, 2002, 176). Such experiences sometimes lead to a sustained appreciation for art and the beauty of nature (Vaughan, 1983; Shanon, 2002, 176; Studerus et al., 2011; Noorani et al., 2018). Exploring the phenomenology of ayahuasca experiences, Shanon (2002, 176) claims that these experiences heighten the esthetic perception to the extent that "the ayahuasca experience is cardinally aesthetic." This fits with the above framework, as unselfing frees up attention and salience, allowing deeper attunement to the present sensory environment.

4.1.3. Benevolence values

Psychedelic unselfing can foster allocentric perspectival widening, opening our concern and care to interpersonal relations and social contexts in which we are embedded and leading to a better grasp of relational values and the intrinsic value of other persons. Experiences of relational embeddedness, social connectedness, identity fusion, and other relational processes are common in psychedelic experiences (Belser et al., 2017; Kettner et al., 2021; Newson et al., 2021; Roseman et al., 2021; Weiss et al., 2021). Moreover, experimental studies have observed increased prosociality and altruism (Griffiths et al., 2008, 2011, 2018; Noorani et al., 2018; Schmid and Liechti, 2018). These prosocial changes are likely associated with feelings of empathy and sentiments of love and compassion, all common self-transcendent emotions in psychedelic experiences (Shanon, 2002, 157, 164, 339; Pokorny et al., 2017; Watts et al., 2017, 535; Blatchford et al., 2020; Mulukom et al., 2020; Letheby, 2021, 202). These changes fit the category of "benevolence" in Schwartz's self-transcendent values, defined as devotion to ingroup members' welfare (although many of these changes overlap with more universal concerns).

4.1.4. Nature values

Psychedelic experiences can foster nature relatedness, appreciation of nature and non-human animals, and environment-friendly values (Studerus et al., 2011; Forstmann and Sagioglou, 2017; Nour et al., 2017; Watts et al., 2017; Kettner et al., 2019; Gandy et al., 2020; Pöllänen et al., 2022). These changes fit Schwartz et al. (2012) "universalism–nature" value category, defined as the preservation of the natural environment.

4.1.5. Universal concern

Schwartz et al. (2012) value category "universalism–concern"—encompassing commitment to equality, justice, and protection for all people—is probably enhanced by the increased prosocial attitudes

explored above. Moreover, psychedelic experiences often involve reflection on and imagination about moral and ethical issues and values. Watts et al. (2017, 534–535) report cases of moral deliberation in psilocybin experiences: one-third of 12 participants had insights into the ongoing refugee crisis, and some pondered climate change, and reported becoming concerned about global issues afterward. These processes of ethical reflection and imagination suggest reduced egocentric biases and a shift to more self-transcendent evaluative modes. As epitomized by one patient, "I got a wider perspective […] It helped me appreciate that the world is a big place, that there's a lot more going on than just the minor things […] in my head" (Watts et al., 2017, 534). Masters and Houston (1966, 255) cite an early study in which one-third of the 194 participants reported increased interest in ethics 10 months after an LSD session. Shanon (2002) observes that ayahuasca intoxication tends to affect values and is often experienced as a lesson in morals:

> Reflection about certain values and a sense of commitment towards them seems to be especially salient. Those reported by many individuals include personal responsibility, justice, and love. Also common is the appreciation of the significance of faith and hope, patience, and humility. Common is the appreciation that values—in particular, love and justice—are not confined to the province of human life but they also apply to existence at large and to the forces or beings that govern the universe. (p. 174)

Similarly, morally relevant themes can feature in psychedelic visions (Shanon, 2002, 173–175).

4.1.6. Humility

In Schwartz et al. (2012), humility is a universal self-transcendent value related to recognizing one's insignificance in the larger scheme of things. Notably, quiet ego and hypo-egoism are associated with the character trait of humility and putting the self in perspective (Leary and Guadagno, 2011; Wayment and Bauer, 2017), and Murdoch (1997, 99, 104) used humility as a prime example of non-egocentric virtue. Humility as both value and trait is integrally connected with reduced egocentricity and widened perspectives.

Shanon explicitly mentions humility as an important lesson of psychedelic experiences (2002, 159, 174). Many other features of psychedelic experiences—including awe (and associated "small self"), acceptance, gratitude, sense of connectedness and interconnectedness, spirituality, and relational embeddedness—are conceptually associated with humility (Shanon, 2002, 205; Hendricks et al., 2015; Belser et al., 2017, 16–17; Watts et al., 2017; Carhart-Harris et al., 2018b; Letheby, 2021, 197–204).

4.1.7. Spirituality and sacredness

Letheby (2021, 197–204) argues that psychedelic experiences foster spirituality by enhancing the ability to recognize one's place in the larger scheme of things, through developing broader perspectives and expanding attention beyond self-related concerns. Empirically, psychedelics are associated with an increased appreciation of spirituality (Lerner and Lyvers, 2006; Griffiths et al., 2018). A sense of sacredness and encounters with the sacred are common features of psychedelic experiences (Shanon, 2002, 156, 262; Griffiths et al., 2019; James et al., 2020). Furthermore, visionary and mystical experiences sometimes bring insights into values. These states are associated with *noesis*, a sense of gaining knowledge not mediated by reflective thought or sense perception. For example, Shanon (2002) reports an encounter with Supreme Good and a subsequent noetic insight into the unity of values, highly reminiscent of Platonic philosophy: "A major impression these visions had on me is the (Platonic) conclusion that ultimately, the ethical and the aesthetical as well as the true are the same" (p. 174). The similarity to Maslow's B-values should also be noted. Mystical experiences, God encounter experiences, and similar psychedelic states can plausibly acquaintance one with deep intrinsic values of existence such as transcendent values postulated by many religious traditions (Pelser and Roberts, 2015; Griffiths et al., 2019), signaling a shift to self-transcendent modes of valuation.

4.2. Factors affecting values during the psychedelic experiences

4.2.1. Self-transcendent experiences

Psychedelic experiences are a significant source of STEs (Yaden et al., 2017; Letheby, 2017, 2021; St. Arnaud, 2019; Isham et al., 2022). Psychedelics often induce various changes in the sense of self, ranging from experiences of connection to union experienced in mystical experiences (Millière, 2017; Millière et al., 2018; Letheby, 2021, 46–53; Nour and Carhart-Harris, 2017). The sensed boundary between self and the world might weaken, and one can experience empathy, affinity, blending, identification, and even unification with what is ordinarily other (Shanon, 2002, 205; Belser et al., 2017, 16–17; Yaden et al., 2017). Also commonly experienced are perceived interconnectedness; an increased sense of connectedness to oneself, nature, and the world; and states of *communitas* and social connectedness (Belser et al., 2017; Watts et al., 2017; Carhart-Harris et al., 2018a; Kettner et al., 2019; Blatchford et al., 2020; Forstmann et al., 2020; Kettner et al., 2021). Similarly, psychedelic experiences can bring enhanced meaningfulness of ordinarily uninteresting aspects of the world and enhanced present-centered attention, suggesting the release of salience from constraints of egocentricity (Huxley, 1954; Shanon, 2002, 61; Letheby, 2017; Letheby and Gerrans, 2017; Hartogsohn, 2018). Sense of awe, wonder, and the so-called overview effect are commonly reported expanded perspectives in psychedelic experiences (Shanon, 2002, 61–62; Yaden et al., 2016; Flanagan and Graham, 2017; Letheby, 2017, 637; Hendricks, 2018, 302–307).

4.2.2. Role of STEs in value changes

Various STEs are associated with psychedelic value changes in all but two of the studies outlined in Table 2. In seven of the 15 studies, STEs were either statistically mediated or were statistically associated with observed changes in values. A connection is also suggested in the phenomenological reports of four studies and the discussions of findings in two studies. This evidence indicates that the self-transcendent perspectives and expanded self–other boundaries associated with STEs are likely to mediate long-term changes in values and life priorities. Congruently, STEs also mediate many other long-term benefits of psychedelics. In a meta-analysis of 15 therapeutic studies, Kałużna et al. (2022) found that experiences of unity and connectedness in psychedelic experiences strongly predicted long-lasting therapeutic outcomes. While ego-dissolution was a weaker predictor of therapeutic gains, many studies described it as a tool for gaining a wider perspective, reinforcing the hypothesis that perspectival widening results from reduced egocentric salience.

Mystical experiences have been observed to mediate changes toward increased prosociality and spirituality (Griffiths et al., 2008, 2018; Orlowski et al., 2022). Similarly, the literature suggests a connection between ego-dissolution and change toward more environment and animal-friendly values (Pöllänen et al., 2022). Forstmann and Sagioglou (2017, 1) suggest that people might become more environmentally friendly "by changing their self-construal in terms of an incorporation of the natural world." In the longitudinal study aptly titled "From Egoism to Ecoism," Kettner et al. (2019) found that ego-dissolutions mediated increases in nature-relatedness, suggesting a causal connection. If construed and experienced as less separate from nature, the self becomes embedded in the wider context of the natural world, and the intrinsic value of nature might be perceived as higher than under egocentric modes.

One prominent reason why mystical experiences and ego-dissolution might lead to changed values is that they bring an acute awareness of the transient nature of self, as this center of valuation temporarily ceases to exist. In an embodied and felt way, radical deconstruction of self might give *recognition of the nothingness* of ourselves—"the existential shock that attends the vivid apprehension of one's own mortality" (Letheby, 2021, 187; see also Baillie, 2013, 187; Baillie, 2020). In mystical experiences and ego-dissolution, the sense of self and boundaries between oneself and the world can dissolve altogether, temporarily collapsing the ordinary frames of reference for egocentric pursuits (Swanson, 2016; Millière, 2017; James et al., 2020; Laukkonen and Slagter, 2021). Although everyone intellectually understands their mortality and embeddedness in a vast cosmos, psychedelic experiences can animate these facts by presenting them in a visceral, emotionally deep fashion (Grob, 2007, 213; Letheby, 2021, 184–191). Psychedelics can foster facing one's mortality and radically resituating oneself as part of a wider whole with long-lasting effects (Gandy, 2017; Malone et al., 2018, 4; Schmid and Liechti, 2018; St. Arnaud, 2019; Sweeney et al., 2022).

Literature on awe suggests similar although lesser gestalt shifts in our perspective on self. Awe can situate the self as part of our wider world, causing a perspective of reduced self-importance termed "small self" in reaction to the vast stimuli transcending one's current frames of reference, thus broadening our attention and perspective beyond egocentric and instrumental concerns (Vervaeke and Ferraro, 2013; Piff et al., 2015; Hendricks, 2018; Perlin and Li, 2020). Awe and the related perception of "small self" are likely to mediate many value changes, as these experiences allow for tuning into wider contexts of evaluation. Mulukom et al. (2020) observed that psychedelic-induced awe and sense of connection toward nature and humanity (but not the universe) led to increased affective empathy and reduced narcissistic tendencies. Moreover, St. Arnaud and Sharpe (2022) found that awe-proneness mediated positive adult development associated with psychedelics. Significantly, awe is also an important psychological mediator of psychedelics' therapeutic effects (Hendricks et al., 2015).

4.2.3. Increased motivational salience of values

As another possible mechanism of value change, psychedelic experiences might enhance the felt importance and motivating force (i.e., salience) of our values. Through enhanced meaning and meaningfulness and increased suggestibility, psychointegration effects, and visceral representation of knowledge, psychedelics can make our abstract convictions and conceptions experientially alive (Shanon, 2002, 242–255; Carhart-Harris et al., 2015; Hartogsohn, 2018; Letheby, 2021; Timmermann et al., 2022, 184–191). Transposing Letheby's (2021), 188–190) notion of gaining a deeper knowledge of old facts, psychedelic experiences can acquaint us with our values in a deeper, more vivid, and embodied manner than is usually possible, enabling deeper and more meaningful experience of these convictions. Therefore, psychedelic experiences might better align our motivation and experiential salience with our values, perhaps leading to more committed action according to these values, as values gain more "incentive or motivational salience" (Ratcliffe and Broome, 2022, 51). Theoretically, activation of the 5HT2a serotonin system—the primary neurobiological mechanism activated by psychedelics—has been linked to active coping and enhanced capacity for change (Carhart-Harris and Nutt, 2017; Brouwer and Carhart-Harris, 2021), and might mediate the increased motivational salience of values and increases in value-laden striving.

This supposed increase of "volume" in value–salience connections might significantly contribute to (re)connecting to self-transcendent values and play role in other kinds of value changes as well, as it is conceptually independent of self-transcendence (see Section 4.4). Increases in the motivational salience of values are morally significant, as values should mandate us to experience certain things as strongly salient *and* solicit a response (*cf.* Siegel, 2014; Cavedon-Taylor, 2022, 15). It is morally problematic if a person's values do not inform an embodied, experiential sense of salience and meaningfulness, nor motivate action (although not all values can be "active" at every moment; see Oyserman, 2015).

4.3. Connections between values and other long-term changes

Psychedelics can bring other significant long-term changes, such as increases in the traits of self-transcendence, mindfulness capacities, psychological flexibility, openness to experience, and alterations in neural networks. Together these findings support the notion that changes in values are associated with self-transcendence and reduced egocentricity and offer further theoretical possibilities to account for value changes.

4.3.1. Trait self-transcendence

As discussed in Section 3.7, developmental self-transcendence is associated with self-transcendent values. Psychedelic use is associated with increased trait-level self-transcendence and correlated neural changes (Bouso et al., 2012, 2015; Révész et al., 2021). St. Arnaud (2019) explores the idea that the psychedelic mystical experiences might help to treat existential anxiety by fostering traits of self-transcendence. Expanded self–other boundaries are theoretically central to many notions of developmental self-transcendence, supporting the hypothesis that psychedelic changes in sense of self could lead to similar long-term changes (St. Arnaud, 2019). Significantly, St. Arnaud and Sharpe (2022) found an association between psychedelic use and positive adult development (a construct similar to developmental self-transcendence). Psychedelics further enhance many tendencies associated with the trait of self-transcendence, such as a sense of connection, gratitude, death transcendence, and meaning in life (Belser et al., 2017, 16–17; Watts et al., 2017; Griffiths et al., 2018; Schmid and Liechti, 2018).

4.3.2. Mindfulness capacities

Both short-and long-lasting increases in mindfulness capacities support the idea that psychedelic experiences can induce changes in attentional capacities (Bouso et al., 2012; Soler et al., 2016; Radakovic et al., 2022). Smigielski et al. (2019a,b) conducted a double-blind intervention combining psychedelics and mindfulness training; they found that neurobiological changes in areas associated with self-relevant processing [such as the default mode network (DMN) and posterior cingulate cortex (PCC)] and ego-dissolution during psychedelic experiences mediated increases in mindfulness capacities for up to 4 months after the intervention. Sampedro et al. (2017) found that similar structural changes in the brain correlated with enhanced mindfulness capacities 2 months after ayahuasca intake. As mindfulness capacities involve decentered and present-moment-oriented modes of attention, these empirical findings strongly support the hypothesis that psychedelics can lead to long-lasting unselfing (i.e., reduced egocentric attention and salience). The development of mindfulness capacities is also empirically associated with both value-oriented life (Franquesa et al., 2017) and self-transcendence (Vago and David, 2012).

4.3.3. Psychological flexibility

Psychological flexibility processes are one avenue to account for (re)connection to values and possibly other value changes. Psychedelics have been observed to increase psychological flexibility, a central construct of acceptance and commitment therapy (ACT), which involves a) connection and commitment to values and value-driven action, and b) a decentered sense of self (Davis et al., 2020). Studies exploring psychedelics' impact on psychological flexibility processes suggest that psychedelics might help to shift flexibility-fostering modes of selfhood (i.e., perspective-taking self or self-as-context in ACT terminology; Hayes et al., 2019; Watts and Luoma, 2020; Whitfield, 2021). Converging with the framework presented here, ACT posits that these flexible modes of selfhood imply reduced identification with our self-conceptions and personhood (self-as-content) and foster living according to one's values.

4.3.4. Openness to experience

Some value changes might be explained by changes in personality factors, such as openness to experience. Multiple studies observe that the trait of openness to experience is increased by psychedelics (MacLean et al., 2011; Carhart-Harris et al., 2016; Nour et al., 2017; Erritzoe et al., 2018, 2019). Aspects of openness to experience might be related to changes in values. For instance, appreciation of art and nature is plausibly connected to "openness to aesthetics" (partly explained by reduced latent inhibition—the tendency to filter habituated sensory content from perception; St. Arnaud, 2021, 99). Openness to experience is also related to absorption, a tendency to pay total attention (McCrae, 2004), consonant with the unselfed mode of attention. Erritzoe et al. (2019) found that psychedelics have an especially strong effect on "openness to actions" and "openness to values," the latter encompassing tolerance toward other people's lifestyles and willingness to redefine one's own values. These findings support both the notion of a general tendency for value change and specific change toward the universalist value of tolerance (i.e., acceptance and understanding of those different from oneself; Schwartz et al., 2012).

4.3.5. Neurocognitive changes

Theoretically, many of the changes associated with unselfing can be explained by psychedelics' ability to deconstruct the self-model—our ordinary phenomenal experience of being a separate self and the underlying neural and cognitive processes (Letheby, 2021). It is theorized that psychedelics weaken the power of models built by prior experience and that the self is a high-level prior central to our overall modeling of the world (Swanson, 2016, 2018; Letheby and Gerrans, 2017; Carhart-Harris and Friston, 2019). Huxley (1954) framed the ego as a "reducing valve" that filters our perception of the world into a utilitarian form useful for instrumental pursuits and proposed that psychedelics might temporarily relax this valve. His ideas have since been corroborated by neuroscientific research. In predictive processing terminology, self-related priors constrict evaluative processes and values; therefore, temporary radical destabilization and subsequent relaxation of (overweighted) self-related priors might do much of the work associated with self-transcendent value changes. Proposed outcomes of destabilizing high-level priors include increased context sensitivity and a more fluid ability to tune into various perspectives (Carhart-Harris et al., 2018b; Carhart-Harris and Friston, 2019).

From a neurodynamic viewpoint, reduction in egocentric attributions of salience and evaluations likely occurs through altered brain areas and networks associated with selfhood, such as the default mode network, posterior cingulate cortex, and salience network; changes in these correlates acutely and in the long-term with psychedelic STEs (Bouso et al., 2015; Letheby and Gerrans, 2017; Millière et al., 2018; Smigielski et al., 2019a). Similar neural changes are observed in meditation practices (Vago and David, 2012; Brewer et al., 2013; Letheby, 2022).

4.4. The role of contextual factors

4.4.1. Psychedelic pluripotency

It is clear from various anecdotal accounts that there are mechanisms of psychedelic value change other than self-transcendence, and that self-transcendent values are not the only possible outcome. Psychedelics have been used by cults such as the Manson Family and Aum Shinrikyo, by neo-Nazis and the right-wing intelligentsia, and among bellicose Amazonian and Mesoamerican societies, with no apparent challenge to respective values or causing further enculturation towards these worldviews and values (Rios, 1996; Piper, 2015; Pace and Devenot, 2021, 6).[5] These counter-examples disprove the claim that psychedelics inevitably lead to the unidirectional change of values.

To account for this "pluripotency" of psychedelic transformations, many explanations cite contextual factors—the immediate context of and the cultural matrix surrounding the use of psychedelics (Dupuis, 2021; Pace and Devenot, 2021). Psychedelics increase suggestibility and psychedelic experiences are highly sensitive to influences from contextual factors (Carhart-Harris et al., 2015; Hartogsohn, 2017, 2018, 2020; Carhart-Harris et al., 2018b; Eisner, 1997). Dupuis and Veissiere (2022) and Dupuis

5 See also Langlitz's (2020) 'Rightist Psychedelia': https://culanth.org/fieldsights/rightist-psychedelia (Accessed 16.3.2023).

(2021) suggest that psychedelics might act as "super-placebos" and as "tools for cultural transmission" of beliefs and values, utilizing temporary cognitive openings created during experiences (see also Katz, 1978; Pace and Devenot, 2021, 6; Dupuis, 2022a). Thus, psychedelics could make one to adapt or emphasize various values, beliefs and political orientations provided by the social and cultural context of psychedelic use.

No existing research has conclusively determined the relative strength of directionality toward self-transcendent values and the amplification of specific cultural values (Langlitz et al., 2021). In general, to what extent does the observed directionality in psychedelic belief (Griffiths et al., 2019; Timmermann et al., 2021; Nayak and Griffiths, 2022) and value change (see Table 2) stem from social and cultural factors, personal background and intrinsic features of psychedelic experiences is an open question requiring further exploration.

Still, it is doubtful that a purely contextual or cultural account can explain all the observed patterns in the change of values. First, changes contravening (sub)cultural values are also possible (Wallace, 1956; Roseman and Karkabi, 2021). Second, if psychedelics reliably deconstruct the self-model, deconstruction of egocentric valuation modes and values and movement toward self-transcendent values is plausibly one higher-order constant across value changes occurring in different social and cultural settings.

Importantly, even if changes toward self-transcendent values are a higher-order constant of value change, they are still plausibly mediated by one's worldview and epistemology and negotiated with one's other values. Culturally mediated conceptions, beliefs, and models of the world affect how we flesh out what abstract values and good mean and what values imply for action (Murdoch, 1992, 323–325). For example, seen through the biasing lens of a particular ideology and worldview, even activities such as pursuing societal collapse or sacrificing humans to prevent apocalypse might be conceived as non-egocentric (on Aztecs and mushrooms, see Rios, 1996; on accelerationism, see Pace and Devenot, 2021); similarly, nature relatedness could be channeled to ecofascism, and allocentric widening to loyalty to a xenophobic ingroup (Pace and Devenot, 2021).

4.4.2. Optimal conditions for value change

The argument presented here has clarified ways to understand cases where psychedelic STEs translate to long-term changes in values. As discussed in Section 3.9, the translation of momentary experiences into lasting values is far from automatic, many contextual factors likely mediate the relation between momentary experiences and long-term changes, and might hinder or amplify the change toward self-transcendent values.

Notably, St. Arnaud and Sharpe (2022) found that prior intentions and integration or post-experience reflection mediated whether psychedelic experiences led to positive adult development. Lasting value change is highly likely to be mediated by similar factors, as well as by the individual's prior developmental stage (St. Arnaud, 2019). Relatedly, the importance of a "rich context" for moral neuroenhancement is stressed by Earp et al. (2017) and Earp (2018). Value changes might be most likely where psychedelic use is embedded in rich cultural contexts with a mature understanding of the good life and self-transcendence, and with ecologies of practice that can support a positive long-term change of values.

To maximize the wise and beneficial use of psychedelics, the contextual factors supporting self-transcendent value changes should be more closely explored. For example, the synergistic effects of psychedelic and meditative practices should be further investigated (Griffiths et al., 2018; Smigielski et al., 2019a,b; Heuschkel and Kuypers, 2020; Payne et al., 2021; Simonsson and Goldberg, 2022).

5. Discussion

5.1. Implications of the framework

To conclude, one plausible psychological or personal-level mechanism for psychedelic value change is better access to non-egocentric intrinsic and self-transcendent values via reduced egocentric biases in attention and salience. Both long-term changes in values and momentary STEs and perspectival shifts in psychedelic experiences can be plausibly explained through the same unselfing mechanisms. The idea that many value changes are toward self-transcendent values, resulting from processes and experiences of self-transcendence, is a parsimonious way to explain various value changes in a unified fashion, given that STEs are already a central proposed mechanism for psychedelics (Liester and Prickett, 2012; Letheby, 2021, 197, 202; Letheby, 2022; van Elk and Yaden, 2022) and self-transcendence in general (Maslow, 1971; St. Arnaud, 2019). Furthermore, this article's theoretical integration supports the claim that temporary reductions in self-saliency and selfless experiences might sometimes translate into long-term self-transcendent changes in values and traits (*cf.* Millière et al., 2018; St. Arnaud and Sharpe, 2022). Although STEs do not automatically bring long-term changes in values and behavior, as many contextual factors mediate such changes.

Unselfing and changes toward self-transcendent values are existentially and morally significant phenomena. The proposed framework explains self-transcendent value changes as part of wider self-transcendent changes, seen by many theories as a desirable part of optimal human development (cf. St. Arnaud, 2019). Self-transcendent values are important or even central for good life and morality (if one does not subscribe to extreme forms of moral egoism or nihilism). Similarly, states of self-transcendence and reduced egocentricity have been empirically linked to increased wellbeing (Leary and Guadagno, 2011, 139; Wong, 2016; Yaden et al., 2017; St. Arnaud, 2019; Isham et al., 2022).

Psychedelics and other techniques for achieving self-transcendence might thus be important for living good lives, especially where a person lacks access to non-egocentric perspectives. It is notoriously difficult to rationally argue why certain intrinsic values (such as nature or art) should be adopted for non-instrumental reasons; these values must be personally and experientially recognized and understood. Psychedelics might be especially helpful for generating such axiological insights and expanded salience perspectives.[6]

My argument supports the interpretation that psychedelic experiences sometimes expand one's view into fundamental values of our lives. With the relaxation of egocentric attributions of salience, evaluative context may widen enabling one to better grasp self-transcendent values and to connect to one's core values. Visiting

6 Cf. Whiteley (2022) and her concept of "harmful salience perspectives." STEs might generate the opposite: existentially and morally uplifting salience perspectives.

psychedelic states might allow for existentially and morally important direction-giving glimpses and the activation of self-transcendent values, even if more is needed for inner transformation. Thus, psychedelics might sometimes provide a potent source of proleptic rationality, giving reasons to aspire toward valuable directions in life (Callard, 2018; Letheby, 2021; 198). Psychedelic experiences might enhance moral agency by reducing overt attribution of egocentric salience impeding one's moral agency, by increasing epistemic access to non-egocentric values and by aligning one's salience and motivation with them. In this way psychedelic experiences might straighten egocentric misconceptions and biases about the good.

5.1.1. Justification of value changes

The proposed framework provides *prima facie* philosophical justification for psychedelic value changes toward self-transcendent values. According to this framework, self-transcendent value changes occur through personal-level processes that are epistemically and normatively justified, and respect individual autonomy, as enhanced access to self-transcendent perspectives and values gives reasons for value changes (*cf.* Earp et al., 2017; Lavazza, 2017; Langlitz et al., 2021). However, the matter of psychedelic pluripotency warrants some concern. If value changes sometimes stem from being exposed to values and value-laden cultural beliefs and worldviews from the sociocultural setting of psychedelic use, the ethical issues whether psychedelic value changes respect autonomy and are desirable become more complex. It is possible that some contexts of use could lead to coercive or semi-coercive value changes that do not respect individual autonomy (*cf.* Earp et al., 2017; Lavazza, 2017; Dupuis, 2021, 2022a,b; Dupuis and Veissiere, 2022). Thus, how social and cultural influences affect psychedelic value changes should be further explored.

The risks associated with the possibility of suggestive influences involved in the change of values highlight the need for epistemic responsibility, enhanced informed consent, and further inquiry into the wider epistemic and moral context for psychedelic use, as Smith and Sisti (2021), Langlitz et al. (2021), and Letheby (2021) have already advocated. Moreover, Timmermann et al. (2022) proposed psychedelic apprenticeship, entailing practices of intersubjective guidance, validation, and inquiry into the sometimes-controversial knowledge gained during psychedelic. This is also highly relevant for value changes. Psychedelics should be optimally embedded in wise cultural, epistemic, and therapeutic contexts giving room for moral reflection and inquiry into possible value changes.

5.1.2. Societal implications and moral neuroenhancement

Given the challenges of climate change and other existential questions facing humanity, the potential of psychedelics to enhance self-transcendence and self-transcendent values should be further explored from a societal viewpoint. For example, increased nature-relatedness is among the strongest predictors of environment-friendly behavior (Kettner et al., 2019). The possibility of self-transcendent value changes is a prominent reason why psychedelics might be useful as a pharmacological means to enhance humans' moral state (Earp et al., 2017; Earp, 2018). The proposed framework could unify and enrich many proposals in the psychedelic moral enhancement literature (Tennison, 2012; Ahlskog, 2017; Earp, 2018, 18–19; Ballesteros, 2019; Germann, 2019; Lange and Marie, 2021; Kirkham and Letheby, 2022).

5.2. Future directions and limitations

5.2.1. Toward a theory of psychedelic value change

To build a comprehensive theory of psychedelic value change, future work must identify the various types of value changes and mechanisms and explore their interactions. For example, increased suggestibility (Carhart-Harris et al., 2015), the influence of sociocultural factors (Hartogsohn, 2020; Dupuis, 2021; Dupuis, 2022b), alterations in meaning processing, and fluidity of cognition (Shanon, 2002, 143, 243, 340; Hartogsohn, 2018; Vervaeke et al., 2018) might all play a role irrespective of unselfing. Similarly, reduced discrepancy between one's values and salience, increased positive affect and vitality, personality factors such as openness and optimism, and changes in emotional processing and motivation might also play a part (Winkelman, 2001, 2017; MacLean et al., 2011; Carhart-Harris et al., 2016; Vollenweider and Smallridge, 2022). There are likely other mechanisms to be discovered.

This article focused on the possible psychological mechanisms of value change associated with unselfing. An in-depth exploration of how the psychological or experiential levels of value change fit with other levels of explanation (e.g., neuroscientific) is a worthwhile future research task. The possible mechanisms on psychological, socio-cultural, and neurobiological levels, and the relations between various levels of explanation, should be explored (*cf.* van Elk and Yaden, 2022). Integrating an existing neuroscientific understanding of values (e.g., Moll et al., 2015) with theoretical and neuroscientific models of psychedelics, such as the models based on the predictive processing paradigm (Letheby and Gerrans, 2017; Carhart-Harris and Friston, 2019), could yield many insights.

Another important theoretical question is whether psychedelic value changes fit value dimensions or polarities other than those explored here (i.e., self-enhancement versus self-transcendence). For example, psychedelic value changes in political attitudes and openness to values might map to the dimension "openness to change" versus "conservation" in Schwartz et al.'s (2012) value theory (Nour et al., 2017; Lyons and Carhart-Harris, 2018; Erritzoe et al., 2019).

5.2.2. Empirical inquiry into value change

Another important research avenue is to operationalize and empirically test the hypotheses presented in this article. It is especially important to explore the connections among various psychological constructs associated with unselfing and value change. Direct psychometric measurement of various constructs related to unselfing (such as quiet ego and ego development) and measurements of value changes (for instance, using Schwartz's scales and ACT value subscales) would provide further evidence for the questions posed herein.

5.2.3. Philosophical issues

Similarly, there are many pressing philosophical questions concerning value change. Future research should investigate the justification of psychedelic value changes, their relevance for moral enhancement literature, and the normative and metaethical questions raised (such as which conceptions of values and of the good life are congruent with the proposed framework).

5.2.4. Limitations

This article is based on a broad-stroke review of multiple bodies of literature, suggesting hypotheses on the psychological mechanisms of psychedelic value change. To test these ideas against solid evidence, a more rigorous empirical inquiry into psychedelic value changes is required. As this article is based on a selective reading of philosophy and broad bodies of empirical and theoretical literature, efforts to explore alternative theoretical and philosophical hypotheses to explain the findings of various studies should be conducted. It should also be noted that most prior studies into psychedelic value changes are either correlational or relatively small scale and that there are many open empirical questions concerning the change of values patterns (for example, regarding the relative influence of cultural context; see Langlitz et al., 2021). Moreover, many studies suffer from self-selection bias and draw individual participants from relatively narrow socio-economic backgrounds, who share a cultural worldview and hold a certain set of values.

6. Conclusion

This article establishes a plausible connection between psychedelic experiences and value changes toward self-transcendent values. According to the proposed framework, these value changes stem from unselfing—a reduction in egocentric attributions of salience, enabling (re)connection to self-transcendent values. I argue that this increases our capacity to pay attention to reality outside the self and can widen our evaluative context. The central idea is that self-transcendent values are inherently tied to the goods of these various self-transcendent evaluative contexts. Thus, by opening to these wider contexts, an individual gains enhanced epistemic access to self-transcendent values.

The framework fits with the reviewed insights from statistical, theoretical, and qualitative research on psychedelic value changes. Psychedelics can enhance reconnection to values, esthetic values, benevolence/prosocial values, universalism values associated with the good of mankind and the natural world, humility, and spirituality. Empirical and theoretical accounts of psychedelics support the connection between these self-transcendent changes and various STEs (such as awe and mystical experiences), alterations in self-construal, and other psychological and neural changes typically induced by psychedelics. Furthermore, independently of psychedelic research, STEs are linked to reduced trait-level egocentricity and self-transcendent values. Convergence between various theoretical constructs suggests that morally and existentially relevant long-term changes can occur through reducing egocentricity and that STEs can contribute to these processes. If the proposed framework is correct, psychedelic value changes have potential ethical significance and are justified, although these philosophical issues warrant further investigation.

Although the presented evidence indicates robust theoretical and empirical associations between reduced egocentricity and change in values, there are many cases where STEs do not lead to value change. Thus, the personal and contextual factors mediating the link between experiences and long-term value changes need further exploration. Psychedelic value change is supposedly optimal in well-planned, rich moral contexts and in combination with other supporting practices. Future research should empirically explore the hypotheses presented in this article and chart the relation between self-transcendence and other possible mechanisms of value change.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

Ahlskog, R. (2017). Moral enhancement should target self-interest and cognitive capacity. *Neuroethics* 10, 363–373. doi: 10.1007/s12152-017-9331-x

Albahari, M. (2006). *Analytical Buddhism: the two-tiered illusion of self*, London, UK: Palgrave-Macmillan.

Albahari, M. (2014). Insight knowledge of no self in Buddhism: an epistemic analysis. *Philosophers Imprint* 14, 1–30.

Aldwin, C. M., Igarashi, H., and Levenson, M. R. (2019). "Wisdom as self-transcendence" in *The Cambridge handbook of wisdom*. eds. J. Glück and R. J. Sternberg (Cambridge: Cambridge University Press (Cambridge Handbooks in Psychology)), 122–143.

Archer, S. (2022a). *Salience: A philosophical inquiry*. London: Routledge.

Archer, S. (2022b). "Salience and what matters" in *Salience*. ed. S. Archer. *1st* ed (London: Routledge), 193–212.

Ardelt, M. (2008) in *Self-development through selflessness: the paradoxical process of growing wiser*. eds. H. A. Wayment and J. J. Bauer (Washington: American Psychological Association), 221–233.

Baillie, J. (2013). The expectation of nothingness. *Philos. Stud.* 166, 185–203. doi: 10.1007/s11098-012-0081-7

Baillie, J. (2020). The recognition of nothingness. *Philos. Stud.* 177, 2585–2603. doi: 10.1007/s11098-019-01329-6

Ballesteros, V. (2019). Applied mysticism: a drug-enabled visionary experience against moral blindness. *Zygon* 54, 731–755. doi: 10.1111/zygo.12544

Barberia, I., Oliva, R., Bourdin, P., and Slater, M. (2018). Virtual mortality and near-death experience after a prolonged exposure in a shared virtual reality may lead to positive life-attitude changes. *PLOS ONE* 13:e0203358. doi: 10.1371/journal.pone.0203358

Belser, A. B., Agin-Liebes, G., Swift, T. C., Terrana, S., Devenot, N., Friedman, H. L., et al. (2017). Patient experiences of psilocybin-assisted psychotherapy: an interpretative phenomenological analysis. *J. Humanist. Psychol.* 57, 354–388. doi: 10.1177/0022167817706884

Blatchford, E., Bright, S., and Engel, L. (2020). Tripping over the other: could psychedelics increase empathy? *J. Psychedelic Stud.* 4, 163–170. doi: 10.1556/2054.2020.00136

Boer, D., and Boehnke, K. (2015). "What are values? Where do they come from? A developmental perspective" in *Handbook of value: perspectives from economics, neuroscience, philosophy, psychology and sociology*. eds. T. Brosch and D. Sander (Oxford: Oxford University Press), 129–151.

Bouso, J. C., González, D., Fondevila, S., Cutchet, M., Fernández, X., Ribeiro Barbosa, P. C., et al. (2012). Personality, psychopathology, life attitudes and neuropsychological performance among ritual users of Ayahuasca: a longitudinal study. *PLoS One* 7:e42421. doi: 10.1371/journal.pone.0042421

Bouso, J. C., Palhano-Fontes, F., Rodríguez-Fornells, A., Ribeiro, S., Sanches, R., Crippa, J. A., et al. (2015). Long-term use of psychedelic drugs is associated with differences in brain structure and personality in humans. *Eur. Neuropsychopharmacol.* 25, 483–492. doi: 10.1016/j.euroneuro.2015.01.008

Brosch, T., and Sander, D. (2015). *Handbook of value: perspectives from economics, neuroscience, philosophy, psychology and sociology*, Oxford: Oxford University Press.

Brouwer, A., and Carhart-Harris, R. L. (2021). Pivotal mental states. *J. Psychopharmacol.* 35, 319–352. doi: 10.1177/0269881120959637

Bukowski, H., Bigot, A., and Samson, D. (2022). Narcissists are not more egocentric: evidence from a performance-based perspective-taking measure. *PsyArXiv*. doi: 10.31234/osf.io/rtyfm

Burbea, R. (2014). Seeing that frees meditations of emptiness and dependent arising. *Hermes Amara Publications*

Brewer, J. A., Garrison, K. A., and Whitfield-Gabrieli, S. (2013). What about the "Self" is Processed in the Posterior Cingulate Cortex? *Frontiers in Human Neuroscience* 7:647. Available at:. doi: 10.3389/fnhum.2013.00647

Callard, A. (2018). *Aspiration: the agency of becoming*, New York: Oxford University Press.

Carhart-Harris, R. L., Erritzoe, D., Haijen, E., Kaelen, M., and Watts, R. (2018a). Psychedelics and connectedness. *Psychopharmacology* 235, 547–550. doi: 10.1007/s00213-017-4701-y

Carhart-Harris, R. L., and Friston, K. (2019). REBUS and the anarchic brain. *Pharmacol. Rev.* 713, 316–344. doi: 10.1124/pr.118.017160

Carhart-Harris, R. L., Kaelen, M., Bolstridge, M., Williams, T. M., Williams, L. T., Underwood, R., et al. (2016). The paradoxical psychological effects of lysergic acid diethylamide (LSD). *Psychol. Med.* 46, 1379–1390. doi: 10.1017/S0033291715002901

Carhart-Harris, R. L., Kaelen, M., and Whalley, M. G. (2015). LSD enhances suggestibility in healthy volunteers. *J. Psychopharmacol.*:232 785.

Carhart-Harris, R. L., Roseman, L., Haijen, E., Erritzoe, D., Watts, R., Branchi, I., et al. (2018b). Psychedelics and the essential importance of context. *J. Psychopharmacol.* 32, 725–731. doi: 10.1177/0269881118754710

Cavedon-Taylor, D. (2022). "Life through a lens: aesthetic virtue and salience vs Kantian disinterest" in *Salience*. ed. S. Archer. *1st* ed (London: Routledge), 193–212.

Chappell, S.-G. (2018). "Love and knowledge in Murdoch" in *Murdoch on truth and love*. ed. G. Browning (Cham: Springer Verlag), 89–108.

Cohen, E. H., Sagee, R., and Reichenberg, R. (2005). 'Being, having and doing modes of existence: confirmation and reduction of a new scale based on a study among Israeli female teachers, student-teachers and counselors', bulletin de méthodologie sociologique. *Bull. Sociological Methodol.* 87, 38–60. doi: 10.1177/075910630508700104

Carhart-Harris, R. L., and Nutt, D. J. (2017). Serotonin and brain function a tale of two receptors. *J Psychopharmacol [Preprint]*. doi: 10.1177/0269881117725915

Dambrun, M., and Ricard, M. (2011). Self-centeredness and selflessness: a theory of self-based psychological functioning and its consequences for happiness. *Rev. Gen. Psychol.* 15, 138–157. doi: 10.1037/a0023059

Davis, A. K., Barrett, F. S., and Griffiths, R. R. (2020). Psychological flexibility mediates the relations between acute psychedelic effects and subjective decreases in depression and anxiety. *J. Contextual Behav. Sci.* 15, 39–45. doi: 10.1016/j.jcbs.2019.11.004

Denham, A. E. E. (2001). Envisioning the good: Iris Murdoch's moral psychology. *MFS Mod. Fict. Stud.* 473, 602–629.

Driver, J. (2020). Love and unselfing in iris Murdoch. *R. Inst. Philos. Suppl.* 87, 169–180. doi: 10.1017/S1358246120000028

Dupuis, D. (2021). Psychedelics as tools for belief transmission. Set, setting, suggestibility, and persuasion in the ritual use of hallucinogens. *Front. Psychol.* 12:730031. doi: 10.3389/fpsyg.2021.730031

Dupuis, D. (2022a). The psychedelic ritual as a technique of the self: identity reconfiguration and narrative reframing in the therapeutic efficacy of ayahuasca. *HAU: J. Ethnographic Theory* 12, 198–216. doi: 10.1086/719792

Dupuis, D. (2022b). The socialization of hallucinations: cultural priors, social interactions, and contextual factors in the use of psychedelics. *Transcult. Psychiatry* 59, 625–637. doi: 10.1177/13634615211036388

Dupuis, D., and Veissiere, S. (2022). Culture, context, and ethics in the therapeutic use of hallucinogens: psychedelics as active super-placebos? *Transcult. Psychiatry* 59, 571–578. doi: 10.1177/13634615221131465

Earp, B. D. (2018). Psychedelic moral enhancement. M. Hauskeller and Coyne, L.. *Royal Institute of philosophy supplement*. Cambridge Cambridge University Press.

Earp, B. D., Savulescu, J., and Douglas, T. (2017). "Moral neuroenhancement" in *Routledge handbook of neuroethics*. eds. S. Johnson and K. Rommelfanger (New York (NY): Routledge), 166–184.

Eisner, B. (1997). Set, setting, and matrix. *J. Psychoactive Drugs* 29, 213–216. doi: 10.1080/02791072.1997.10400190

Erritzoe, D., Roseman, L., Nour, M. M., MacLean, K., Kaelen, M., Nutt, D. J., et al. (2018). Effects of psilocybin therapy on personality structure. *Acta Psychiatr. Scand.* 138, 368–378. doi: 10.1111/acps.12904

Erritzoe, D., Smith, J., Fisher, P. M., Carhart-Harris, R., Frokjaer, V. G., and Knudsen, G. M. (2019). Recreational use of psychedelics is associated with elevated personality trait openness: exploration of associations with brain serotonin markers. *J. Psychopharmacol.* 33, 1068–1075. doi: 10.1177/0269881119827891

Fiehler, K., Wolf, C., Klinghammer, M., and Blohm, G. (2014). Integration of egocentric and allocentric information during memory-guided reaching to images of a natural environment. *Front. Hum. Neurosci.* 8:636. doi: 10.3389/fnhum.2014.00636

Flanagan, O., and Graham, G. (2017). "Truth and sanity positive illusions, spiritual delusions, and metaphysical hallucinations" in *Extraordinary science and psychiatry responses to the crisis in mental health research*. eds. J. Poland and S. Tekin (Cambridge MA: MIT Press), 293–312.

Forstmann, M., and Sagioglou, C. (2017). Lifetime experience with classic psychedelics predicts pro-environmental behavior through an increase in nature relatedness. *J. Psychopharmacol.* 31, 975–988. doi: 10.1177/0269881117714049

Forstmann, M., Yudkin, D. A., Prosser, A. M. B., Heller, S. M., and Crockett, M. J. (2020). Transformative experience and social connectedness mediate the mood-enhancing effects of psychedelic use in naturalistic settings. *Proc. Natl. Acad. Sci.* 117, 2338–2346. doi: 10.1073/pnas.1918477117

Franquesa, A., Cebolla, A., García-Campayo, J., Demarzo, M., Elices, M., Pascual, J. C., et al. (2017). Meditation practice is associated with a values-oriented life: the mediating role of decentering and mindfulness. *Mindfulness* 8, 1259–1268. doi: 10.1007/s12671-017-0702-5

Fromm, E. (1976). *To have or to be?* Harper & Row.

Furnham, A., Richards, S., and Paulhus, D. (2011). The dark triad: a 10 year review. *Social Personality Psychol. Compass* 7, 199–215.

Grob, C. S. (2007). "The use of psilocybin in patients with advanced cancer and existential anxiety" in *Psychedelic Medicine: New Evidence for Hallucinogenic Substances as Treatments*. eds. M. Winkelman and T. B. Roberts (Westport, CT: Praeger), 205–216.

Gandy, S. (2017). Dying to live: the power of transcendence in the treatment of existential anxiety. *Threshold: J. Interdiscip. Conscious. Stud.* 1, 25–36.

Gandy, S., Forstmann, M., Carhart-Harris, R. L., Timmermann, C., Luke, D., and Watts, R. (2020). The potential synergistic effects between psychedelic administration and nature contact for the improvement of mental health. *Health Psychol. Open* 7:2055102920978123. doi: 10.1177/2055102920978123

Gasser, P., Katharina, K., and Passie, T. (2015). LSD-assisted psychotherapy for anxiety associated with a life-threatening disease: a qualitative study of acute and sustained subjective effects. *J. Psychopharmacol.* 29, 57–68. doi: 10.1177/0269881114555249

Germann, C. B. (2019). 5-methoxy-N,N-dimethyltryptamine: an ego-dissolving endogenous neurochemical catalyst of creativity. *bioRxiv*:578435. doi: 10.1101/578435

Gibbs, J. C. (2003). *Moral development and reality: beyond the theories of Kohlberg and Hoffman*. Thousand Oaks, USA: SAGE Publications, Incorporated.

Greyson, B. (1983). Near-death experiences and personal values. *Am. J. Psychiatry* 140, 618–620. doi: 10.1176/ajp.140.5.618

Griffiths, R. R., Hurwitz, E. S., Davis, A. K., Johnson, M. W., and Jesse, R. (2019). Survey of subjective "god encounter experiences": comparisons among naturally occurring experiences and those occasioned by the classic psychedelics psilocybin, LSD, ayahuasca, or DMT. *PLoS One* 14:e0214377. doi: 10.1371/journal.pone.0214377

Griffiths, R. R., Johnson, M. W., Richards, W. A., Richards, B. D., Jesse, R., MacLean, K. A., et al. (2018). Psilocybin-occasioned mystical-type experience in combination with meditation and other spiritual practices produces enduring positive changes in psychological functioning and in trait measures of prosocial attitudes and behaviors. *J. Psychopharmacol.* 32, 49–69. doi: 10.1177/0269881117731279

Griffiths, R. R., Johnson, M. W., Richards, W. A., Richards,, B. D., McCann, and U., Robert, J. (2011). Psilocybin occasioned mystical-type experiences: immediate and persisting dose-related effects. *Psychopharmacol* 218, 649–665. doi: 10.1007/s00213-011-2358-5

Griffiths, R. R., Richards, W., Johnson, M., McCann, U., and Jesse, R. (2008). Mystical-type experiences occasioned by psilocybin mediate the attribution of personal meaning and spiritual significance 14 months later. *J. Psychopharmacol.* 22, 621–632. doi: 10.1177/0269881108094300

Griffiths, R. R., Richards, W. A., Mccann, U., and Jesse, R. (2006). Psilocybin can occasion mystical-type experiences having substantial and sustained personal meaning and spiritual significance. *Psychopharmacology* 187, 268–283; discussion 284-292. doi: 10.1007/s00213-006-0457-5

Garcia-Romeu, A. (2010). Self-transcendence as a measurable transpersonal construct. *Journal of Transpersonal Psychology* 42, 26–47.

Hadot, P. (2004) *What is ancient philosophy?* Translated by M. Chase. Cambridge: MA Belknap Press of Harvard Univ. Press.

Hadot, P. (1995). *Philosophy as a way of life-spiritual exercises from Socrates to Foucault*, Malden, MA: Blackwell Publishing.

Hanley, A. W., Baker, A. K., and Garland, E. L. (2017). Self-interest may not be entirely in the interest of the self: association between selflessness, dispositional mindfulness and psychological well-being. *Personal. Individ. Differ.* 117, 166–171. doi: 10.1016/j.paid.2017.05.045

Hartogsohn, I. (2017). Constructing drug effects: a history of set and setting. *Drug Sci. Policy Law* 3, 1–17.

Hartogsohn, I. (2018). The meaning-enhancing properties of psychedelics and their mediator role in psychedelic therapy, spirituality, and creativity. *Front. Neurosci.* 12:129. doi: 10.3389/fnins.2018.00129

Hartogsohn, I. (2020) *American trip: set, setting, and the psychedelic experience in the twentieth century*. Cambridge, Massachusetts: The MIT Press.

Hayes, S., Stu, L., Mark, M., Zhu, Z., and Xiaoyu, B., et al. (2019). The centrality of sense of self in psychological flexibility processes: what the neurobiological and psychological correlates of psychedelics suggest. *J. Contextual Behav. Sci.* 15, 30–38. doi: 10.1016/j.jcbs.2019.11.005

Hendricks, P. S. (2018). Awe: a putative mechanism underlying the effects of classic psychedelic-assisted psychotherapy. *Int. Rev. Psychiatry* 30, 331–342. doi: 10.1080/09540261.2018.1474185

Hendricks, P. S., Thorne, C. B., and Clark, C. B. (2015). Classic psychedelic use is associated with reduced psychological distress and suicidality in the United States adult population. *J. Psychopharmacol.* 29, 280–288. doi: 10.1177/0269881114565653

Heuschkel, K., and Kuypers, K. P. C. (2020). Depression, mindfulness, and psilocybin: possible complementary effects of mindfulness meditation and psilocybin in the treatment of depression. A review. *Front. Psych.* 11:224. doi: 10.3389/fpsyt.2020.00224

Hobbs, D. J. (2021). *Towards a phenomenology of values*, New York: Routledge.

Hofmann, A. (1980) *LSD, my problem child*. Translated by J. Ott. New York: McGraw-Hill.

Horney, K. (1999). *Neurosis and human growth: The struggle toward self-realization. Repr. [d. Ausg.] 1951* London: Routledge (psychoanalysis, 14).

Hunt, H. (2013). Implications and consequences of post-modern philosophy for contemporary perspectives on transpersonal and spiritual experience, I. The later Foucault and Pierre Hadot on a post-Socratic this-worldly mysticism. *Int. J. Transpersonal Stud.* 32, 1–15. doi: 10.24972/ijts.2013.32.1.1

Huxley, A. (1954). *The doors of perception. 1st* Edn, New York: Harper & Row.

Higgins, E. T. (2015). "What is value? Where does it come from? A psychological perspective" in *Handbook of Value: Perspectives from Economics, Neuroscience, Philosophy, Psychology and Sociology*. eds. T. Brosch and D. Sander (Oxford: Oxford University Press, p. 0. Available at:) doi: 10.1093/acprof:oso/9780198716600.003.0003

Isham, A., Elf, P., and Jackson, T. (2022). Self-transcendent experiences as promoters of ecological wellbeing? Exploration of the evidence and hypotheses to be tested. *Front. Psychol.* 13:1051478. doi: 10.3389/fpsyg.2022.1051478

James, W. (2008) *The varieties of religious experience: a study in human nature*. London; New York: Routledge (Routledge classics).

James, E., Robertshaw, T. L., Hoskins, M., and Sessa, B. (2020). Psilocybin occasioned mystical-type experiences. *Hum. Psychopharmacol. Clin. Exp.* 35:e2742. doi: 10.1002/hup.2742

Kähönen, J. (2020). *Psychedelic unselfing and moral perception: a philosophical account of the change of values induced by psychedelic experiences. Master's Thesis* University of Helsinki Available at: https://helda.helsinki.fi/handle/10138/315556.

Kałużna, A., Marco, S., Emily, G. C., James, C. (2022). Being no one, being one: the role of ego-dissolution and connectedness in the therapeutic effects of psychedelic experience. *J. Psychedelic Stud.* 6, 111–136. doi: 10.1556/2054.2022.00199

Katz, S. T. (1978). "Language, epistemology, and mysticism" in *Mysticism and philosophical analysis*. ed. S. T. Katz (New York: Oxford University Press), 22–74.

Kegan, R. (1982) *The evolving self: Problem and process in human development*. Cambridge, Mass: Harvard University Press.

Kettner, H., Gandy, S., Haijen, E. C. H. M., and Carhart-Harris, R. L. (2019). From egoism to Ecoism: psychedelics increase nature relatedness in a state-mediated and context-dependent manner. *Int. J. Environ. Res. Public Health* 16:5147. doi: 10.3390/ijerph16245147

Kettner, H., Rosas, F. E., Timmermann, C., Kärtner, L., Carhart-Harris, R. L., and Roseman, L. (2021). Psychedelic Communitas: intersubjective experience during psychedelic group sessions predicts enduring changes in psychological wellbeing and social connectedness. *Front. Pharmacol.* 12:623985. doi: 10.3389/fphar.2021.623985

Kirkham, N., and Letheby, C. (2022). Psychedelics and environmental virtues. *Philos. Psychol.*, 1–25. doi: 10.1080/09515089.2022.2057290

Kitson, A., Chirico, A., Gaggioli, A., and Riecke, B. E. (2020). A Review on Research and Evaluation Methods for Investigating Self-Transcendence. *Front. Psychol.* 11:547687. doi: 10.3389/fpsyg.2020.547687

Kohlberg, L., and Ryncarz, R. A. (1990). "Beyond justice reasoning: moral development and consideration of a seventh stage" in *Higher stages of human development: perspectives on adult growth*, eds. C.N. Alexander and E. Langer (New York, NY: Oxford University Press), 191–207.

Koltko-Rivera, M. E. (2004). The psychology of worldviews. *Rev. Gen. Psychol.* 8, 3–58. doi: 10.1037/1089-2680.8.1.3

Lange, V., and Marie, S. (2021). Exploring moral bio-enhancement through psilocybin-facilitated Prosocial effects. *J. Cognit. Neuroethics* 8:42.

Langlitz, N., Dyck, E., Scheidegger, M., and Repantis, D. (2021). Moral psychopharmacology needs moral inquiry: the case of psychedelics. *Front. Psych.* 12:1104. doi: 10.3389/fpsyt.2021.680064

Laukkonen, R. E., and Slagter, H. A. (2021). From many to (n)one: meditation and the plasticity of the predictive mind. *Neurosci. Biobehav. Rev.* 128, 199–217. doi: 10.1016/j.neubiorev.2021.06.021

Lavazza, A. (2017). "Ways of being well. Realistic and unrealistic wellbeing" in *New perspectives on realism*. eds. L. Taddio and K. W. Molin (Mimesis International)

Le, T., and Levenson, M. (2005). Wisdom as self-transcendence: what's love (& individualism) got to do with it? *J. Res. Personal.* 39, 443–457. doi: 10.1016/j.jrp.2004.05.003

Leary, M. R., and Guadagno, J. (2011). "The role of hypo-egoic self-processes in optimal functioning and subjective well-being" in *Designing positive psychology: taking stock and moving forward*. eds. K. M. Sheldon, T. B. Kashdan and M. F. Steger (Oxford University Press)

Leary, M. R., and Tangney, J. P. (2012). "The self as an organizing construct in the behavioral and social sciences" in *Handbook of self and identity*. eds. M. R. Leary and J. P. Tangney. *2nd* ed (New York: Guilford Press)

Lerner, M., and Lyvers, M. (2006). Values and beliefs of psychedelic drug users: a cross-cultural study. *J. Psychoactive Drugs* 38, 143–147. doi: 10.1080/02791072.2006.10399838

Letheby, C. (2017). Naturalizing psychedelic spirituality. *Zygon* 523, 623–642.

Letheby, C. (2021). *Philosophy of psychedelics*, New York, NY, US: Oxford University Press.

Letheby, C. (2022). "Psychedelics and meditation: a neurophilosophical perspective" in *The Routledge handbook of the philosophy of meditation*. ed. R. Repetti (London: Routledge)

Letheby, C., and Gerrans, P. (2017). Self unbound: ego dissolution in psychedelic experience. *Neurosci. Conscious.* 2017, 1–11. doi: 10.1093/nc/nix016

Levenson, M., Aldwin, C., and Cupertino, A. (2001). "Transcending the self: toward a Liberative model of adult development" in *Maturidade & Velhice: Um Enfoque Multidisciplinar*. ed. A. L. Neri (Papirus: Sao Paulo, BR), 99–116.

Liester, M. B., and Prickett, J. I. (2012). Hypotheses regarding the mechanisms of ayahuasca in the treatment of addictions. *J. Psychoactive Drugs* 44, 200–208. doi: 10.1080/02791072.2012.704590

Loevinger, J., and Blasi, A. (1976) *Ego development: conceptions and theories. 1st ed.* San Francisco: Jossey-Bass Publishers (Jossey-Bass behavioral science series).

Lumber, R., Richardson, M., and Sheffield, D. (2017). Beyond knowing nature: contact, emotion, compassion, meaning, and beauty are pathways to nature connection. *PLoS One* 12:e0177186. doi: 10.1371/journal.pone.0177186

Lyons, T., and Carhart-Harris, R. L. (2018). Increased nature relatedness and decreased authoritarian political views after psilocybin for treatment-resistant depression. *J. Psychopharmacol.* 327, 811–819.

MacLean, K. A., Johnson, M. W., and Griffiths, R. R. (2011). Mystical experiences occasioned by the hallucinogen psilocybin Lead to increases in the personality domain of openness. *J. Psychopharmacol.* 25, 1453–1461. doi: 10.1177/0269881111420188

Malone, T. C., Mennenga, S. E., Guss, J., Podrebarac, S. K., Owens, L. T., Bossis, A. P., et al. (2018). Individual experiences in four cancer patients following psilocybin-assisted psychotherapy. *Front. Pharmacol.* 9:256. doi: 10.3389/fphar.2018.00256

Martial, C., Fontaine, G., Gosseries, O., Carhart-Harris, R., Timmermann, C., Laureys, S., et al. (2021). Losing the self in near-death experiences: the experience of ego-dissolution. *Brain Sci.* 11:929. doi: 10.3390/brainsci11070929

Maslow, A. H. (1970). *Religions, values, and peak-experience*, Middlesex, England: Penguin Compass.

Maslow, A. H. (1971). *The farther reaches of human nature*. New York: Viking Press.

Masters, R. E. L., and Houston, J. (1966). *The varieties of psychedelic experience*. Holt, Rinehart and Winston.

McCrae, R. R. (2004). "Openness to experience" in *Encyclopedia of applied psychology*. ed. C. D. Spielberger (New York: Elsevier), 707–709.

Miller, W. R., and C'de Baca, J. (2001). *Quantum change: when epiphanies and sudden insights transform ordinary lives*. New York: Guilford Press.

Millière, R. (2017). Looking for the self: phenomenology, neurophysiology and philosophical significance of drug-induced ego dissolution. *Front. Hum. Neurosci.* 11:245. doi: 10.3389/fnhum.2017.00245

Millière, R. (2020). The varieties of selflessness. *Philos. Mind Sci.* 1I:8.

Millière, R., Carhart-Harris, R. L., Roseman, L., Trautwein, F. M., and Berkovich-Ohana, A. (2018). Psychedelics, meditation, and self-consciousness. *Front. Psychol.* 9:1475. doi: 10.3389/fpsyg.2018.01475

Mole, C. (2022). "The moral psychology of salience" in *Salience*. ed. S. Archer. *1st* ed (London: Routledge), 193–212.

Moll, J., Zahn, R., and de Oliveira-Souza, R. (2015). "The neural underpinnings of moral values" in *Handbook of value: perspectives from economics, neuroscience, philosophy, psychology and sociology*. eds. T. Brosch and D. Sander (Oxford: Oxford University Press)

Mulukom, V., Patterson, R., and Elk, M. (2020). Broadening your mind to include others: the relationship between serotonergic psychedelic experiences and maladaptive narcissism. *Psychopharmacology* 237, 2725–2737. doi: 10.1007/s00213-020-05568-y

Murdoch, I. (1992). *Metaphysics as a guide to morals* Harmondsworth Penguin.

Murdoch, I. (1997) *Existentialists and mystics writings on philosophy and literature*. London: Chatto & Windus.

Murdoch, I. (2001) *The sovereignty of good*. London: Routledge and Kegan Paul.

Nagel, T. (1986). The view from nowhere. *Revue Philosophique de la France Et de l'Etranger* 178, 221–222.

Nayak, S. M., and Griffiths, R. R. (2022). A single belief-changing psychedelic experience is associated with increased attribution of consciousness to living and non-living entities. *Front. Psychol.* 13:852248. doi: 10.3389/fpsyg.2022.852248

Newson, M., Khurana, R., Cazorla, F., and van Mulukom, V. (2021). I get high with a little help from my friends – how raves can invoke identity fusion and lasting co-operation via transformative experiences. *Front. Psychol.* 12:719596. doi: 10.3389/fpsyg.2021.719596

Noorani, T., Garcia-Romeu, A., Swift, T. C., Griffiths, R. R., and Johnson, M. W. (2018). Psychedelic therapy for smoking cessation: qualitative analysis of participant accounts. *J. Psychopharmacol.* 32, 756–769. doi: 10.1177/0269881118780612

Nour, M., and Carhart-Harris, R. (2017). Psychedelics and the science of self-experience. *Br. J. Psychiatry* 210, 177–179. doi: 10.1192/bjp.bp.116.194738

Nour, M. M., Evans, L., and Carhart-Harris, R. L. (2017). Psychedelics, personality and political perspectives. *J. Psychoactive Drugs* 49, 182–191. doi: 10.1080/02791072.2017.1312643

Olsson, A.-L. (2018). A moment of letting go: iris Murdoch and the morally transformative process of unselfing. *J. Philos. Educ.* 52, 163–177. doi: 10.1111/1467-9752.12278

Orlowski, P., Ruban, A., Szczypiński, J., Hobot, J., Bielecki, M., and Bola, M. (2022). 2021-naturalistic use of psychedelics is related to emotional reactivity and self-consciousness the mediating role of ego-dissolution. *J. Psychopharmacol.* 36, 987–1000. doi: 10.1177/02698811221089034

Oyserman, D. (2015). Values, psychology of. *Int. Encyclopedia Social Behav. Sci.* [Preprint]. doi: 10.1016/B978-0-08-097086-8.24030-0

Pace, B. A., and Devenot, N. (2021). Right-wing Psychedelia: case studies in cultural plasticity and political pluripotency. *Front. Psychol.* 12:733185. doi: 10.3389/fpsyg.2021.733185

Panizza, S. (2019). Moral perception beyond Supervenience: Iris Murdoch's radical perspective. *J. Value Inquiry* 1, 1–16.

Payne, J. E., Chambers, R., and Liknaitzky, P. (2021). Combining psychedelic and mindfulness interventions: synergies to inform clinical practice. *ACS Pharmacol. Transl. Sci.* 4, 416–423. doi: 10.1021/acsptsci.1c00034

Peck, J. (2020) *Psychedelics for systems change: could drugs help us save the planet?, openDemocracy*. Available at: https://www.opendemocracy.net/en/oureconomy/psychedelics-systems-change-could-drugs-help-us-save-planet/. (Accessed: 20 May 2022).

Pelser, A. C., and Roberts, R. C. (2015). "Religious value and moral psychology" in *Handbook of value: perspectives from economics, neuroscience, philosophy, psychology and sociology*. eds. T. Brosch and D. Sander (Oxford: Oxford University Press)

Perlin, J. D., and Li, L. (2020). Why does awe have Prosocial effects? New perspectives on awe and the small self. *Perspect. Psychol. Sci.* 15, 291–308. doi: 10.1177/1745691619886006

Piff, P. K., Dietze, P., Feinberg, M., Stancato, D. M., and Keltner, D. (2015). Awe, the small self, and prosocial behavior. *J. Pers. Soc. Psychol.* 108, 883–899. doi: 10.1037/pspi0000018

Piper, A. (2015). "Strange drugs makes for strange bedfellows: Ernst Junger, Albert Hofmann and the politics of psychedelics" in *Create space independent publishing platform*. eds. D. Darling, J. Getzendanner and G. Llwydd, Portland, OR, USA: CreateSpace Independent Publishing Platform

Plato (2008) in *Symposium*. ed. R. Waterfield (Oxford; New York: Oxford University Press (Oxford world's classics))

Pokorny, T., Preller, K. H., Kometer, M., Dziobek, I., and Vollenweider, F. X. (2017). Effect of psilocybin on empathy and moral decision-making. *Int. J. Neuropsychopharmacol.* 20, 747–757. doi: 10.1093/ijnp/pyx047

Pöllänen, E., Osika, W., CUD, S., and Simonsson, O. (2022). Classic psychedelics and human–animal relations. *Int. J. Environ. Res. Public Health* 19:8114. doi: 10.3390/ijerph19138114

Radakovic, C., Radakovic, R., Peryer, G., and Geere, J. A. (2022). Psychedelics and mindfulness: a systematic review and meta-analysis. *J. Psychedelic Stud.* 6, 137–153. doi: 10.1556/2054.2022.00218

Ratcliffe, M., and Broome, M. R. (2022). "Beyond "salience" and "affordance": understanding anomalous experiences of significant possibilities" in *Salience*. ed. S. Archer. *1st* ed (London: Routledge), 193–212.

Révész, D., Ona, G., Rossi, G. N., Rocha, J. M., dos Santos, R., Hallak, J. E. C., et al. (2021). Cross-sectional associations between lifetime use of psychedelic drugs and psychometric measures during the COVID-19 confinement: a transcultural study. *Front. Psych.* 12:687546. doi: 10.3389/fpsyt.2021.687546

Rios, D. (1996). *Hallucinogens cross-cultural perspectives* Waveland Pr Inc.

Rokeach, M. (1973) *The nature of human values*. New York: Free Press.

Roseman, L., and Karkabi, N. (2021). On revelations and revolutions: drinking Ayahuasca among Palestinians under Israeli occupation. *Front. Psychol.* 12:3668. doi: 10.3389/fpsyg.2021.718934

Roseman, L., Ron, Y., Saca, A., Ginsberg, N., Luan, L., Karkabi, N., et al. (2021). Relational processes in Ayahuasca groups of Palestinians and Israelis. *Front. Pharmacol.* 12:607529. doi: 10.3389/fphar.2021.607529

Sampedro, F., de la Fuente Revenga, M., Valle, M., Roberto, N., Domínguez-Clavé, E., Elices, M., et al. (2017). Assessing the psychedelic "after-glow" in Ayahuasca users: post-acute Neurometabolic and functional connectivity changes are associated with enhanced mindfulness capacities. *Int. J. Neuropsychopharmacol.* 20:698. doi: 10.1093/ijnp/pyx036

Schmid, Y., and Liechti, M. E. (2018). Long-lasting subjective effects of LSD in normal subjects. *Psychopharmacology* 235, 535–545. doi: 10.1007/s00213-017-4733-3

Schopenhauer, A. (1818) '*The world as will and representation*'. New York Dover. Translated by E.F.J. Payne.

Schwartz, S. H. (2012). An overview of the Schwartz theory of basic values. *Online Readings Psychol. Culture* 2, 3–20. doi: 10.9707/2307-0919.1116

Schwartz, S. H. (2015). "Basic individual values: sources and consequences" in *Handbook of value: perspectives from economics, neuroscience, philosophy, psychology and sociology*. eds. T. Brosch and D. Sander (Oxford: Oxford University Press), 63–84.

Schwartz, S. H., Cieciuch, J., Vecchione, M., Davidov, E., Fischer, R., Beierlein, C., et al. (2012). Refining the theory of basic individual values. *J. Pers. Soc. Psychol.* 103, 663–688. doi: 10.1037/a0029393

Shanon, B. (2002) *The antipodes of the mind: charting the phenomenology of the Ayahuasca experience. 1st ed.* Oxford, New York: Oxford University Press.

Siegel, S. (2014). "Affordances and the contents of perception" in *Does perception have content?* ed. B. Brogaard (Oxford: Oxford University Press), 39–76.

Simonsson, O., and Goldberg, S. B. (2022). Linkages between psychedelics and meditation in a population-based sample in the United States. *J. Psychoactive Drugs* 55, 11–18. doi: 10.1080/02791072.2021.2022816

Smigielski, L., Kometer, M., Scheidegger, M., Krähenmann, R., Huber, T., and Vollenweider, F. X. (2019a). Characterization and prediction of acute and sustained response to psychedelic psilocybin in a mindfulness group retreat. *Sci. Rep.* 9:14914. doi: 10.1038/s41598-019-50612-3

Smigielski, L., Scheidegger, M., Kometer, M., and Vollenweider, F. X. (2019b). Psilocybin-assisted mindfulness training modulates self-consciousness and brain default mode network connectivity with lasting effects. *Neuro Image* 196, 207–215. doi: 10.1016/j.neuroimage.2019.04.009

Smith, W. R., and Sisti, D. (2021). Ethics and ego dissolution: the case of psilocybin. *J. Med. Ethics* 47, 807–814. doi: 10.1136/medethics-2020-106070

Soler, J., Elices, M., Franquesa, A., Barker, S., Friedlander, P., Feilding, A., et al. (2016). Exploring the therapeutic potential of Ayahuasca: acute intake increases mindfulness-related capacities. *Psychopharmacology* 233, 823–829. doi: 10.1007/s00213-015-4162-0

St. Arnaud, K. O., and Sharpe, D. (2022). Opening to awe: psychedelic-assisted self-transcendence and positive adult development. *J. Adult Dev.* [Preprint], 1–15. doi: 10.1007/s10804-022-09419-2

St. Arnaud, K. (2019). Psychedelic-assisted psychotherapy for existential suffering: facilitating self-transcendence at the end-of-life. *Int. J. Transpersonal Stud.* 38, 31–52. doi: 10.24972/ijts.2019.38.2.31

St. Arnaud, K. (2021). *Entheogen-assisted self-transcendence & psychospiritual development: a study of positive psychedelic drug use. Doctoral Thesis* University of Alberta.

Studerus, E., Kometer, M., Hasler, F., and Vollenweider, F. X. (2011). Acute, subacute and long-term subjective effects of psilocybin in healthy humans a pooled analysis of experimental studies. *J. Psychopharmacol.* 25, 1434–1452. doi: 10.1177/0269881110382466

Sui, J., and Humphreys, G. W. (2015). The integrative self: how self-reference integrates perception and memory. *Trends Cogn. Sci.* 19, 719–728. doi: 10.1016/j.tics.2015.08.015

Swanson, L. R. (2016). The predictive processing paradigm has roots in Kant. *Front. Syst. Neurosci.* 10:79. doi: 10.3389/fnsys.2016.00079

Swanson, L. R. (2018). Unifying theories of psychedelic drug effects. *Front. Pharmacol.* 9:172. doi: 10.3389/fphar.2018.00172

Sweeney, M. M., Nayak, S., Hurwitz, E. S., Mitchell, L. N., Swift, T. C., and Griffiths, R. R. (2022). Comparison of psychedelic and near-death or other non-ordinary experiences in changing attitudes about death and dying. *PLoS One* 17:e0271926. doi: 10.1371/journal.pone.0271926

Swift, T. C., Alexander, B. B., Gabrielle, A-L., Neşe, D. C., Saras, T., Harris, L. F., et al. (2017). Cancer at the dinner table: experiences of psilocybin-assisted psychotherapy for the treatment of Cancer-related distress. *J. Humanist. Psychol.* 57, 488–519. doi: 10.1177/0022167817715966

Tennison, M. N. (2012). Moral Transhumanism: the next step. *J. Med. Philos.* 37, 405–416. doi: 10.1093/jmp/jhs024

Thompson, E. (2020). Death: the ultimate transformative experience. 269–288. doi: 10.1093/oso/9780198823735.003.0016

Timmermann, C., Kettner, H., Letheby, C., Roseman, L., Rosas, F. E., and Carhart-Harris, R. L. (2021). Psychedelics alter metaphysical beliefs. *Sci. Rep.* 11:22166. doi: 10.1038/s41598-021-01209-2

Timmermann, C., Watts, R., and Dupuis, D. (2022). Towards psychedelic apprenticeship: developing a gentle touch for the mediation and validation of psychedelic-induced insights and revelations. *Transcult. Psychiatry* 59, 691–704. doi: 10.1177/13634615221082796

Tappolet, C., and Rossi, M. (2015). "What is value? Where does it come from? A philosophical perspective" in *Handbook of Value: Perspectives from Economics, Neuroscience, Philosophy, Psychology and Sociology*. eds. T. Brosch and D. Sander (Oxford: Oxford University Press, p. 0. Available at:) doi: 10.1093/acprof:oso/9780198716600.003.0001

Vago, D. R. P. D., and David, S. A. M. D. (2012). Self-awareness, self-regulation, and self-transcendence (S-ART): a framework for understanding the neurobiological mechanisms of mindfulness. *Front. Hum. Neurosci.* 6:296. doi: 10.3389/fnhum.2012.00296

van Elk, M., and Yaden, D. B. (2022). Pharmacological, neural, and psychological mechanisms underlying psychedelics: a critical review. *Neurosci. Biobehav. Rev.* 140:104793. doi: 10.1016/j.neubiorev.2022.104793

Varela, F. J., Thompson, E., and Rosch, E. (1993). *The embodied mind: cognitive science and human experience*. Cambridge, Mass: MIT Press (14. print).

Vaughan, F. (1983). Perception and knowledge reflections on psychological and spiritual.

Vervaeke, J., and Ferraro, L. (2013). "Relevance, meaning and the cognitive science of wisdom" in . eds. M. Ferrari and N. M. Weststrate (Dordrecht: Springer Netherlands), 21–51.The scientific study of personal wisdom: from contemplative traditions to neuroscience

Vervaeke, J., Ferraro, L., and Herrera-Bennett, A. (2018). "Flow as spontaneous thought insight and implicit learning" in *The Oxford handbook of spontaneous thought mind-wandering, creativity, and dreaming*. eds. K. Christoff and K. Fox (Oxford: Oxford University Press)

Vervaeke, J., Mastropietro, C., and Miscevic, F. (2017). *Zombies in Western culture: a twenty-first century crisis*, England: Open Book Publishers.

Vollenweider, F. X., and Smallridge, J. W. (2022). Classic psychedelic drugs: update on biological mechanisms. *Pharmacopsychiatry* 55, 121–138. doi: 10.1055/a-1721-2914

Wallace, A. F. C. (1956). Revitalization movements. *Am. Anthropol.* 58, 264–281. doi: 10.1525/aa.1956.58.2.02a00040

Watts, R., Day, C., Krzanowski, J., Nutt, D., and Carhart-Harris, R. (2017). Patients' accounts of increased "connectedness" and "acceptance" after psilocybin for treatment-resistant depression. *J. Humanist. Psychol.* 57, 520–564. doi: 10.1177/0022167817709585

Watts, R., and Luoma, J. B. (2020). The use of the psychological flexibility model to support psychedelic assisted therapy. *J. Contextual Behav. Sci.* 15, 92–102. doi: 10.1016/j.jcbs.2019.12.004

Watzl, S. (2022). "The ethics of attention: an argument and a framework" in *Salience*. ed. S. Archer. *1st* ed (London: Routledge), 193–212.

Wayment, H., and Bauer, J. (2017). "The quiet Ego: concept, measurement, and well-being" in *The happy mind: cognitive contributions to well-being The Happy Mind*: Cognitive Contributions to Well-Being, eds. M.D. Robinson and M. Eid (Cham: Springer International Publishing), 77–94.

Weinstein, N., Przybylski, A. K., and Ryan, R. M. (2009). Can nature make us more caring? Effects of immersion in nature on intrinsic aspirations and generosity. *Pers. Soc. Psychol. Bull.* 35, 1315–1329. doi: 10.1177/0146167209341649

Weiss, B., Nygart, V., Pommerencke, L. M., Carhart-Harris, R. L., and Erritzoe, D. (2021). Examining psychedelic-induced changes in social functioning and connectedness in a naturalistic online sample using the five-factor model of personality. *Front. Psychol.* 12:749788. doi: 10.3389/fpsyg.2021.749788

Whiteley, E. (2022). "Harmful salience perspectives∗" in *Salience*. ed. S. Archer. *1st* ed (London: Routledge), 193–212.

Whitfield, H. J. (2021). A Spectrum of selves reinforced in multilevel coherence: a contextual behavioural response to the challenges of psychedelic-assisted therapy development. *Front. Psych.* 12:727572. doi: 10.3389/fpsyt.2021.727572

Wiese, W. (2019). Explaining the enduring intuition of substantiality: the phenomenal self as an abstract "salience object". *J. Conscious. Stud.* 26, 64–87.

Winkelman, M. (2001). Psychointegrators multidisciplinary perspectives on the therapeutic effects of hallucinogens. *Complement. Health Pract. Rev.* 6, 219–237. doi: 10.1177/153321010100600304

Winkelman, M. (2017). The mechanisms of psychedelic visionary experiences hypotheses from evolutionary psychology. *Front. Neurosci.* 11:539. doi: 10.3389/fnins.2017.00539

Wong, P. (2016). Meaning-seeking, self-transcendence, and well-being. *Logotherapy and Existential Analysis Cham: Springer International Publishing (Logotherapy and Existential Analysis: Proceedings of the Viktor Frankl Institute Vienna), ed. Betthyany. Cham: Springer International Publishing*, 311–321.

Wright, J. R. (2005). Transcendence without reality. *Philosophy* 80, 361–384. doi: 10.1017/S0031819105000343

Yaden, D. B., Haidt, J., Hood, R. W. Jr., Vago, D. R., and Newberg, A. B. (2017). The varieties of self-transcendent experience. *Rev. Gen. Psychol.* 21, 143–160. doi: 10.1037/gpr0000102

Yaden, D. B., and Newberg, A. B. (2022). "Transformations" in *The varieties of spiritual experience: 21st century research and perspectives*. eds. D. B. Yaden and A. Newberg (Oxford: Oxford University Press)

Yaden, D., Jonathan, I., Kelley, S., Johannes, E., Yukun, Z., George, V., et al. (2016). The overview effect awe and self-transcendent experience in space flight. *Psychol. Conscious. Theory Res. Pract.* 3, 1–11. doi: 10.1037/cns0000086

Yaden, D. B., Yukun, Z., Kaiping, P., and Andrew, N., et al. (2020). *Rituals and practices in world religions: cross-cultural scholarship to inform research and clinical contexts*. Cham: Springer *5*. (religion, spirituality and health: a social scientific approach).

Zhang, J., Piff, P., Iyer, R., Koleva, S., and Keltner, D. (2014). An occasion for unselfing: beautiful nature leads to prosociality. *J. Environ. Psychol.* 37, 61–72. doi: 10.1016/j.jenvp.2013.11.008

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A case-study evaluation of the "Copenhagen Music Program" for psilocybin-assisted therapy

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In a recent article, Messell and colleagues provide a curated list, the "Copenhagen Music Program for Psilocybin". We test their music program with an experienced Indigenous therapist/psychonaut on a 3.5 gram psilocybin journey. Based on comments provided by the Indigenous therapist, we find the program contains musical choices that evoke specific colonial and religious contexts. We also find the program psychologically and emotionally coercive, meaning it is intended to contain the experience by forcing the individual on a specific experiential pathway. We conclude the program is not suitable for Indigenous travelers and suggest that curation of a wider variety of playlists, and music more in line with traditional shamanic practices, might be a better approach to psychedelic curation.

KEYWORDS

case reports, guided imagery, music-informed psychedelic therapy, psychedelic therapy, psycholytic therapy

Introduction

It has been long known that music is a critical factor influencing the psychological and emotional direction a psychedelic session takes (Gaston and Eagle, 1970; Bonny and Pahnke, 1972; Barrett et al., 2017, 2018; Kaelen et al., 2018). In the journal *Frontiers in Psychology*, in the research topic section entitled The *Psychotherapeutic Framing of Psychedelic Drug Administration*, authors Messell et al. (2022) provide a curated list of music (The Copenhagen Music Program for Psilocybin) that they feel accurately supports the underlying three-phase nature of the experience (Stenbæk et al., 2021). Their article offers procedural steps to creating such a list with the explicit aim being not to evaluate their own program but "to inspire others in their endeavors to create music programs for psychedelic interventions, while proposing that an informed music choice may support the therapeutic dynamics during acute effects of psilocybin" (Messell et al., 2022, para. 1).

Before approaching the task of selection, they set for themselves four criteria for music selection, that "(1) the music should reflect the intensity profile of a medium/high dose psilocybin, (2) the music should present cultural diversity of styles and genres, (3) vocal music pieces should avoid familiar languages, and (4) t*he music should avoid direct religious connotations*" (Messell et al., 2022, p. 2: italics added). As further guidance, they also note that "music which resonates with the patient's experiences supports self-exploration," that "liking the presented music" promotes safety and companionship, and that "openness to and liking the presented music. Correlate[s] with the intensity of acute psychoactive effects of

psilocybin and with better antidepressant treatment outcome" (Messell et al., 2022, p. 2). After noting these important factors, they select a methodology for assessing the meaning in music (Hevner, 1936) and then individually and collectively set down to provide "meaningful sequences for the different sub-phases" of the psychedelic experience (Messell et al., 2022, p. 5).

Evaluation

We evaluated the resulting "Copenhagen Program" with a case-study. An Indigenous female therapist, a member of our research and therapy team, and an experienced psychonaut with several decades of racial, sexual, and relationship trauma, ingested a 3.5 gram dose of dried Psilocybin mushrooms. The original goal of the experience, which was conducted in a specially designed, oft-used, sound-insulated specially designed space in our home, was personal and professional exploration of the effect of a high-dose psilocybin session. *There was no original intent to evaluate the Copenhagen program*, just to use it to enhance the experience, as the authors of the program (via their references to research indicating that music supports "self-exploration," "safety and companionship," intensity, and the ability to surrender and accept) implied that it might. Of course, as the authors of the Copenhagen Program suggested, their selection of music choices might not be appropriate in all cases. We were aware upfront that there may be issues, that the individual may not appreciate the music choices, that they may be triggering, but because our traveler was quite experienced with entheogenic substances, and because they had already accomplished a considerable amount of personal healing and reflection, we were not at all concerned over the potential for a disjunctive experience. We knew from experience that if there were issues they would be identified *in situ*, corrected, and the experience would continue. Our only hypothesis was that the music would provide a pleasant and fruitful variation on past experiences. Following ingestion, and at the first sign of psychological and emotional affect, we started the music program—about 30 min after ingestion.[1]

Unfortunately, the initial experience did not go well. The individual did not like the first pieces in the list, finding them "trite and inappropriate," and generally resisting the music's influence, as is sometimes the case (Kaelen et al., 2018). Thinking this distaste might reflect only the first few pieces, we quickly moved forward in the list, selecting the song "O magnum mysterium." This, again, seemed a poor choice. The individual made critical comments on this piece, pointing out how it immediately placed her in the pews of a Catholic Church, a place where she, as an Indigenous victim of European colonization, had no desire to be. Still attempting to find some utility in the list, we randomly selected several additional pieces including "Dido and Aeneas" and the "Hymn of the Cherubim," a piece with a Christian religious reference in the title, but again these pieces put the individual in the middle of a colonial religious and cultural framework. Continuing with our test, we then intentionally selected songs we felt would not evoke a known colonial frame, like "Om Namah Shivaya." Once again the individual noted the inappropriate nature of a selection of Indian music, rejecting this choice as silly New Age appropriation. Her rejection was rooted in the awareness that new age spirituality is a commodified spirituality stripped of substance and turned exclusively toward the generation of private profit (Carrette and King, 2008). As our test progressed, the individual made additional comments concerning the jarring shifts of styles and continual and uncritical evocation of colonial culture. At the point where we found an Indigenous piece ("Calling the Other"), colonial undertones had been identified and trust in the program had been destroyed, leaving the Indigenous-themed selection completely out of place.

Unfortunately, we could not get through the list. Upon brief reflection during the experience, the individual suggested the soundtrack for the movie *Arrival*, a favorite movie of hers. It did not take long for our traveler to note, in contradistinction to the Copenhagen list, the gently evocative atmospheric nature of the soundtrack, so we immediately put that on loop for the duration of the journey. This *in situ* music choice provided a much better musical selection, immediately shifting the session, putting it back on an appropriate track, and allowing the individual to benefit from the rest of the experience.

Context is key

As the authors of the curated list point out, music choice can amplify intercultural (and we might add intellectual/academic) power dynamics. This is exactly what happened during the experience. Several pieces in the curated list evoked and amplified colonial cultural paces, simultaneously invoking awareness of colonial institutions and colonial realities while putting our traveler smack dab in its ideological spaces. This disrupted the flow and undermined the journey. There was also the issue with jarring shifts of culture, genre, and style which also impacted the journey, repeatedly drawing the individual out of their experience.

Jarring shifts of style and insertion into colonial spaces were not the only problems with the list. In a subsequent debrief, the individual noted she was made immediately uncomfortable with the music which she felt was trying to force her to have a certain type of connection experience. This conclusion is somewhat surprising given that the Guided Imagery and Music (GIM) method inspired the author's work (Bonny, 2002; Grocke, 2019). This inspirational method was developed by Bonny after she experienced a powerful mystical flow experience (Bakker, 2005) while playing violin at a social event. Her experience led to several insights, including a deeper appreciation for non-ordinary states of

1 One reviewer of this article expressed concern that we were not more critical and cautious in our approach, or that, given the Indigenous background of the individual, that our hypothesis was that the experience would be positive and fruitful. The concerns may be coming from an assumption that our practitioner might have been put in danger by listening to some untested music. This would be a valid concern if this was a therapy client, or someone with minimal experience with psychedelics, but it wasn't. This was an experienced psychonaut who was only *bothered* by the music choices. The music had no real power over this person, which is clear when you consider the chain of comments and criticism as we navigating the Copenhagen program. This person was not freaking out. There was no panic here, nor could there have been. There was no more danger here than there is when an able bodied child with a decade of walking experience walks to the store. That said, we would never had used this program with a naive traveler without a detailed intake and prior discussion of music choices, even in an experimental way.

consciousness, the realization that she needed personal healing, *and* the realization that music, coupled with progressive Humanistic therapies, could facilitate this healing not only for herself but for others as well (Clark, 2002). She moved on to work with Pahnke and Grof where she consulted with researchers and helped choose music for LSD sessions (Clark, 2002). Bonny and Pahnke (1972) eventually published an article where they indicated music to be a crucial variable in the psychedelic process. Later, she developed the GIM program as a way to facilitate transformative experiences without the use of psychedelics (Grocke and Wigram, 2007), to "guide" an individual and get them "where they need to go" (Messell et al., 2022, p. 2). The explicitly stated intentions of GIM founders is not to direct the process but to leave it open to client direction, to trust the client's unconsciousness, to support their "inner radar" (Grof, 2016) and to allow it to regulate itself. As Bonny notes in the "basic Premises of BMGIM," all insight and healing comes from within (Clark, 2002). In this process the music selection is not intended to be coercive or rigid. The guide is expected to actively empathize with the traveler and actively modify the music program *in situ* as necessary to support the individual's own direction (Clark, 2002).

The progressive intent of GIM founders and practitioners begs the question, why was this program experienced as coercive? The simple answer is that the coercion is baked in, though not intentionally so. The constructors of early psychedelic methodologies, the individuals involved in the development of Bonny method, were all of white Europe lineage. The theoreticians and mystics selected to ground the theory were also white. Bonny drew inspiration and nomenclature from Western psychologists like Maslow and Western mystics like Teresa of Avila and Evelyn Underhill (Bruscia and Grocke, 2002). If that is not sufficient to make the bias obvious, she was married to a theologically liberal preacher whose beliefs she resonated with (Clark, 2002). And it is not just the Western religious/mystical frame that we speak of here. Bonny and other psychedelic pioneers wrote at a time where European and capitalist perspectives were thoroughly hegemonic. Then, the mainstream accepted the good nature of the capitalist and his system just as one accepted the good nature of the priest and his Church. There was no questioning these perspectives within the mainstream. They were simply accepted as true. Therefore, approaches and methods constructed at that time were constructed within white-supremacist European rubrics which cast the ideal mystical and transformative experience within hegemonic Capitalist friendly, European-rooted frames. We anecdotally confirm this by browsing the appendices of the book *Guided Imagery and Music* where we find, not surprisingly, lists of Western music with consistent Western religious motifs (Bruscia and Grocke, 2002).

It would seem that, despite wishful claims to the contrary, music lists inspired by GIM work are shaped in ways that may not be immediately obvious to those working within these frames. There is no nefarious intent here. Your average liberal academic assumes that the sanitized Western-type mystical experiences, the standard Western scientific systems, and standard Western economic systems are superior to Indigenous systems (Sosteric, 2022). Why wouldn't your average white, European researcher take an unquestioning look to the original GIM lists for inspiration? Why wouldn't you use the music of upper-class Christian composers to guide the journey. Why wouldn't you assume that the mystical-sounding Church organs of Western music practice were sufficient to elicit healing experiences? The whole thing is very Western, which is not to say that Western-type mystical experiences are not beneficial, just that unexamined ideological influences shape the development of music programs in Western ways, which in turn shapes the experience. And while your average Sunday-go-to-meeting white person might not experience a Church organ or modal music as coercive, that's clearly not the case with those operating outside the colonial box. For them, the music program may be experienced as coercive. This may be viewed as an overstatement by some. As one reviewer suggested, it is not about coercing an experience, it is about providing a vehicle: "The music is a vehicle, and the listener's consciousness is, ideally, the driver at the wheel." It may be the case that the music *is* a vehicle, but one needs to keep in mind that not all vehicles are created equal. Some vehicles are designed for speed, some for off-road experiences, and some for destruction and war. It very much matters who built the vehicle and what its intended use are. A horse will get you places a car could never go.

Containment

While it is important to understand that GIM programs are European Christian programs, this does not go far enough. It is also important to also understand that Christian mysticism and Western researchers influenced by patriarchal, capitalist, European hegemonic frames are functioning as purveyors of containment, reducing mystical experience from something much larger and more expansive to something much smaller and safer, for the *status quo*. These statements might sound odd to some, particularly as these experiences can expand one to the size of the universe, but it is not so odd when we realize that in addition to connecting one, in a contemplative, way with god, psychedelic experiences can also be highly emotive, sexual, and can lead to progressive insight, left-ward political shifting, ecological insight, and even revolution (Nour et al., 2017; Sosteric, 2018). Recall the revolutionary music of the sixties was rooted in psychedelic experience (Gilmore, 2016), or Dr. Timothy Leary telling people to "question authority" and "Tune in, turn on, and drop out" of the system. LSD and other psychedelics continue to fuel musical inspiration and development (Koroma, 2015; Music-News.Com, 2017). This aspect of psychedelic experience, the facilitation of critical political and ecological insight, action, and transformation, is at least as real and legitimate a goal for psychedelic therapy and, given the sorry state of the planet, at least as desirable as "personal transformation" or the development of gratefulness or "psychological flexibility" (Noorani, 2021). Yet all these aspects of mystical experience, particularly the political aspects, are not on the radar of modern psychedelic researchers who, instead of encouraging political or ecological enlightenment, simply ignore aspects of the field they find consciously or unconsciously undesirable.

Perhaps these comments are surprising, even objectionable, but they shouldn't be. Colonized academics have been working to contain mystical experience to something pleasing to privileged white male European patriarchs ever since Stace dismissed aspects of the mystical experience that he, by his own admission, personally found distasteful, unpalatable, unbalanced, and irrational. In a

glaring section of his book entitled "Discounting Raptures, Trances, and Hyperemotionalism" (Stace, 1960, pp. 51–55), Stace dismisses as inferior, hysterical, sexually frustrated stupidity any uncontained experience he finds too emotional, blissful, or rapturous.

But there can be no doubt that the abnormal bodily states which mystics call rapture or trance do sometimes occur. They are mentioned here as being of interest, but the point to be made is that they are accidental accompaniments of mystical consciousness, by no means universal or necessary. They occur among the more emotional and *hysterical mystics* and not among those of the more calm, serene, and intellectual types. They cannot therefore be regarded as belonging to the universal core of mystical experiences.

The same is to be said of the frequently asserted connection between sex and the mystical life; and of the sex metaphors which some mystics—especially in the Christian and Islamic traditions—lard their descriptions.It may well be true, as Leuba suggests, that a main part of the motives of St. Catherine of Genoa and Madame Guyon was the sex frustration which they underwent." (Stace, 1960, pp. 52–53: italics added).

For Stace, the "correct" type of mystical experience is one that is "calm, serene, and unexcited," one that brings not anger or revolutionary fervor, but "blessedness, bliss, joy, peace" (Stace, 1960, p. 55) and, lest we forget, forgiveness, because certainly you always want to forgive your oppressors. Anything else is discarded. Stace has been hugely influential and we see the impact of his containment comments quite clearly when we survey the available instrumentation (Hood, 1975; Hodge, 2003; Delaney, 2005), which consistently fails to operationalize the "distasteful" aspects of mystical experience (Abrams, 2016). We also see this when we contrast the carefully constructed and suitably sanitized clinical experience currently under development by mainstream actors (Abrams, 2016; Noorani, 2021) with a more politically charged effort, one that might facilitate an experience that connects one to the land, that explodes the consequences of colonialism, that brings political insight, that points in the direction of the obvious tragedy of consumer capitalism and its wholesale destruction of the planet, or that encourages social and political resistance. Such an approach would not rely on politically sterile classical music, nor would it eschew the use of meaningful lyrics and would perhaps use songs like Lennon's "Working Class Hero" to bring awareness of toxic socialization (Sosteric and Ratkovic, 2016) or "The Trouble With Normal" by Bruce Cockburn. Such an experience would be more akin to the type of experiences common during the "uncontained" 1960s, experiences that lead to uncomfortable (for the accumulating class) political realizations and disruptive political actions which the "war on drugs" intentionally and effectively erased.

Copenhagen containment

In the above context, and given the feedback provided by the Indigenous practitioner, we can clearly see the coercive and containing (Noorani, 2021) elements of the Copenhagen program. The Copenhagen music program is designed to facilitate medicalization (Noorani, 2020) while containing experiences not only within restrictive regulatory frameworks (Noorani, 2021) but also to the type of perennial, a-sexual, a-political, passive, peaceful and personal type of experience that is comfortable for the patriarchal, Neo-liberal therapeutic frames which seek, through the management of collective subjectivity (McHoul and Grace, 1993; Guttin, 2005), to suppress problematic ecological or political insights and angry revolutionary responses by turning the individual within were they can then blame their problems not on systemic issues like sexism, racism, violent socialization, or the exploitative Capitalist system, but on too-rigid thinking, lack of gratefulness, sexual frustration, insufficient "peace," the absence of reason, or some other personal deficiency (Binkley, 2011). The coercive and containing nature of the program may not be immediately apparent to those working within Eurocentric frames, but it was obvious to our Indigenous psychonaut moments into the experience.

The authors of the Copenhagen article nod toward some of the issues identified above, suggesting their program might be criticized for being "too mechanistic" and for "not taking.the patient's choice of music into account." They also note that "When working with ethnic minorities or racial trauma.music choice can amplify intercultural power dynamics in the therapeutic relationship" (Messell et al., 2022, pp. 9–10). Anticipating these criticisms, they emphasize that "the effect of music must always be considered in relation to the listener's history, preferences and cultural and social context of the listening experience" (Messell et al., 2022, pp. 9–10). All this is good advice, but it does not go far enough. In addition to considering the listener's culture and history, white Europeans must also carefully consider their own history, which includes ongoing efforts to control the psychedelic/mystical experience. Proper attention here requires, at minimum, a certain level of sociological/political sophistication, a certain awareness of one's own socio-cultural location (does one operate in the mainstream?), and a certain acknowledgment of one's own cultural, often colonial, backgrounds and the biases and blind spots that these bring. Otherwise, we remain unconsciously complicit in ongoing efforts to control and contain human experience, a complicity that would be unfortunate given the remarkable potential of psychedelic therapy not only to heal, but to lead to social change and positive transformation.

It goes without saying, I suppose, that this critical self-reflection is important. Many specific demographics have been suppressed by the colonial systems that we often unwittingly represent, like women (Starhawk, 2011), or ethnic minorities who have been the subject of colonial and neo-colonial racism, or children who have been victimized by ecclesiastical predators. When you think about it, even privileged white males who have spent time in these institutions have been victimized. One of the authors of this paper is a *cis*-gender privileged white male, is still dealing with the trauma from childhood Catholic experiences and indoctrination. Even here it makes no sense to musically invoke Catholic frames.

Discussion

Given the comments in this paper, rather than selecting for diversity in culture, style, and genre, if one is going to curate a list at all, it may be more appropriate to curate spiritually, culturally, and politically specific trip-lists with a more internally consistent selection of genre and style. Rather than aiming for

the arid mystical experience preferred by a patriarch like Stace, perhaps we could aim, in addition to facilitating oneness and connection, for other targets, like facilitating political insight or connecting one ecologically with the land. Play lists like the short "Intentional Vibes," "The Breath – Psychedelic Playlist 1," Forest Sounds–Psychedelic Playlist 2," or "Relaxing Piano–Psychedelic Playlist #3" could be used when individuals are seeking stereotypical spiritual experience, but other lists could be developed as well, like an ecological list, which might include songs like Michael Jackson's "Earth Song," or a political list, which might include Michael Jackson's "They don't really care about us" or the Who's "Won't get fooled again." Curated lists like this would provide for a more ecologically valid set of options, more flexibility, and would put the power of choice more firmly in the hands of the participant rather than the psychedelic guides/researchers.

Speaking of putting the power into the hand of the person on the journey, even though curated lists of music are currently a thing in psychedelic therapy and research, all curated lists represent a containment of one type or another; all lists provide a specific vehicle with specific potential. As such, curated lists may not be the only way, or the best way, to approach the issue, particularly when using an approach like the GIM method which was developed within European colonial frames. Indeed, the coercion that underlies this approach may be in inherent conflict with the power of the psychedelic itself, with the individual's own healing powers (which manifest, according to Grof, via an individual's "inner radar" (Grof, 2016, p. 13) and with the more-than-human (MTH) beings which, according to Indigenous thinkers (Williams et al., 2022), help teach and heal. Indeed, the very idea of a curated list begs the question of cultural, political, and academic power. We need to be clear here. Curating a list of music enters the client immediately into an unequal power dynamic with the curators. This dynamic immediately privileges the curator and puts the power into their hands. Given this, perhaps we should be doing what Indigenous communities have been doing for many centuries with their shamanic practices, which is to use very simple music, drums, and atmospheric vocalizations that put the individual into a receptive space that persists throughout the journey. Setting such an auditory space would leave the power in the hands of the individual and would not force a traveler in a specific compass direction.

Note that the authors of the Copenhagen list suggest that there are times when distaste for the music expressed during a psychedelic session could be an issue of "transference" and "conflict," and that the best way forward might be to "support and encourage the patient to stay with the music and engage the conflict." This is certainly advisable in some cases; however, in the cultural and historical context of this study, this strategy would have been quite inappropriate. It would have reinforced centuries of colonial imposition (what do colonizers do but force their victims to engage with their cultural and political realities), undermined trust, "safety and companionship," and completely destroyed the experience. In an individual with less experience, the forced imposition of the list might even have undermined trust in the drug itself, or the therapists, since a naive individual would be unlikely to connect the dots between the colonial music choices and the negative experience. The only appropriate way forward here would be to attend to the listener's preferences and quickly select suitable musical alternatives.

We would also like to note that there is a need to shift burgeoning psychedelic methodology and research from a purely White-dominant medical/psychological framework to one that is critical, politically and sociologically sophisticated, *and* culturally inclusive (George et al., 2020). It is a relevant question whether authors would have curated a list of this nature had an Indigenous voice, or a sociologist, been included in the selection committee. It is reasonable to suggest that such inclusions (Williams et al., 2022) would have improved the committee's curation.

Finally, this case study should not be seen as a specific criticism of the Copenhagen group, GIM, or even mainstream psychology, although all are culpable. The real culprit here is the Eurocentric, science-centric ideologies which cast as superior European ways of thinking and doing and which, as a consequence, facilitate and enable restriction, sanitation, and containment of everything, including therapy and research (Gibson and Beneduce, 2017). When Stace sanitized the mystical experience, when he presented what *he* was comfortable with as *the* exemplar, he thought we was doing the right. He thought that way because his ideology, his white, male, patriarchal, capitalist way of thinking convinced him that emotions were a sign of weakness and that the only valid experience was a politically and emotionally contained one. The take home here is not that some people got this "wrong," but that that we all have to be more sensitive to our own biases and we all have to do a lot better job of unraveling the insidious influence of still powerful European hegemonic frames. To be clear, our target here is not Copenhagen or GIM specifically, but more generally the hegemonic European frames which dominate mainstream thinking and upon which GIM and Copenhagen rest. This is an important awareness. Would members of the Copenhagen team have selected the music they selected if they were aware of the conservative Christian roots of the GIM or the containing, mainstream nature of their activities? Would they have exercised more caution before releasing an untested program, would their warnings have been stronger, if they understood what their choices represented. We think not, which is why critical self and historical reflection is important, lest we contribute to the maintenance of a system that clearly has to go.

Finally, we would just like to highlight the fact that this paper represents a more general conversation between an Indigenous healer and the mainstream psychedelic research community. Comments in this paper come from an experienced Indigenous female therapist and psychonaut, one who immediately recognized the coercive "mainstream" flavor of the music and who rejected it as such. This rejection is not unreasonable. It fits well both with criticisms of modern psychedelic research which paint it as a containment effort designed to neutralize the political potentials of the experience *and* historical realities which did see uncontained usage lead to political insight and problematic (from the perspective of the accumulating classes) activation. Moving forward, it is up to individual researchers to decide whether they wish to submit to the containment agenda or pursue, dare we say, a more ecologically, psychologically, and spiritually valid approach to psychedelic experience and research.

Data availability statement

The datasets presented in this article are not readily available because these were case-study notes and not of general interest. Requests to access the datasets should be directed to MS, mikes@athabascau.ca.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

Author contributions

TS, MS, and GR contributed to the conceptual analysis and content to the manuscript, wrote sections of the document, and were involved in editing and in the analysis of playlists. All authors contributed to the article and approved the submitted version.

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References

Abrams, B. (2016). Development and evaluation of the Transpersonal Depth-Guided Imagery and Music (TD-GIM) inventory. *Nordic J. Music Therapy* 25, 32–56. doi: 10.1080/08098131.2015.1008557

Bakker, A. B. (2005). Flow among music teachers and their students: the crossover of peak experiences. *J. Vocat. Behav.* 66, 26–44. doi: 10.1016/j.jvb.2003.11.001

Barrett, F., Preller, K., and Kaelen, M. (2018). Psychedelics and music: neuroscience and therapeutic implications. *Int. Rev. Psychiatry* 30, 350–362. doi: 10.1080/09540261.2018.1484342

Barrett, F. S., Robbins, H., Smooke, D., Brown, J. L., and Griffiths, R. R. (2017). Qualitative and quantitative features of music reported to support peak mystical experiences during psychedelic therapy sessions. *Front. Psychol.* 8:1238. doi: 10.3389/fpsyg.2017.01238

Binkley, S. (2011). Happiness, positive psychology and the program of neoliberal governmentality. *Subjectivity* 4, 371–394.

Bonny, H. (2002). *Music and Consciousness: The Evolution of Guided Imagery and Music*. New Braunfels, TX: New Braunfels Barcelona Publishers.

Bonny, H. L., and Pahnke, W. N. (1972). The use of music in psychedelic (LSD) psychotherapy. *J. Music Therapy* 9, 64–87. doi: 10.1093/jmt/9.2.64

Bruscia, K. E., and Grocke, D. E. (eds) (2002). *Guided Imagery and Music: The Bonny Method and Beyond*. New Braunfels, TX: Barcelona Publishers.

Carrette, J., and King, R. (2008). *Selling Spirituality: The Silent Takeover of Religion*. London: Routledge.

Clark, M. (2002). "Evolution of the bonny method of guided imagery and music," in *Guided Imagery and Music: The Bonny Method and Beyond*, eds K. E. Bruscia and D. E. Grocke (New Braunfels, TX: Barcelona Publishers).

Delaney, C. (2005). The spirituality scale: development and psychometric testing of a holistic instrument to assess the human spiritual dimension. *J. Holistic Nursing* 23, 145–167.

Gaston, E. T., and Eagle, C. T. Jr. (1970). The function of music in LSD therapy for alcoholic patients. *J. Music Therapy* 7, 3–19.

George, J. R., Michaels, T. I., Sevelius, J., and Williams, M. T. (2020). The psychedelic renaissance and the limitations of a White-dominant medical framework: a call for indigenous and ethnic minority inclusion. *J. Psychedelic Stud.* 4, 4–15. doi: 10.1556/2054.2019.015

Gibson, N. C., and Beneduce, R. (2017). *Frantz Fanon, Psychiatry and Politics*. Lanham, MD: Rowman & Littlefield.

Gilmore, M. (2016). *Beatles' Acid Test: How LSD Opened the Door to "Revolver"*. Available online at: https://www.rollingstone.com/feature/beatles-acid-test-how-lsd-opened-the-door-to-revolver-251417/ (accessed February 12, 2023).

Grocke, D., and Wigram, T. (2007). *Receptive Methods in Music Therapy: Techniques and Clinical Applications for Music Therapy Clinicians, Educators and Students*. London: Jessica Kingsley Publishers.

Grocke, D. E. (2019). *Guided Imagery and Music: The Bonny Method and Beyond, Barcelona Publishers*. New Braunfels, TX: Barcelona Publishers.

Grof, S. (2016). Psychology for the future: lessons from modern consciousness research. *Spiritual. Stud.* 2, 3–36.

Guttin, G. (2005). *Foucault: A Very Short Introduction*. Oxford: Oxford University Press.

Hevner, K. (1936). Experimental studies of the elements of expression in music. *Am. J. Psychol.* 48, 246–268. doi: 10.2307/1415746

Hodge, D. R. (2003). The intrinsic spirituality scale: a new six-item instrument for assessing the salience of spirituality as a motivational construct. *J. Soc. Service Res.* 30, 41–61. doi: 10.1300/J079v30n01_03

Hood, R. W. (1975). The construction and preliminary validation of a measure of reported mystical experience. *J. Sci. Study Religion* 14:29.

Kaelen, M., Giribaldi, B., Raine, J., Evans, L., Timmerman, C., Rodriguez, N., et al. (2018). The hidden therapist: evidence for a central role of music inpsychedelic therapy. *Psychopharmacology* 235, 505–519. doi: 10.1007/s00213-017-4820-5

Koroma, S. (2015). *A$AP Rocky Talks About the Influences Behind "LSD"*. Available online at: https://time.com/4100171/asap-rocky-lsd/ (accessed February 12, 2023).

McHoul, A., and Grace, W. (1993). *A Foucault Primer: Discourse, Power and the Subject*. London: Routledge.

Messell, C., Summer, L., Beck, and Stenbaek, D. S. (2022). Music programming for psilocybin-assisted therapy: guided imagery and music-informed perspectives. *Front. Psychol.* 17:873455. doi: 10.3389/fpsyg.2022.873455

Music-News.Com. (2017). *Wayne Coyne: "Miley Cyrus has done acid plenty"*. Available online at: https://www.music-news.com/news/UK/102703/Wayne-Coyne-Miley-Cyrus-has-done-acid-plenty (accessed February 12, 2023).

Noorani, T. (2020). Making psychedelics into medicines: the politics and paradoxes of medicalization. *J. Psychedelic Stud.* 4, 34–39. doi: 10.1556/2054.2019.018

Noorani, T. (2021). Containment matters: set and setting in contemporary psychedelic psychiatry. *Philosophy Psychiatry Psychol.* 28, 201–216.

Nour, M. M., Evans, L., and Carhart-Harris, R. L. (2017). Psychedelics, personality and political perspectives. *J. Psychoactive Drugs* 49, 182–191. doi: 10.1080/02791072.2017.1312643

Sosteric, M. (2018). Mystical experience and global revolution. *Athens J. Soc. Sci.* 5, 235–255. doi: 10.30958/ajss.5-3-1

Sosteric, M. (2022). *What is Religion*. San Francisco, CA: Academia.edu.

Sosteric, M., and Ratkovic, G. (2016). *Toxic Socialization*. San Francisco, CA: Academia.edu.

Stace, W. T. (1960). *Mysticism and Philosophy*. New York, NY: Macmillan.

Starhawk. (2011). *Spiral Dance, The—20th Anniversary: A Rebirth of the Ancient Religion of the Goddess: 20th Anniversary Edition: Starhawk*. San Francisco, CA: Harper One.

Stenbæk, D. S., Madsen, M. K., Ozenne, B., Kristiansen, S., Burmester, D., Erritzoe, D., et al. (2021). Brain serotonin 2A receptor binding predicts subjective temporal and mystical effects of psilocybin in healthy humans. *J. Psychopharmacol.* 35, 459–468. doi: 10.1177/0269881120959609

Williams, K., Romero, O. S. G., Braunstein, M., and Brant, S. (2022). Indigenous philosophies and the "Psychedelic Renaissance.". *Anthropol. Consciousness* 33, 506–527. doi: 10.1111/anoc.12161

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Confronting the figure of the "mad scientist" in psychedelic history: LSD's use as a correctional tool in the postwar period

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Since reports about CIA-funded LSD studies came out in the 1970s, psychedelic drugs have invoked images of unethical experimentation and "mad scientists" in the public imagination. Even now, as the stigma surrounding psychedelics diminishes in the 21st century, the figure of the "mad scientist" continues to occupy a space in what Ido Hartogsohn calls the "collective set and setting," the larger framework of cultural understandings that shape how individuals experience psychedelic drugs. Scientists and humanities scholars who study these drugs have responded to this issue by drawing boundaries between those who used psychedelics carefully and those who used them ignorantly. Yet these boundaries were not always so clear in the past. Drawing on historical examples of LSD's use as a *correctional tool* in Canada, I show how enthusiasm about the drug's potential led several experienced and knowledgeable psychedelic therapists to use it on vulnerable populations in diverse institutional settings, such as correctional facilities. These examples reveal how the institutional context of modern industrial societies shaped the application of psychedelic therapy in the past and suggest that today's therapists need to carefully consider how this broader context impacts their work.

KEYWORDS

psychedelic history, LSD, prisons, Canada, mad scientists

1. Introduction

In 2001, The *Ottawa Citizen*, an influential Canadian newspaper, ran an article titled "LSD Experiments: How a Mad Scientist Went Unchecked." The article described the recent controversy surrounding the history of experimentation in Canadian correctional facilities, which emerged after several former inmates from the Kingston Prison for Women accused the prison's psychologist of giving them lysergic acid diethylamide (LSD) in the early 1960s. Investigation into these accusations revealed that the Chief Psychologist at the prison, Mark Eveson, began a pilot study in 1961 that explored whether the drug could help in the rehabilitation of 23 inmates. The article went on to compare Eveson's use of LSD to the psychiatrist Ewen Cameron's CIA-funded "psychic driving" experiments in Montreal, noting that Cameron was "the closest thing Canada has produced to a real-life mad scientist" (Bronskill and Blanchfield, 2001).

As this news article reveals, psychedelic drugs have been closely associated with "mad scientists" and unethical experimentation in the public imaginary. This association emerged in the late 1970s, when the American journalist John Marks wrote about a network of CIA-funded researchers who covertly explored LSD as a weapon and truth serum (Marks, 1979). Over the following decades, more stories of LSD experimentation on vulnerable populations made

headlines, and by the end of the 20th century, psychedelics were not only closely tied to drug abuse, but also with abuse of subjects in a scientific context (Dyck, 2008, p. 4).

Even now, as cultural attitudes toward psychedelics are changing, the image of the mad scientist continues to occupy a space in what Ido Hartogsohn has called the "collective set and setting," the larger framework of cultural understandings that shape how individuals experience these substances (Hartogsohn, 2020). In addition to drug laws, fashion trends, and economic attitudes, stories about abusive scientists and unethical experimentation influence how we view psychedelics. This is especially evident while working in the humanities, where presentations about the history of LSD are often met with questions such as, "What about MK-ULTRA and the CIA?"

As humanities scholars who study psychedelics, what should we do about this image of the mad scientist that continues to lurk in the background of our collective set and setting? Those at the forefront of scientific investigation into psychedelics have their own approach to this issue: boundary drawing. Sociologists and anthropologists of science have shown that today's psychedelic scientists carefully distance themselves from the irresponsible or ethically dubious actions of past psychedelic icons, such as Timothy Leary (Corbin, 2012; Langlitz, 2013; Giffort, 2020). By doing so, current researchers maintain a respectable image and help bring psychedelic science into the mainstream. Humanities scholars often adopt a similar strategy. Historians, for example, have challenged the association between LSD and unethical research by drawing boundaries between pioneers who used the drug properly and researchers who used it naively. From this perspective, the psychedelic therapists who paid attention to the concepts of "set and setting" were much different from those who used LSD in unethical contexts (Lee and Shlain, 1985; Dyck, 2008; Barber, 2018; Oram, 2018; Hartogsohn, 2020).

In this paper, I complicate these neat divisions between "pioneers" and "mad scientists" by looking at LSD's history as a *correctional tool*. While the case of Timothy Leary's Concord Prison Experiment is well known, a closer look at the history of LSD reveals that the drug's use in correctional facilities was actually quite widespread in North America and Europe during the postwar period. Drawing on examples from Canada, I show how enthusiasm for LSD's ability to produce "rapid personality change" (Unger, 1963, p. 119) led many psychedelic pioneers to consider its use in diverse institutional contexts, which often involved vulnerable populations. In correctional settings, this experimentation was usually encouraged by prison reform movements that emphasized the goal of rehabilitation over mere custodial care. As a means of effectively and quickly reshaping personality, LSD therapy fit in with this goal.

2. LSD as a correctional tool in 1960s Canada

2.1. Duncan Blewett and Nicholas Chwelos at the Regina prison in Saskatchewan

The most often cited example of carefully done LSD therapy during the 1950s took place in Saskatchewan, Canada, where a group of psychiatrists developed the "psychedelic" method. Building on the concept of 'psychedelic' that originated with Humphry Osmond, several researchers in the province developed a sophisticated and highly methodical way of using LSD and similar compounds to help their patients have profound and transformative experiences of self-acceptance (Dyck, 2008). This approach was explained in detail in a 1959 handbook written by Duncan Blewett and Nicholas Chwelos, who both worked for Saskatchewan's Department of Psychiatric Research.

The handbook outlined the kinds of reactions that LSD produced and provided instructions on how therapists could guide patients toward the most therapeutically useful ones. The idea was to help patients achieve "psychedelic reactions," which provided insight about underlying attitudes and values. But if the drug experience was met with resistance, patients would fall into "escape reactions" or "psychotomimetic reactions," and not gain any benefit. To increase the chances of psychedelic experiences, Blewett and Chwelos explained that patients needed to be carefully prepared for the experience beforehand and develop a close relationship with the therapist. They also stressed that LSD sessions should be conducted in a comfortable setting and highlighted the value of using various props to guide the experience, such as music, paintings, and flowers (Blewett and Chwelos, 1959).

With this approach, the Saskatchewan group found significant success in patients struggling with alcohol use. By the early 1960s, the results were so promising that the provincial government endorsed psychedelic therapy as a new and effective treatment for alcoholism. The method, as detailed in Blewett and Chwelos' handbook, became influential among those working with LSD and spread down the west coast and throughout the US.

In a 1958 report to the provincial government, Blewett explained that such success "warrants the use of LSD on a much wider scale." (Blewett, 1958, p. 1). At this time, he and Chwelos were already working on a pilot study that examined the effectiveness of psychedelic therapy for a group of young, repeat offenders at the local prison in the city of Regina. Roughly 30 males, ranging from adolescence to 23 years old, were involved in the study, and their experiences were documented through a questionnaire following the sessions. As Blewett explained in the report, the young offenders were not responding as positively as other subjects. While about 75 percent did seem to have a psychedelic reaction and reported that they felt more affection and trust toward others during the experience, many also attempted to "fight off the drug effects" and "appeared to be much more confused, tense and suspicious" than other groups (Blewett, 1958, p. 41–47). In short, Blewett felt that the psychedelic method "offers less to prisoners." (Blewett, 1958, p. 43).

But this lack of response, he suggested, was largely due to the environment in which the inmates lived and the lack of resources to effectively carry out the study. Blewett noted that the living situation at the prison was not conducive to maintaining the insights found while under LSD. If inmates did come to reassess their values and attitudes during the sessions, they returned afterwards to a social situation in which the "values are almost diametrically opposed to those…encountered in the LSD experience" (Blewett, 1958, p. 55). This issue was compounded by the limitations imposed on the study by insufficient time and staff. Ideally, Blewett pointed out, individuals would have several hours of preparatory interviews before and after a psychedelic session and receive as many sessions as needed to achieve progress. However, such measures had "not been feasible" in the pilot study at the prison (Blewett, 1958, p. 56).

With these problems in mind, Blewett suggested that a "thorough reorganization of procedures" was necessary to improve the use of the

psychedelic method in the prison context. This required dedicating more effort to preparing those involved in the program for the experience, as well as working with them afterwards. In this way, therapists could help "re-inforce the positive aspects of the experience through follow-up." In addition, Blewett stressed that the number of psychedelic sessions should be tailored to the needs of each individual, and not determined in advance by the study protocol (Blewett, 1958, p. 60).

2.2. Mark Eveson, Florence Nichols, and the Kingston Prison for Women

Another pilot study that assessed the value of using LSD in a correctional context was conducted by the psychologist Mark Eveson at the Kingston Prison for Women in Ontario. As part of a new focus on rehabilitation, Eveson was hired as the prison's first Chief Psychologist in 1961, following his completion of a postgraduate degree in psychology and psychiatry at the nearby Queens University. At this time, the majority of inmates at the prison were serving sentences relating to narcotic addiction. As a result, Eveson's primary focus was on developing new methods and facilities to address this problem. However, the prison was overcrowded, with about 110 inmates, and the treatment staff resources were limited to him, along with a social worker and a part time psychiatrist. Eveson recognized that many other prisons were in similar circumstances and emphasized the need to "seek newer and more economic forms of treatment" (Eveson, 1963, p. 25). LSD therapy, he proposed, presented the "possibility of ending criminal involvement" in "approximately eight hours," a fact that should "arouse intense interest in all concerned in rehabilitation." (Eveson, 1963, p. 27).

Eveson began the pilot study in early 1961 and ended up giving LSD to 23 women, some of whom were there for addiction related charges. Although he had some familiarity with the drug, he recruited a psychiatrist who was experienced in its therapeutic use to teach the prison staff how to work with it effectively. This psychiatrist was Florence Nichols, a Canadian missionary who had several years of experience with LSD (Gilmore and Somerville, 1998, p. 122). Nichols had just returned from England, where she learned about LSD therapy through Frank Lake, a fellow medical missionary who began using the drug to help patients relive early infancy and birth. Lake encountered the drug while working under the British psychiatrist and LSD therapy pioneer, Ronald Sandison (Lake, 1966, p. xix). After six months of refining her therapeutic technique in England, Nichols returned home to Canada where she started her own practice and gained familiarity with the psychedelic approach developed in Saskatchewan (Barber, 2018, p. 126–127).

The first inmate from the prison to receive LSD was Christine Bauman, a 30-year-old who was serving a five-year prison sentence for fraud. Like most others in the study, Bauman was taken to a nearby psychotherapy center for the LSD session. Nichols gave her a total of 450 micrograms of LSD in one day, followed by an injection of Ritalin to stimulate the experience. During the session, Nichols used lights, music, and various objects to direct the drug reaction. Bauman later reported that the experience was terrible, and that it negatively impacted her personality (Gormerly, 1968). Nevertheless, Eveson and the staff continued with 22 other inmates and planned a larger study.

Eveson had published a brief description of this work in 1963, but the study did not generate controversy until the 1990s, when one of the inmates who was given LSD, Dorothy Proctor, submitted a complaint of mistreatment to Correctional Services Canada. Proctor claimed that she had not consented to participating in the study and that she was given LSD on one occasion in solitary confinement at the prison (Gilmore and Somerville, 1998, p. 11; Proctor and Rosen, 1994). The federal government sponsored an investigation into her allegations, and Proctor launched a lawsuit against Eveson and the Canadian government that was later settled out of court.

2.3. Gary Maier and the social therapy unit at Oakridge

A final example of LSD's use as a correctional tool took place at the Oakridge maximum-security psychiatric hospital in Penetanguishene, Ontario. From the late 1960s to the mid-1970s, psychiatrists at Oakridge used LSD to treat men who had been convicted of crimes relating to violent behavior or sexual abuse.

Oakridge was built in the 1930s as a custodial facility for men labeled "criminally-insane." These men, who were later diagnosed as "psychopathic" or "schizophrenic," typically remained at Oakridge for life, and by the 1960s roughly 250 of them lived there. In 1965, in an attempt to move Oakridge beyond mere custodial care, the superintendent launched a therapeutic program that focused on rehabilitating inmates and integrating them back into society (Nielsen, 2000, p. 165). Oakridge's "Social Therapy Unit" was at the center of these efforts. Established by the psychiatrist Elliot Barker, the Social Therapy Unit used intensive encounter therapy to break down psychopathic defenses and help inmates make meaningful connections with others. One technique to facilitate this aim was to use what Barker referred to as "defense-disrupting drugs": scopolamine, sodium amytal, and LSD (Nielsen, 2000, p. 182–183). The program intensified in 1967 when Barker introduced "The Total Encounter Capsule," an 8×10 steel room in which groups of inmates stayed for days on end. On some occasions, to promote "genuine encounter between persons," the inmates would sit in the capsule while naked or after taking LSD (Barker and McLaughlin, 1977, p. 355).

In 1972, the Canadian psychiatrist Gary Maier took over as director of the Social Therapy Unit. Maier had completed a medical degree at the University of Western Ontario several years earlier and had been working at Oakridge as part of his psychiatric residency. While he was enthusiastic about the program that Barker set up, he had a much different perspective on LSD. Whereas Barker understood LSD as a defense-disruptor, Maier used it to "open the door from the inside," and he shifted the program at the Social Therapy Unit to reflect this perspective (Nielsen, 2000, p. 222–223). Indeed, Maier was well versed in spiritual and countercultural perspectives on psychedelics. He had gone through his own LSD experiences, which gave him an "affirmation of the inner aspect," and he did some training with the influential psychedelic pioneer, Stanislav Grof (Marshall, 1976).

A year after taking over the Social Therapy Unit, the Canadian government licensed Maier to continue using LSD at Oakridge, and sent him 20,000 micrograms of the drug, the same amount it sent to Barker in 1967 (Maier et al., n.d., p. 4). For the new LSD program, Maier drew on the work of Grof to "facilitate an 'ego death-rebirth' experience." He also focused on developing a therapeutic milieu on the ward to help inmates incorporate the "being values" (eg Maslow's values of truth, wholeness, beauty) that they experienced while under

LSD (Maier et al., n.d., p. 5). Inmates over the age of 18 were "permitted to volunteer" for the program. Those who became involved were put into pairs and then underwent eight weeks of preparation before taking LSD, which included learning about the drug's effects and the "experimental nature" of the therapeutic approach. In addition, to create a beneficial "head space" for the experience, Maier provided the pairs with a reading list about psychedelics, and they spent "approximately five hours a day" discussing works by authors such as Carlos Castaneda, John C. Lilly, Aldous Huxley, and Timothy Leary (Maier et al., n.d., p. 8–10).

After this preparation, the LSD sessions took place in the Total Encounter Capsule along with Maier and the other member of the pair. Before the session started, Maier used relaxation techniques and "group chanting" to encourage an "atmosphere of trust and warmth" (Maier et al., n.d., p. 15). Experiences tended to fluctuate between periods of relaxation and agitation. After several hours, Maier left the Capsule, but the other member remained "as the main support for the tripper." (Maier et al., n.d., p. 16). By the end of 1975, Maier had guided 67 LSD experiences in this way. While the psychological metrics did not suggest any clear results, Maier and the superintendent of Oakridge felt that the program was successful. In 1977, a government sub-committee conducted an evaluation of Oakridge and declared that "psychopaths are being treated with success" (Nielsen, 2000, p. 223–225). Experienced LSD therapists also endorsed the program. In 1980, Grof, for example, referred to Maier's work as an "interesting attempt… to integrate LSD therapy into a complex therapeutic regime under the conditions of maximum security" (Grof, 1980, p. 244).

Yet despite the enthusiasm from these experts, the Oakridge experiment remains one of the most morally shocking examples of LSD therapy. In 2001, the inmates involved in this program sued Barker, Maier, and the Canadian government for inhumane treatment. In 2021 they won their case (Philips, 2022).

3. Discussion

As these examples show, interest in LSD as a correctional tool was quite widespread, even among knowledgeable and experienced psychedelic therapists. With excitement about LSD's potential to efficiently transform personality on a large scale, these therapists introduced psychedelics to diverse institutional settings in hopes that they would serve as effective rehabilitation tools. To many pioneers of psychedelic therapy, prisons seemed like ideal spaces to demonstrate the value that this kind of therapy had for society.

The history of LSD's use in correctional contexts reveals how the broader institutional matrix of modern industrial societies contributed to the "collective set and setting" within which psychedelics were understood, experienced, and implemented. By conducting psychedelic therapy within prisons, researchers aligned the aims of this therapeutic modality with those of correctional facilities: that is, with the creation of a certain kind of productive and functional citizen. In this way, psychedelic therapy was tied to the biopolitical purpose of these institutions. Scholars have shown that the "psy-disciplines" operate within a political and institutional context that influences their practices as they contribute to the goal of shaping the modern subject (Rose, 1996). As a technique originating from within the psy-disciplines and deployed in institutional settings, psychedelic therapy worked towards this goal. By highlighting this, humanities scholars can better understand why so many therapists were motivated to use psychedelics on vulnerable populations.

Today, of course, psychedelic therapy continues to operate within an institutional matrix that is in many respects similar to that of the postwar era. As advocates and researchers work to medicalize and mainstream psychedelics, they bring them in line with the aims of neo-liberal democracies (Gearen and Devenot, 2021). But from the perspective of current researchers, there are significant differences between now and the 1960s, since today ethical guidelines, Institutional Review Boards, and rigorous approval processes function to protect against unethical uses of psychedelics. From this perspective, examples of controversial psychedelic research in the past were part of an era that lacked these safeguards. However, tendencies exist within the current "psychedelic renaissance" that could lead to the use of psychedelic therapy on vulnerable populations once again. The ever-expanding list of diagnostic indications, enthusiasm about the potential of psychedelic therapy, and the commodification of psychedelics might once again create a situation in which this form of therapy is considered in diverse institutional settings. Consequentially, those working with psychedelics today should keep LSD's history as a correctional tool in mind when championing the use of these drugs.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

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The author confirms sole responsibility for the entirety of the article, including study conception and design, data collection, analysis and interpretation of results, and manuscript preparation.

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References

Barber, P. W. (2018). *Psychedelic Revolutionaries: LSD and the Birth of Hallucinogenic Research*. Regina: University of Regina Press.

Barker, E., and McLaughlin, A. J. (1977). The total encounter capsule. *Can. Psychiatr. Assoc. J.* 22, 355–360. doi: 10.1177/070674377702200705

Blewett, D. (1958). *Interim report on the therapeutic use of L.S.D 25* [unpublished report] 88-29 box 1 file 13, p. 1–73. Duncan Blewett Papers. Regina: University of Regina Archives.

Blewett, D. B., and Chwelos, N. *Handbook for the Therapeutic Use of Lysergic Acid Diethylamide- 25, Individual and Group Procedures*. (1959) [unpublished manuscript] accessed on-line through the Multidisciplinary Association for Psychedelic Studies website, via https://maps.org/2010/06/22/handbook-for-the-therapeutic-use-of-lysergic-acid-diethylamide-25/ (Accessed February 22, 2023).

Bronskill, J., and Blanchfield, M. (2001). LSD experiments: how a mad scientist went unchecked. *The Ottawa citizen*, 24, June, 5.

Corbin, M. (2012). Tactics of legitimation in the psychedelic sciences: lessons for feminist sociology of knowledge. *Am. Behav. Sci.* 56, 1413–1433. doi: 10.1177/0002764212454422

Dyck, E. (2008). *Psychedelic Psychiatry: LSD from Clinic to Campus*. Baltimore: Johns Hopkins University Press.

Eveson, M. (1963). Research with female drug addicts at the prison for women. *Can. J. Correct.* 6, 21–27. doi: 10.3138/cjcor.6.1.21

Gearen, A., and Devenot, N. (2021). Psychedelic medicalization, public discourse, and the morality of ego dissolution. *Int. J. Cult. Stud.* 24, 917–935. doi: 10.1177/13678779211019424

Giffort, D. (2020). *Acid Revival: The Psychedelic Renaissance and the Quest for Medical Legitimacy*. Minneapolis: University of Minnesota Press.

Gilmore, N., and Somerville, M. A. (1998). *A Review of the Use of LSD and ECT at the Prison for Women in the Early 1960s*. Ottawa: Correctional Services Canada.

Gormerly, S. (1968). LSD-defence women wins her freedom. *Toronto telegram* 17, January, 9.

Grof, S. (1980). *LSD Psychotherapy I*. Pomona, CA. Hunter House Inc. 244

Hartogsohn, I. (2020). *The American Trip: Set, Setting, and the Psychedelic Experience in the Twentieth Century*. Massachusetts: The MIT Press.

Lake, F. (1966). *Clinical Theology: A Theological and Psychiatric Basis to Clinical Pastoral Care*. London: Darton, Longman & Todd.

Langlitz, N. (2013). *Neuropsychedelia: The Revival of Hallucinogen Research since the Decade of the Brain*. Berkeley, CA: University of California Press.

Lee, M. A., and Shlain, B. (1985). *Acid Dreams: The Complete Social History of LSD: The CIA, the Sixties, and Beyond*. New York City, NY: Grove Press.

Maier, G. J., Tate, D. L., and Paris, B. D. (n.d.) *The F Ward LSD community: the use of LSD in a therapeutic community within a maximum security setting* [unpublished manuscript] MSP1 box 8 file 1, p. 1–34. Stanislav Grof papers. Betsy Gordon psychoactive substances collection. West Lafayette: Purdue University Archives.

Marks, J. (1979). *The Search for the 'Manchurian Candidate': The CIA and Mind Control*. New York: W.W. Norton & Company, Inc.

Marshall, J. (1976). Strange paths to final peace. *The globe and mail* 5, October, 5.

Nielsen, R. F. (2000). *Total Encounters: The Life and Times of the Mental Health Centre Penetanguishene*. Hamilton and Penetanguishene: McMaster University Press and Mental Health Centre Volunteer Association.

Oram, M. (2018) *The Trials of Psychedelic Therapy: LSD Psychotherapy in America*. Baltimore: Johns Hopkins University Press.

Philips, A. (2022). Appeals court upholds ruling against two former oak ridge docs. Collingwood Today. Available at: https://www.collingwoodtoday.ca/local-news/appeals-court-upholds-ruling-against-two-former-oak-ridge-docs-5650665 (Accessed February 22, 2023).

Proctor, D., and Rosen, F. (1994). *Chameleon: The Lives of Dorothy Proctor*. New Jersey: New Horizon Press.

Rose, N. (1996). *Inventing Ourselves: Psychology*, Power and Personhood. Cambridge University Press.

Unger, S. (1963). Mescaline, LSD, psilocybin, and personality change: a review. *Psychiatry* 26, 111–125. doi: 10.1080/00332747.1963.11023344

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Psychedelics and neonihilism: connectedness in a meaningless world

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The resurgence of psychedelic research explicitly targets treating mental health conditions largely through psychedelics-assisted psychotherapy. Current theories about mechanisms of change in psychedelics-assisted psychotherapy focus on mystical experiences as the main driver of symptom improvement. During these mystical experiences, participants report an enhanced sense of salience, connectedness, and meaning. Simultaneously, a growing psychedelic culture is also cultivating the use of psychedelics as medicine for relieving symptoms of anxiety and depression and promoting cognitive functions. We argue that an integral part of the excitement around the resurgence in psychedelics is in response to a meaning and alienation crisis that correlates with rising rates of anxiety and depression. Framing the absence of meaning as neonihilism, a contemporary correlate to the 19th-century phenomenon with unique features present in a neoliberal cultural context, we explore whether psychedelics combined with group therapy can provide answers to modern experiences of meaninglessness. Based on this exploration, we suggest concrete next steps both in the theory and practice of psychedelic psychotherapy toward what we are calling neonihilistic psychedelic group psychotherapy.

KEYWORDS

psychedelics, neonihilism, psychotherapy, meaning, connectedness

Introduction

The Global North is going through a mental health crisis of a magnitude that has not been measured since scientists started measuring mental health (Rudd and Beidas, 2020). We speculate that clinicians may be increasingly overdiagnosing their clients for various reasons, including the need to bill insurance, a human desire to categorize the world, and expectations from professional associations and insurers to have an "indication" to target (Moynihan et al., 2012; Rogers and Mintzker, 2016; Thombs et al., 2019). Other reasons for the rise in diagnoses include increased public awareness of the importance of mental health, increased access, and the ever-growing number of diagnoses in the Diagnostic and Statistical Manual of Mental Disorders (Kawa and Giordano, 2012). An account that does not conflict with the possibility of overdiagnosis is that there is another factor affecting the worsening mental health trend we are observing: a meaning crisis.

Publications focusing on a "meaning crisis" have increased exponentially over the last 20 years, which tells us that concerns over the loss of a sense of meaning is—at least academically—popular (see Figure 1, below). We also note that although correlation does not imply causation, publication trends regarding the crises of mental health and meaning in the last few decades mirror each other closely (Petranker et al., 2022). It is also possible that meaninglessness has

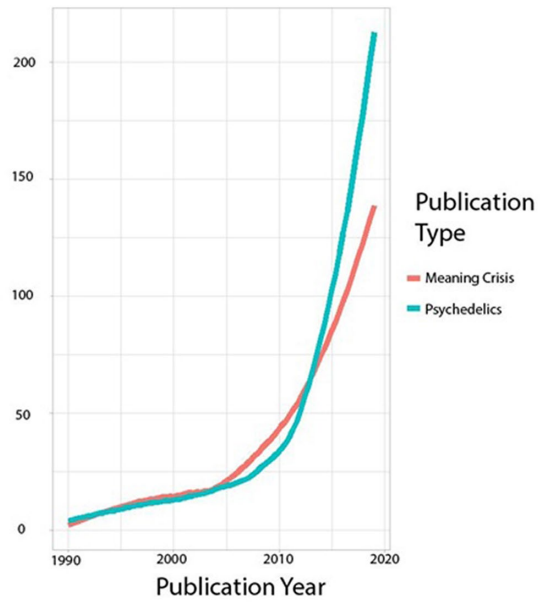

FIGURE 1
Comparison of publications including the words "Meaning Crisis" and "Psychedelics" over time. Number of publications with the keywords "Meaning Crisis" was divided by 10 to more clearly show the similarity in trends.

become trendy: popular culture has identified this phenomenon as fashionable nihilism (Abumrad, 2014). Part of the popularity of nihilistic sentiments is a response to pervasive experiences of meaninglessness with a nonchalant attitude of rueful acceptance. The so-called meaning crisis and fashionable nihilism offer insight into a growing awareness of meaninglessness, which we argue is also related to the mental health crisis (Rudd and Beidas, 2020).

Shortly after the observed increase in the meaning crisis-related publications, an exponential increase in psychedelic publications emerged (Petranker et al., 2020). This resurging wave of psychedelic research focuses almost entirely on therapeutic interventions meant to combat mental health symptoms, portraying psychedelics as a much-awaited novel tool for addressing mental health concerns (Noorani, 2020). The mechanism through which psychedelics work remains unknown, although some theoretical and therapeutic notions have been posited (Hartogsohn, 2018; Carhart-Harris and Friston, 2019; Watts and Luoma, 2020). The consensus, at least at the moment, is that the subjective experience of undergoing a meaning-enhancing mystical experience, which includes a sense of oneness or connectedness to nature, divinity, or others, is conducive to improved mental health (Ko et al., 2022). Subsequently, much of the cultural excitement around psychedelics and support for ongoing research into their therapeutic effects rests on subjective and normative experiences of the enhanced subjective sense of meaning associated with psychedelic use (Hartogsohn, 2018).

Part of the cultural lore around psychedelics is a countermeasure to a subjective sense of meaninglessness with a deliberate search for meaning via psychedelic experiences. We identify two problems at this intersection: first, conceptions of meaning are often incoherent, and the subjective experiences of connectedness and salience during psychedelic trips may not effectively respond to either the mental health crisis or the meaning crisis in isolation. In the first instance, meaning is intrinsically subjective and difficult to operationalize consistently, and additional epistemological inquiry is needed to understand what meaning is in the context of psychedelics. In the second instance, psychedelics research is constrained in the clinical domain by the medicalization of psychedelic substances, offering the potential for mere symptom relief for what may be a mental health crisis in response to systemic conditions. In addition, this approach may ultimately cause more harm than good. For example, symptom-focused medicalization may not be tuned to the potential negative long-term effects of psychedelics given the lack of research on long-term effects (Schlag et al., 2022). Medicalization may run contrary to the mechanism behind the putative effects of psychedelics by focusing on symptom relief of what may be existential crises reframed as mental health (Noorani, 2020). Ultimately, medicalization can lead to the exclusion of existing knowledge and best practices drawn from indigenous and underground communities (Williams et al., 2021). Alternatively, popular psychedelic culture is often constrained by unsystematic experimentation, lack of oversight, mystification, or spiritual and cultural fetishization (Plesa and Petranker, 2022). The relationship between meaning and psychedelics is everywhere implied; however, we do not currently have any rigorous analyses of this relationship, perhaps due to the lack of a precise definition of meaning.

Our aim in this paper is first to begin from a place of negation, in describing meaninglessness rather than meaning, given that the former can better inform us what is absent from the broad landscape of meaning. With a working definition of meaninglessness as a series of missing pieces, we can better identify whether the salience and connectedness induced by psychedelic experiences can locate those missing pieces to alleviate feelings of meaninglessness. Framing meaninglessness historically in a lineage of nihilism will help us understand what conditions contribute to the absence of meaning and what remedies have been attempted before. With this historical lineage, it is also possible to frame our contemporary meaning crisis as a form of neonihilism, which we will define shortly, along with the competing notion of fashionable nihilism. Then we can consider what possibilities psychedelics pose for countering feelings of meaninglessness.

Second, we argue that part of the causes of the meaning crisis are systemic issues that fall on intersectional lines around racial, gender, sex, disabilities, and class inequities. There is sufficient literature to support the argument that systemic issues contribute significantly to the growing mental health crisis (Stewart et al., 2001; Pickett and Wilkinson, 2015; Taylor, 2016; Miu and Moore, 2021), and the meaning crisis (Rankin et al., 2009; Schnell, 2009). If the meaning crisis is caused by systemic issues, and psychedelics are being framed as a tool or treatment toward finding subjective meaning, then the enterprise is hopeless, because subjective meaning cannot fix systemic issues. We are helpless to change systemic issues with psychedelics, so we treat the individualized symptoms, even though meaninglessness may be experienced due to increased individualization, responsibilization, competition, and self-governance in neoliberal society (Beck and Beck-Gernsheim, 2002; Teo, 2018a).

Given that psychedelics are reported to increase feelings of connectedness (Carhart-Harris et al., 2018; Petranker et al., 2022), we can resolve to approach psychedelics from the point of connectedness as an opportunity to discover meanings collectively.

We propose that the sense of subjective meaning elicited by psychedelics emerges from this sense of connectedness, which presents two therapeutic options: building collective meanings that have the potential to provoke resistance to the systemic issues causing meaninglessness, or short-term symptom-focused solutions that obscure the need for systemic change. Connectedness and collective meaning are worth exploring, even if resistance to systemic issues is only one, among many other possibilities.

Below we propose that two forms of psychedelics mirror two forms of modern nihilism, each attempting to tackle the contemporary sense of meaninglessness related to poor mental health. The direct effect of psychedelics can be used to alleviate the symptoms of the meaning-mental-health crisis, but they can also be used as a community-building tool to restore a sense of connectedness and salience to the world. Similarly, one form of contemporary nihilism produces a coping mechanism for meaninglessness, while the other suggests the possibility for confronting meaninglessness by means of connectedness.

Neonihilism, meaninglessness, and connectedness

Neoliberalism began in the 1980s as economic policies of *laissez-faire* free-market capitalism, which transitioned into neoliberal cultural norms of individualization, responsibilization, competition, and self-governance (see Harvey, 2005; Brown, 2015). Neoliberal cultural logic internalizes systemic inequities and related problems of climate change, economic instability, and mental health into the self as personal responsibilities, inadequacies, and moral failures (Illouz, 2008; Fullagar, 2009). Neoliberalism as a set of cultural norms takes individuals out of the social world to seek change within the self, ushering a new nihilism that makes social change seem impossible (Teo, 2018a,b). Meaninglessness and mental health crises then appear as individualized and responsibilized internal conditions that one must address through self-governance and self-improvement strategies while competing for resources in a flexible market economy under the illusion of scarcity (Fisher, 2009; Figueroa, 2019). These conditions are exacerbated through global internet access in the information age when we are oversaturated with content and made hyperaware of ongoing social inequities, crises, and our seeming impotence to create change (see Scott et al., 2017; Corvalan et al., 2022).

Neonihilism is the confrontation of meaninglessness experienced under the contemporary material conditions of the 21st century, including social, economic, and political inequities. The arc of neonihilism terminates with finding irony–rather than satire– through a complete confrontation of the insurmountable barriers to a good life presented by current neoliberal agendas and market forces. Irony is a contradiction between a surface meaning and an underlying meaning (Fowler and Fowler, 1906). The surface meaning in neonihilism presents our social world and its problems as beyond our control, while the underlying meaning points to our individual responsibility for our condition within our social world, despite the contradiction. The sense of irony in the futility of tackling systemic problems individually is shared among others who confront the same meaninglessness and provides a point of connectedness that can be mobilized toward community building. However, when one becomes overwhelmed with feelings of meaninglessness and alienation, one may turn to fashionable nihilism. Fashionable nihilism contains the appearance of nihilism but focuses on producing satire out of meaninglessness as a coping mechanism, and maintains the status quo. In order to fully understand the relevance and underpinnings of neonihilism, we propose that a brief historical overview of the lineage of nihilism may be helpful.

19th-century nihilism was a form of meaninglessness due to lack of faith in God and the experience of poverty under industrialism (Hingley, 1969). Philosophers recommended a return to faith, not as a form of relief, but as a way of transforming a "suffering from" to a "suffering for," thus offering us purpose (Jacobi, 2009; Kierkegaard, 2010). Nietzsche (1969) reoriented our "suffering for" away from the supernatural and toward a confrontation with ourselves as a form of empowerment toward creating our own meanings and purpose in life. 20th-century nihilism begins as a resistance to industrialism and becomes an existential phenomenon that considers life inherently meaningless (Frankl, 1984). Sartre (1992) and Camus (1955) suggest that we create meaning from our confrontation with meaninglessness. 21st-century nihilism is a response to a neoliberal status quo that places responsibility on the individual to create meaning in their labor and the self in lieu of the possibility for systemic changes (see Harvey, 2005).

Within this brief historical overview, we see the transition of nihilism as a social phenomenon combating spiritual, political, and material conditions, to a progressively internalized sense of meaninglessness driven by a sense of hopelessness to change the external conditions paradoxically responsible for our sense of meaninglessness. Within the new neoliberal form of nihilism, exists also the absurdity that the external conditions we are hopeless to change are internalized as personal moral failings (Fullagar, 2009), which further elicit feelings of meaninglessness. The recognition of this internalization is understood as irony, which is a by-product of our confrontation with neoliberal meaninglessness, and constitutes what we mean by neonihilism. However, the possibility to commodify meaninglessness in neoliberalism transforms that irony into satire, which acts as a coping mechanism to temporarily relieve the symptoms of meaninglessness, and constitutes what we mean by fashionable nihilism.

Neonihilism and fashionable nihilism

Neonihilism can be understood from Nietzsche's (1967) perspective on Greek tragedy, which elicits an uplifting element, or sense of pleasure, in confronting suffering. In the same way, neonihilism as a confrontation with meaninglessness elicits a sense of irony that is pleasurable, insofar as it is satisfying to understand the source of meaninglessness. This understanding via irony provides certainty as a sense of closure (Webster and Kruglanski, 1994), which ceases ambiguity and also the burden of hope. Within neonihilism, what is ironic is that one's sense of personal meaninglessness is derived from hopeless external conditions, and despite this recognition, the meaninglessness persists and the available avenues for treatment are individualized, confirming the absurd notion once more that the problem is within the self. It is ironic to confront meaninglessness with hopelessness.

Fashionable nihilism shares with tragicomedy the uplifting element of comedy as a satire of the tragic to relieve the effects of suffering rather than confront them. Aristotle (2006) complained that tragicomedy was invented because the masses could not stomach the superior pleasure of tragedy and needed relief through the inferior pleasure of comedy. The satirical element in fashionable nihilism is the caricaturing of meaninglessness as something readily recognizable but diffused of its power to provoke deeper understanding or action. Furthermore, within neoliberalism, fashionable nihilism is a commodification of the diffused sentiment of meaninglessness as satire that profits from the marketability of its grim nonconformity. It is a posturing of the darkness of nihilism without understanding its existential effects (Abumrad, 2014), creating a transient sense of camaraderie without developing community. Carr (1992) describes this type of "cheerful nihilism" as an acceptance of meaninglessness without critical thinking. In this way, satire acts as a coping mechanism for the effects of meaninglessness in fashionable nihilism.

What this tells us is that the power to confront meaninglessness as a form of resistance to nihilism is obscured by the very system responsible for what we argue is the cause of meaninglessness, neoliberal capitalism. Progress toward meaning within neoliberalism becomes incoherent as an internalized problem. We cannot readily decipher if and when the threshold between the ironic confrontation and the satirical encounter has been crossed. Thus, we propose that externalizing the process by relying on the connectedness in the communal recognition of irony in neonihilism, may prove to be a more viable way to tackle the problem. What neonihilism invites, via the connectedness in irony, is a chance to create or discover meaning as a collective, rather than an individual experience. Connectedness becomes the avenue for collective meanings toward resistance to systemic oppression. It is to find resistance to the individualizing and responsibilizing power-relations of neoliberalism in collective modes of meaning-making via increased connectedness and salience. We argue that similarly, enhanced connectedness and salience are some of the main mechanisms through which psychedelics operate to increase a subjective sense of meaning and, through it, wellbeing.

Meaning, connectedness, and salience in psychedelics

The study of psychedelics, especially in the current wave, has focused largely on their biochemical mechanisms (e.g., Nichols, 2016, 2020; De Gregorio et al., 2018), although recent work has focused on extrapharmacological factors as well (e.g., Hartogsohn and Petranker, 2022), and publications on the societal factors are also mounting (e.g., Devenot et al., 2022; Plesa and Petranker, 2022). Psychedelics users report increased subjective feelings of meaning following their experience, which has been suggested as a required mediator for improved mental health (Yaden and Griffiths, 2021). We posit that this sense of meaning emerges from direct changes to senses of connectedness and salience rather than existing as an independent phenomenon. There are at least two reasons to probe the determinants of psychedelics-occasioned meaning further: a better understanding of the psychedelic mechanism of action will lead to both better scholarship and better therapies. We propose that although set and setting–the mental and physical space in which psychedelics are used–has received much attention in the literature, the cultural-social context, or matrix, is required to characterize and optimize the psychedelic experience, building on the work of Eisner (1997). We employ a biopsychosocial model to track the potential mechanisms of action for psychedelics through the lens of neonihilism below.

The neurobiological aspects of psychedelics and meaning

Before discussing the biological perspective, it is important to note that the number of imaging studies on the effects of psychedelics is small, but since certain trends arise from these samples we are inferring from them with an approach of intellectual modesty. One of the most consistent findings in the neuroscience of psychedelics suggests that the Default Mode Network (DMN), which is related to one's sense of self, is disrupted, leading to increased connectivity between different brain areas which are not normally connected (Gattuso et al., 2022). It may also be related to feelings of "oceanic boundlessness" and "experiences of unity" often described by psychedelics users (Studerus et al., 2010). These have also been understood as a newfound connectedness to oneself, one's community, and one's values, especially in the context of an increased sense of personal meaning (Petranker et al., 2022). An additional, equally plausible account suggests that the disruption to DMN activity leads to more bottom-up modes of processing, which may have a therapeutic effect (Aqil and Roseman, 2023). In bottom-up processing, systems reduce the weight of prior knowledge and instead focus on trends that emerge from the data available in the moment. Thus, one is able to rely less on previous working theories about one's place in the world and more on the data the world presents. In addition to the literature discussing the DMN, however, there is growing literature examining another brain network whose activity may be modulated by the effects of psychedelics.

The salience network, which is involved in the detection and integration of stimuli, is also affected by psychedelics use. This network is crucial for attending to what is happening in the environment, helping us decide which environmental stimuli should "matter" to us. This network has been implicated in several psychopathologies including anxiety (Xiong et al., 2020) and post-traumatic stress disorder (Akiki et al., 2017). In addition, this network also modulates the abovementioned DMN. Recent research has shown that using psychedelics also modulates the behavior of this network (Pasquini et al., 2020; Madsen et al., 2021), which may shift one's salience landscape, changing what is important in the world. While under the influence of psychedelics, one's relationship to stimuli in the world shifts, which may be part of the therapeutic mechanism of change (Singleton et al., 2022). There is a rich literature describing the increased sense of "mattering" in the world during and after psychedelics use (for a fuller discussion see Hartogsohn, 2018), which has often been equated to meaning, but as we show here, there is a distinct brain network associated with these subjective reports.

The neurobiology of the psychedelic experience suggests that there is no "meaning" network that is affected by these substances. Instead, two main related networks are involved: the DMN which reflects our ability to sustain a consistent sense of self, and the salience network which helps determine what matters to us in the world. Although research on the importance of both of these aspects of psychedelic experience has been explored, to our knowledge, no work

has suggested that the subjective sense of meaning is an emergent property of the synergy between increased connectedness and salience. While a scale of connectedness was recently developed as a means to explore the importance of this aspect of the psychedelic experience (Watts et al., 2022), and some have implicitly and moderately equated salience with meaning (Hartogsohn, 2018), we argue that meaning as experienced via psychedelics is directly produced by changes in salience and connectedness. We move on to the next level of analysis to examine whether a psychological account includes a more direct explication of the meaning induced by psychedelics that can be directly accessed.

The psychological aspects of psychedelics and meaning

The study of meaning in psychedelics has paralleled the study of meaning in psychology overall, serving as a general guiding principle without a rigorous definition. For example, self-determination theory which posits that well-being is derived from competence, autonomy, and relatedness (Ryan and Deci, 2000), has been linked to a feeling that things in the world are meaningful or devoid of meaning (Vansteenkiste et al., 2018). Others have considered meaning as a dynamic process which can be separated into presence vs. a search for meaning (Steger et al., 2008) using the framework of Frankl (1984). However, this line of research does not deeply engage with a definition of meaning either, instead focusing on the practical implications of their definitions of meaning. The same goes for some of the best minds in psychedelic research, who consistently report that psychedelics enhance a subjective sense of meaning without an explicit theory of meaning (Carhart-Harris et al., 2016; Preller et al., 2017). Instead, the psychological investigations of the effects of psychedelics rely on a subjective sense of "personal relevance" (Preller et al., 2017) or specifically rely on the 5-Dimension Altered States of Consciousness scale, which directly asks about "altered meaning" and whether "things in the environment acquire a special meaning" (5D-ASC; Studerus et al., 2010, p. 9). While these descriptions sound akin to increased salience, a growing literature on the importance of subjective feelings of connectedness suggests that subjective feelings of belonging are ubiquitous following the use of psychedelics.

A variety of naturalistic studies found increases in self-reported connectedness related to the use of psychedelics (Forstmann et al., 2020; Weiss et al., 2021; Petranker et al., 2022), and connectedness is canonically related to well-being, especially in the context of psychedelics (Watts et al., 2017). The precise definition of connectedness and its relationship to meaning remains elusive, however, Forstmann et al. (2020) examined the "Inclusion of Self in Others" (Aron et al., 1991), in which participants select how much their sense of "self" overlaps with another. Petranker et al. (2020) used a qualitative analysis of respondents to a survey to construct a theory rather than impose one, thus relying on participants' personal definition of "connectedness." Weiss et al. (2021) found the same trend by using the Social Connectedness Scale (SCS; Lee and Robbins, 1995) which measures a perceived sense of belongingness and is focused on psychopathology (Lee and Robbins, 1995), and the Inclusion of Self in Others scale used by Forstmann et al. (2020). Even the new Watts Connectedness Scale (Watts et al., 2022), which is informed by extensive experience in the field and numerous reports, does not clearly connect connectedness to meaning. Based on this literature, we conclude that while there seems to be a relationship between connectedness, salience, meaning, and well-being, its specifics remain unknown and is not currently supported by placebo-controlled trials.

The literature about shifts in salience is more conclusive and appears to generally–but not always–suggest that these shifts lead to a sense of meaning and well-being, especially if drawn from resources outside of psychedelics. In the psychedelics literature, it is difficult to demarcate salience-specific changes from other brain and mind-related changes since the impact is holistic. Outside of psychedelia, bottom-up processing via a shift in salience is considered one of the main mechanisms through which mindfulness improves well-being in the case of trauma (Westerman et al., 2020) and anxiety (Treanor, 2011). These shifts in salience focus have also been argued to cause an increased sensed feeling of meaning in life (Chu and Mak, 2020). Similarly, near-death experiences may cause a sudden shift in one's salience landscape, leading individuals to value empathy and spirituality more (Greyson, 2006). This comparison is particularly relevant as psychedelics such as DMT (dimethyltryptamine) arguably model near-death experiences both phenomenologically and in their impact (Timmermann et al., 2018). It is not merely a change in brain network activity, then: it appears that the change in attitudes and behaviors following a shift in one's salience landscape creates a sense of felt meaning. Using a reductionist analysis of "brain only" and "mind only" has only been partially effective in disambiguating the relationship between connectedness, salience, and meaning. It may be that a larger societal prism is required to reconstruct these parts into a coherent narrative.

The social aspects of psychedelics and meaning

The duo of set and setting, extant from the first wave of psychedelics research, were originally part of a trifecta: set, setting, and matrix. Eisner (1997) defines the matrix as "the environment from which the subject comes… and the environment to which a patient returns after successful therapy." (p. 215). Under this definition, the social context, including our friends, family members, and work environment, as well as values, beliefs, and attitudes, all play into the impact of psychedelic use. In addition, our cultural values, mores, and norms shape this matrix and the ways in which psychedelics may affect us. We propose that the meaning crisis in our current neoliberal social matrix is related to feelings of alienation, and a lack of clarity regarding what matters in life. While these feelings are not new, their systemic and seemingly omnipotent determinants appear impregnable. Creating an optimal set and setting and then using a substance that may affect one's sense of connectedness and salience before releasing them back to a matrix of a meaning crisis is a temporary solution at best. Furthermore, it perpetuates the myth that the only change one can make is internal and subjective, similar to the mindfulness literature, which has implicitly suggested that by working on oneself, one's society may change (du Plessis and Just, 2022). As far as the twin meaning and mental health crises, however, it does not appear that our society is improving by practicing more mindfulness or using more psychedelics yet (see Figure 1). Instead, our current matrix of neoliberalism, with its cultural assumptions of individuality, self-sufficiency, and materialism, is flying in the face of the

mechanisms underlying the putative effects of psychedelics by undermining possibilities for connectedness. As we argue above, the enhanced meaning experienced by psychedelics users, which leads to improved mental health, is predicated on a stronger sense of connection and a shift in one's salience landscape, while the neoliberal matrix espouses the exact opposite.

If connectedness is indeed necessary for the meaning-induced improved mood observed in psychedelics users, then our contemporary neoliberal matrix requires acknowledgement and mitigation for optimal psychedelic psychotherapy. Most courses of psychedelic psychotherapy focus on preparation for the journey, the psychedelic experience itself, and the subsequent integration of the experience into one's life (Bathje et al., 2022). However, this approach largely disregards the wider context of the therapy: even if one feels a greater sense of connection to their self, their community, or the world, they will still return to a neoliberal culture which enshrines individualization, responsibilization, competition, and self-governance (see Beck and Beck-Gernsheim, 2002; Teo, 2018a). This is particularly true of the medicalized pathway through which psychedelics are currently dispensed and the therapy methods that are almost exclusively focused on individual therapy not only in the therapy room, but also, outside. Clients arrive and leave individually and return to their communities with the impossible task of communicating an ineffable experience and its effects on them to their families and friends or, alternatively, processing the experience alone. Indeed, undergoing what is frequently referred to as a life-changing experience (Carhart-Harris, 2019), which is inexplicable to one's social circle, may even serve to distance one from their community, as reported by mindfulness meditators (Anderson et al., 2019). The alienation matrix is likely detrimental to the action of psychedelics, but the way in which shifts in one's salience landscape may be coopted by the neoliberal matrix is more pernicious.

When undergoing psychedelic psychotherapy, one's salience landscape shifts, making one more likely to consider certain things as "important," which fueled some of the initial enthusiasm about these substances for "mental manipulation" (Dupuis, 2021). This manipulation may be useful if the issues one wishes to tackle in therapy are endogenous, as clients can be helped to change how they process self-referential information (e.g., one's excessive feelings of anxiety are taken in a wider perspective). However, consider the rise in climate-related anxiety (Taylor, 2020) as a case study of the potential detriment of using psychedelics to encourage responsibilization rather than collective action. A client comes in from the neoliberal matrix in which the climate is changing, full of anxiety about the upcoming years and decades. The client reports a sense of meaninglessness: there is no way to stop climate change, the negative outcomes are inevitable, and hopelessness about the future is mounting. One way of using psychedelics to help this client is to shift the salience of this ongoing issue from an external event that needs to be addressed by way of action into a subjective, internal event that the client must learn to accept because they cannot change it. Another way of using psychedelics to help this client is to shift the salience of the event from the personal to the collective, using a two-step process: first, by helping the client confront the incredible magnitude of the problem and the likely-insurmountable systemic changes that are required to solve it, and then by reminding them that the notion that they must change the world on their own is part of their cultural matrix and that climate change is, in fact, a collective action problem. Furthermore, we argue that this second method is best applied in group therapy settings, which promote collective meaning-making and action.

We suggest that in the case of psychedelics, the current focus on set and setting should expand to contain the matrix of meaninglessness and encourage an engagement with these feelings via neonihilism–a *confrontation* with meaninglessness. Without such considerations, psychedelic psychotherapy may only temporarily solve felt meaninglessness without addressing its underlying cause, which would parallel the *encounter* with meaninglessness we have described in fashionable nihilism as a coping mechanism.

Neonihilistic psychedelic group psychotherapy

Nietzsche (1974) argued that within nihilism we can find the power to overcome it. Similarly, within neonihilism exists the point of resistance in the collective recognition of irony, which is a form of connectedness that points toward the possibility for collective meaning-making. Neonihilism is merely a descriptive phenomenon of a contemporary form of neoliberal nihilism with a by-product of ironic futility to make systemic changes. However, by negation, we have arrived at the missing piece that results in meaninglessness; what we argue is missing is a collective salience landscape together with a sense of solidarity with others in tackling systemic problems. Psychedelics may help by linking one's salience landscape with a feeling of connectedness that can be explored communally toward solidarity in collective–rather than individual– meaning-making. In this way, psychedelics offer an avenue to challenge neonihilism if we shift away from individual therapy and toward connectedness as a collective experience.

Our proposition is that the unifying principle of connectedness is the underlying mechanism beneath all of the concepts introduced here. Its absence is core from our neonihilistic matrix, instrumental to our contemporary meaning crisis, causal to the mental health crisis, and can be explored by using psychedelics. Using neonihilism as the social matrix in a trifecta including set and setting for psychedelic experiences, we propose group-oriented therapeutic interventions as an appropriate setting for optimizing the therapeutic outcomes by exploring connectedness. The bounds of psychedelic therapy should allow therapists to skilfully alert clients as needed to the internal and external causes of their conditions. When appropriate, therapy should focus on the client's internal world and experiences and learning to accept them while holding space, as is the current best practice (Thal et al., 2022). However, when appropriate, the therapist should be able to also hold space for the collective systemic issues–the matrix–that provoke experiences of meaninglessness and orient the client toward the possibility for collective meaning-making. This novel approach to psychedelic-assisted psychotherapy will yield better results as it utilizes the underlying mechanisms of psychedelic action, moving toward connectedness via the shared neonihilistic social matrix in group settings. The therapeutic orientation toward a collective confrontation of meaninglessness is meant to subvert the individualizing, responsibilizing, and self-governing neoliberal ethos, which we argue is the recurring obstacle to effective strategies to combat the meaning and mental health crises via psychedelics.

In addition to the modifications proposed in the therapy room, we also suggest two structural changes: a deeper consideration of the client's matrix, and a focus on group rather than individual therapy. There is no gold standard for psychedelic psychotherapy, which we proposed elsewhere should be addressed by decriminalization and support from professional organizations (Plesa and Petranker, 2022). Here we posit that any such gold standard should include more than collecting demographic information and presenting concerns, such as, which systemic or social issues the client faces, what they feel most hopeless about, and what supports they have in their lives. The therapist should be mindful of where the client is coming from and to whence they return, in order to prepare them to reintegrate into their milieu. In addition, group therapy may help create such a milieu so that clients do not have to go back to the same matrix from which they came, and instead make new connections salient via the therapeutic process.

The current evidence base suggests that meaning is important, if not necessary, to get benefits from psychedelics, and it appears that meaning is an emergent property of connectedness and salience. Thus, a focus on connectedness and salience in the therapy room should be key. We propose that the former can be addressed by focusing the above mentioned neonihilistic approach in group therapy, which lacks randomized control trial evidence, however, psychedelic group settings are the norm in many indigenous (Sabina and Wasson, 1974) and underground communities (Gasser, 2022). Using psychedelics in a group setting would of course present major cost savings which are currently desperately needed (dos Santos et al., 2021), but we propose that group therapy should be the norm because it dovetails with the psychedelic mechanism of action. We hypothesize that psychedelic psychotherapy, done in a group setting, will have a synergistic effect since the connectedness-enhancing process will be magnified. We expect that the group will become a more salient unit of cohesion which clients will benefit from substantially. Group members can also attend follow-up group sessions, form consensual accountability relations, and organize to meet outside of therapy for ongoing support.

Our suggestion for neonihilistic psychedelic group psychotherapy is relatively novel but not without precedent, at least in the first-generation psychedelics research. Nevertheless, the attempts at group therapies involving psychedelics between the 1950s and 1970s did not employ rigorous or homogenous methodologies. A review of clinical psychedelic group therapies from 1900 to 2018 by Trope et al. (2019) concludes that "methodological shortcomings common to this era of psychedelic research include lack of proper control groups, lack of blinding procedures, inconsistent diagnoses and treatments applied across groups, outcome measures that were either unvalidated or absent, and poor or absent statistical analysis" (p. 12), which leaves the efficacy of such therapies indeterminate. Nevertheless, the authors argue that recent studies in individual psychedelic therapies using empirical qualitative data show that social connectedness is a fundamental mechanism to therapeutic change, adding that "a group component in psychedelic research protocols serves as a significant manipulation of both attitudinal set and environmental setting" (Trope et al., 2019, p. 13).

Since Trope et al. (2019) review, only a few studies have looked at psychedelic group psychotherapy (Gross, 2021; Gasser, 2022), the most notable of which is Anderson et al. (2020) clinical trial of psychedelic-assisted group psychotherapy with older long-term AIDS survivor (OTLAS) men, which has been heralded as trailblazing for using group therapy in combination with psychedelics to treat a marginalized community that faces an existential form of "demoralization—a sense of helplessness, hopelessness, and a loss of meaning in life" that is often comorbid with mental health conditions (Hendricks, 2020, p. 1). Although this is a pilot study, it indicates the feasibility of conducting psychedelic-assisted group psychotherapy and moreover the application of this therapeutic intervention to crises of meaning and mental health. Furthermore, group approaches to psychedelics-assisted psychotherapies have at least two major benefits: (1) Given that psychedelics-assisted therapies are time-intensive, group settings are more cost effective and scalable, (2) groups settings are optimal for meaning-making around such existential and ineffable experiences, which leads to more adaptive changes in behavior (Trope et al., 2019; Hendricks, 2020).

There is precedent for relating felt meaning to both connectedness (Carhart-Harris et al., 2018) and salience (Pasquini et al., 2020), the use of group therapy in tandem with psychedelics (Gasser, 2022), and the integration of a social matrix along with the established model of set and setting (Eisner, 1997). Our contribution here is twofold. First, we propose a new relationship between these constructs that disambiguates causal relationships and positions meaning as an emergent property of connectedness and salience. Second, in synthesizing these ideas together with our theoretical framework of neonihilism as the neoliberal social matrix, we create an explicit focus on sources of collective meaninglessness and the need for collective meaning-making as a viable solution, which can be therapeutically guided. Neonihilistic psychedelic group psychotherapy focuses on a collective confrontation of meaninglessness as a radical departure from individualizing therapeutic practices that further reinforce neoliberal forms of individualization, responsibilization, competition and self-governance. Our model for group therapy is ambitious, but proportional to our meaning and mental health problems, and requires some caveats and acknowledgement of limitations.

First, in guiding groups to confront meaninglessness toward collective meaning-making we are transparent about our theoretical assumptions underpinning neonihilism but we do not impose them on patients as a belief system. Our approach would focus on *how* to think about meaninglessness through connectedness with others rather than an individual phenomenon, not form a basis for *what* to think. Second, discussing solidarity and collective action as potential solutions to systemic problems only signifies the political relevance of our approach, not the method or expected outcome of our proposed group therapy. We recognize that psychedelics may not promote prosocial behaviors, but rather, amplify existing beliefs (Nour et al., 2017), which are likely to align with the neoliberal cultural values we argue are part of the problem of meaninglessness. Theorizing meaninglessness as a response to internalizing systemic issues in neoliberal capitalism is an important framework for understanding the value in collective approaches to meaning-making as an antithesis to continuing with individualizing approaches. As such, contextualizing group therapy to a shared social matrix shifts the focus to collective solutions for meaning and mental health crises to potentially arise.

Conclusion

Psychedelic-assisted psychotherapy deals with connectedness and salience, from which meaning emerges. The existing literature points to set and setting as key factors in determining therapeutic outcomes, but excludes the social matrix that enmeshes psychedelics users, and to which they must return following therapy. This social matrix includes one's social circles and culture, but also systemic problems, which we argue are internalized in neoliberalism and contribute to the meaning and mental health crises. We have theorized these crises as contributing to contemporary forms of nihilism, which is a sense of meaninglessness. A confrontation with meaninglessness produced by internalizing systemic problems results in the ironic conclusion that the individual cannot hope to make systemic changes in a highly individualized social world. At the same time, one feels responsible for changing and governing the self to cope with these problems. This confrontation with meaninglessness that produces irony is what we have called neonihilism; in contrast, the neoliberal commodification of nihilistic sentiments in media produces satire, which acts as a coping mechanism toward insurmountable systemic problems. The commodification of nihilism is what we have called fashionable nihilism, which is merely an encounter, rather than a confrontation, with meaninglessness.

Likewise, psychedelics-assisted psychotherapy can follow one of two paths. One path includes a brief encounter with meaninglessness that is then navigated back to intrapersonal coping, by focusing on the individual. Alternatively, as we have suggested, psychedelics-assisted psychotherapy can be a confrontation with meaninglessness that, rather than ending in irony, can explore connectedness together with others toward solidarity and collective meaning-making. We have looked at meaninglessness as an absence of meaning and suggested that what is missing is solidarity and communion with others that can be facilitated via the sense of connectedness indicated in neonihilism, and potentially responded to in the psychedelic experience. Exploring connectedness communally in therapeutic settings has the potential to create collective meanings about our shared social worlds.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

Conflict of interest

RP is a consultant for Naya Technologies Inc.

The remaining author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Abumrad, J. (Host). (2014). In the dust of this planet [Audio podcast episode]. In *Radiolab*. WNYC Studios. Available at: https://www.wnycstudios.org/podcasts/radiolab/articles/dust-planet (Accessed 8 September 2014).

Akiki, T. J., Averill, C. L., and Abdallah, C. G. (2017). A network-based neurobiological model of PTSD: evidence from structural and functional neuroimaging studies. *Curr. Psychiatry Rep.* 19:81. doi: 10.1007/s11920-017-0840-4

Anderson, B. T., Danforth, A., Daroff, R., Stauffer, C., Ekman, E., Agin-Liebes, G., et al. (2020). Psilocybin-facilitated group therapy for demoralized older long-term AIDS survivor men: an open-label safety and feasibility pilot study. *eClin Med* 27, 1–11. doi: 10.1016/j.eclinm.2020.100538

Anderson, T., Suresh, M., and Farb, N. A. (2019). Meditation benefits and drawbacks: empirical codebook and implications for teaching. *J Cogn Enhance* 3, 207–220. doi: 10.1007/s41465-018-00119-y

Aqil, M., and Roseman, L. (2023). More than meets the eye: the role of sensory dimensions in psychedelic brain dynamics, experience, and therapeutics. *Neuropharmacology* 223:109300. doi: 10.1016/j.neuropharm.2022.109300

Aristotle. (2006). *Poetics*. (SachsJ., Trans.). Focus Publishing.

Aron, A., Aron, E. N., Tudor, M., and Nelson, G. (1991). Close relationships as including other in the self. *J. Pers. Soc. Psychol.* 60, 241–253. doi: 10.1037/0022-3514.60.2.241

Bathje, G. J., Majeski, E., and Kudowor, M. (2022). Psychedelic integration: an analysis of the concept and its practice. *Front. Psychol.* 13:824077. doi: 10.3389/fpsyg.2022.824077

Beck, U., and Beck-Gernsheim, E. (2002). *Individualization: Institutionalized individualism and its social and political consequences* Sage Publications Ltd.

Brown, W. (2015). *Undoing the demos: Neoliberalism's stealth revolution*. Zone Books.

Camus, A. (1955). *The myth of Sisyphus and other essays.* (O'BrienJ., trans.). Knopf.

Carhart-Harris, R. L. (2019). How do psychedelics work? *Curr. Opin. Psychiatry* 32, 16–21. doi: 10.1097/YCO.0000000000000467

Carhart-Harris, R. L., Erritzoe, D., Haijen, E., Kaelen, M., and Watts, R. (2018). Psychedelics and connectedness. *Psychopharmacology (Berl)* 235, 547–550. doi: 10.1007/s00213-017-4701-y

Carhart-Harris, R. L., and Friston, K. J. (2019). REBUS and the anarchic brain: toward a unified model of the brain action of psychedelics. *Pharmacol. Rev.* 71, 316–344. doi: 10.1124/pr.118.017160

Carhart-Harris, R. L., Muthukumaraswamy, S., Roseman, L., Kaelen, M., Droog, W., Murphy, K., et al. (2016). Neural correlates of the LSD experience revealed by multimodal neuroimaging. *Proc. Natl. Acad. Sci.* 113, 4853–4858. doi: 10.1073/pnas.1518377113

Carr, K. L. (1992). *The banalization of nihilism: Twentieth-century responses to meaninglessness* SUNY Press.

Chu, S. T.-W., and Mak, W. W. S. (2020). How mindfulness enhances meaning in life: a Meta-analysis of correlational studies and randomized controlled trials. *Mindfulness* 11, 177–193. doi: 10.1007/s12671-019-01258-9

Corvalan, C., Gray, B., Prats, E. V., Sena, A., Hanna, F., and Campbell-Lendrum, D. (2022). Mental health and the global climate crisis. *Epidemiol. Psychiatr. Sci.* 31, 1–10. doi: 10.1017/ S2045796022000361

De Gregorio, D., Enns, J. P., Nuñez, N. A., Posa, L., and Gobbi, G. (2018). "Chapter 3—d-lysergic acid diethylamide, psilocybin, and other classic hallucinogens: mechanism of action and potential therapeutic applications in mood disorders" in *Progress in Brain Research*. ed. T. Calvey (Elsevier), 69–96.

Devenot, N., Conner, T., and Doyle, R. (2022). Dark side of the Shroom: erasing indigenous and counterculture wisdoms with psychedelic capitalism, and the open source alternative. *Anthropol. Conscious.* 33, 476–505. doi: 10.1111/anoc.12154

dos Santos, R. G., Bouso, J. C., Rocha, J. M., Rossi, G. N., and Hallak, J. E. (2021). The use of classic hallucinogens/psychedelics in a therapeutic context: healthcare policy opportunities and challenges. *Risk Manage Healthcare Policy* 14, 901–910. doi: 10.2147/RMHP.S300656

du Plessis, E. M., and Just, S. N. (2022). Mindfulness—it's not what you think: toward critical reconciliation with progressive self-development practices. *Organization* 29, 209–221. doi: 10.1177/1350508421995755

Dupuis, D. (2021). Psychedelics as tools for belief transmission. Set, setting, suggestibility, and persuasion in the ritual use of hallucinogens. *Front. Psychol.* 12:730031. doi: 10.3389/fpsyg.2021.730031

Eisner, B. (1997). Set, setting, and matrix. *J. Psychoactive Drugs* 29, 213–216. doi: 10.1080/02791072.1997.10400190

Figueroa, A. (2019). Do market prices reflect real scarcity? Theories and Facts. *Economia* 42, 54–74. doi: 10.18800/economia.201901.003

Fisher, M. (2009). *Capitalist realism: Is there no alternative?* O Books.

Forstmann, M., Yudkin, D. A., Prosser, A. M. B., Heller, S. M., and Crockett, M. J. (2020). Transformative experience and social connectedness mediate the mood-enhancing effects of psychedelic use in naturalistic settings. *Proc. Natl. Acad. Sci.* 117, 2338–2346. doi: 10.1073/pnas.1918477117

Frankl, V. E. (1984). *Man's search for meaning: an introduction to logetheraphy*. (LaschI., trans.). Rider books.

Fowler, H. W., and Fowler, F. G. (1906). *The king's English*. Clarendon Press.

Fullagar, S. (2009). Negotiating the neurochemical self: anti-depressant consumption in women's recovery from depression. *Health* 13, 389–406. doi: 10.1177/1363459308101809

Gasser, P. (2022). "Psychedelic Group Therapy" in *Disruptive Psychopharmacology*. eds. F. S. Barrett and K. H. Preller (Springer International Publishing), 23–34.

Gattuso, J. J., Perkins, D., Ruffell, S., Lawrence, A. J., Hoyer, D., Jacobson, L. H., et al. (2022). Default mode network modulation by psychedelics: a systematic review. *Int. J. Neuropsychopharmacol.* 26, 155–188. doi: 10.1093/ijnp/pyac074

Greyson, B. (2006). Near-death experiences and spirituality. *Zygon* 41, 393–414. doi: 10.1111/j.1467-9744.2005.00745.x

Gross, B. A. (2021). Communal psychedelic integration: How group therapy is integral to wholeness. Unpublished doctoral dissertation. Pacifica Graduate Institute.

Hartogsohn, I. (2018). The meaning-enhancing properties of psychedelics and their mediator role in psychedelic therapy, spirituality, and creativity. *Front. Neurosci.* 12:00129. doi: 10.3389/fnins.2018.00129

Hartogsohn, I., and Petranker, R. (2022). Set and setting in microdosing: an oft-overlooked principle. *Psychopharmacology* 239, 3771–3777. doi: 10.1007/s00213-022-06249-8

Harvey, D. (2005). *A brief history of neoliberalism* Oxford University Press.

Hendricks, P. S. (2020). Psilocybin-assisted group therapy: a new hope for demoralization. *eClin. Med* 27:100557. doi: 10.1016/j.eclinm.2020.100557

Hingley, R. (1969). *Nihilists: Russian radicals and revolutionaries in the reign of Alexander II,1855–81* Delacorte Press.

Illouz, E. (2008). *Saving the modern soul: Therapy, emotions, and the culture of self-help* University of California Press.

Jacobi, F. H. (2009). *Main philosophical writings and the novel Allwill*. (Giovanni G. di, trans.). McGill-Queen's press.

Kawa, S., and Giordano, J. (2012). A brief historicity of the diagnostic and statistical manual of mental disorders: issues and implications for the future of psychiatric canon and practice. *Philos. Ethics Humanit. Med.* 7:2. doi: 10.1186/1747-5341-7-2

Kierkegaard, S. (2010). *The present age: on the death of rebellion*. (Dru A., trans.). Harper Collins.

Ko, K., Knight, G., Rucker, J. J., and Cleare, A. J. (2022). Psychedelics, Mystical Experience, and Therapeutic Efficacy: A Systematic Review. *Front. Psych.* 13:917199. doi: 10.3389/fpsyt.2022.917199

Lee, R. M., and Robbins, S. B. (1995). Measuring belongingness: the social connectedness and the social assurance scales. *J. Couns. Psychol.* 42, 232–241. doi: 10.1037/0022-0167.42.2.232

Madsen, M. K., Stenbæk, D. S., Arvidsson, A., Armand, S., Marstrand-Joergensen, M. R., Johansen, S. S., et al. (2021). Psilocybin-induced changes in brain network integrity and segregation correlate with plasma psilocin level and psychedelic experience. *Eur. Neuropsychopharmacol.* 50, 121–132. doi: 10.1016/j.euroneuro.2021.06.001

Miu, A. S., and Moore, J. R. (2021). Behind the masks: experiences of mental health practitioners of color during the COVID-19 pandemic. *Acad. Psychiatry* 45, 539–544. doi: 10.1007/s40596-021-01427-w

Moynihan, R., Doust, J., and Henry, D. (2012). Preventing overdiagnosis: how to stop harming the healthy. *BMJ* 344, 1–6. doi: 10.1136/bmj.e3502

Nichols, D. E. (2016). Psychedelics. *Pharmacol. Rev* 68, 264–355. doi: 10.1124/pr.115.011478

Nichols, D. E. (2020). Psilocybin: From ancient magic to modern medicine. *J. Antibiot.* 73, 679–686. doi: 10.1038/s41429-020-0311-8

Nietzsche, F. (1967). *The birth of tragedy*. (KaufmannW., trans.). Vintage books.

Nietzsche, F. (1969). On the genealogy of morals. W. Kaufmann and R. J. Hollingdale, (Trans.), *On the genealogy of morals and ecce homo* (pp. 15–163). Vintage Books.

Nietzsche, F. (1974). *The gay science*. (KaufmannW., trans.). Vintage books.

Noorani, T. (2020). Making psychedelics into medicines: the politics and paradoxes of medicalization. *J Psychedel Stud* 4, 34–39. doi: 10.1556/2054.2019.018

Nour, M. M., Evans, L., and Carhart-Harris, R. L. (2017). Psychedelics, personality and political perspectives. *J. Psychoactive Drugs* 49, 182–191. doi: 10.1080/02791072.2017.1312643

Pasquini, L., Palhano-Fontes, F., and Araujo, D. B. (2020). Subacute effects of the psychedelic ayahuasca on the salience and default mode networks. *J. Psychopharmacol.* 34, 623–635. doi: 10.1177/0269881120909409

Petranker, R., Anderson, T., and Farb, N. (2020). Psychedelic research and the need for transparency: polishing Alice's looking glass. *Front. Psychol.* 11:01681. doi: 10.3389/fpsyg.2020.01681

Petranker, R., Kim, J., and Anderson, T. (2022). Microdosing as a response to the meaning crisis: a qualitative analysis. *J. Humanist. Psychol.* 00221678221075076 :002216782210750. doi: 10.1177/00221678221075076

Pickett, K. E., and Wilkinson, R. G. (2015). Income inequality and health: a causal review. *Soc. Sci. Med.* 128, 316–326. doi: 10.1016/j.socscimed.2014.12.031

Plesa, P., and Petranker, R. (2022). Manifest your desires: psychedelics and the self-help industry. *Int. J. Drug Policy* 105:103704. doi: 10.1016/j.drugpo.2022.103704

Preller, K. H., Herdener, M., Pokorny, T., Planzer, A., Kraehenmann, R., Stämpfli, P., et al. (2017). The fabric of meaning and subjective effects in LSD-induced states depend on serotonin 2A receptor activation. *Curr. Biol.* 27, 451–457. doi: 10.1016/j.cub.2016.12.030

Rankin, L. E., Jost, J. T., and Wakslak, C. J. (2009). System justification and the meaning of life: Are the existential benefits of ideology distributed unequally across racial groups? *Soc. Justice Res* 22, 312–333. doi: 10.1007/s11211-009-0100-9

Rogers, W. A., and Mintzker, Y. (2016). Getting clearer on overdiagnosis. *J. Eval. Clin. Pract.* 22, 580–587. doi: 10.1111/jep.12556

Rudd, B. N., and Beidas, R. S. (2020). Digital mental health: the answer to the global mental health crisis? *JMIR Mental Health* 7:e18472. doi: 10.2196/18472

Ryan, R. M., and Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *Am. Psychol.* 55, 68–78. doi: 10.1037/0003-066X.55.1.68

Sabina, M., and Wasson, R. G.. (1974). *María Sabina and her Mazatec mushroom Velada*. New York: Harcourt Brace Jovanovich.

Sartre, J.-P. (1992). *Being and nothingness*. (BarnesH., trans.). Washington Square press.

Schlag, A. K., Aday, J., Salam, I., Neill, J. C., and Nutt, D. J. (2022). Adverse effects of psychedelics: from anecdotes and misinformation to systematic science. *J. Psychopharmacol.* 36, 258–272. doi: 10.1177/02698811211069100

Schnell, T. (2009). The sources of meaning and meaning in life questionnaire (SoMe): Relations to demographics and well-being. *J. Posit. Psychol.* 4, 483–499. doi: 10.1080/17439760903271074

Scott, D. A., Valley, B., and Simecka, B. A. (2017). Mental health concerns in the digital age. *Int. J. Ment. Heal. Addict.* 15, 604–613. doi: 10.1007/s11469-016-9684-0

Singleton, S. P., Luppi, A. I., Carhart-Harris, R. L., Cruzat, J., Roseman, L., et al. (2022). Receptor-informed network control theory links LSD and psilocybin to a flattening of the brain's control energy landscape. *Nat. Commun.* 13, 1–13. doi: 10.1038/s41467-022-33578-1

Steger, M. F., Kashdan, T. B., Sullivan, B. A., and Lorentz, D. (2008). Understanding the search for meaning in life: personality, cognitive style, and the dynamic between seeking and experiencing meaning. *J. Pers.* 76, 199–228. doi: 10.1111/j.1467-6494.2007.00484.x

Stewart, D. E., Rondon, M., Damiani, G., and Honikman, J. (2001). International psychosocial and systemic issues in women's mental health. *Arch. Womens Ment. Health* 4, 13–17. doi: 10.1007/s007370170003

Studerus, E., Gamma, A., and Vollenweider, F. X. (2010). Psychometric evaluation of the altered states of consciousness rating scale (OAV). *PLoS One* 5:e12412. doi: 10.1371/journal.pone.0012412

Taylor, E. (2016). Groups and oppression. *Hypatia* 31, 520–536. doi: 10.1111/hypa.12252

Taylor, S. (2020). Anxiety disorders, climate change, and the challenges ahead: introduction to the special issue. *J. Anxiety Disord.* 76:102313. doi: 10.1016/j.janxdis.2020.102313

Teo, T. (2018a). Homo neoliberalus: from personality to forms of subjectivity. *Theory Psychol.* 28, 581–599. doi: 10.1177/0959354318794899

Teo, T. (2018b). *Outline of theoretical psychology: Critical investigations* Palgrave.

Thal, S., Engel, L. B., and Bright, S. J. (2022). Presence, trust, and empathy: preferred characteristics of psychedelic Carers. *J. Humanist. Psychol.* 0. doi: 10.1177/00221678221081380

Thombs, B., Turner, K. A., and Shrier, I. (2019). Defining and evaluating overdiagnosis in mental health: a meta-research review. *Psychother. Psychosom.* 88, 193–202. doi: 10.1159/000501647

Timmermann, C., Roseman, L., Williams, L., Erritzoe, D., Martial, C., Cassol, H., et al. (2018). DMT models the near-death experience. *Front. Psychol.* 9:01424. doi: 10.3389/fpsyg.2018.01424

Treanor, M. (2011). The potential impact of mindfulness on exposure and extinction learning in anxiety disorders. *Clin. Psychol. Rev.* 31, 617–625. doi: 10.1016/j.cpr.2011.02.003

Trope, A., Anderson, B. T., Hooker, A. R., Glick, G., Stauffer, C., and Woolley, J. D. (2019). Psychedelic-assisted group therapy: a systematic review. *J. Psychoactive Drugs* 51, 174–188. doi: 10.1080/02791072.2019.1593559

Vansteenkiste, M., Aelterman, N., De Muynck, G.-J., Haerens, L., Patall, E., and Reeve, J. (2018). Fostering personal meaning and self-relevance: a self-determination theory perspective on internalization. *J. Exp. Educ.* 86, 30–49. doi: 10.1080/00220973.2017.1381067

Watts, R., Day, C., Krzanowski, J., Nutt, D., and Carhart-Harris, R. (2017). Patients' accounts of increased "connectedness" and "acceptance" after psilocybin for treatment-resistant depression. *J. Humanist. Psychol.* 57, 520–564. doi: 10.1177/0022167817709585

Watts, R., Kettner, H., Geerts, D., Gandy, S., Kartner, L., Mertens, L., et al. (2022). The Watts connectedness scale: a new scale for measuring a sense of connectedness to self, others, and world. *Psychopharmacology (Berl)* 239, 3461–3483. doi: 10.1007/s00213-022-06187-5

Watts, R., and Luoma, J. B. (2020). The use of the psychological flexibility model to support psychedelic assisted therapy. *J. Contextual Behav. Sci.* 15, 92–102. doi: 10.1016/j.jcbs.2019.12.004

Webster, D. M., and Kruglanski, A. W. (1994). Individual differences in need for cognitive closure. *J. Pers. Soc. Psychol.* 67, 1049–1062. doi: 10.1037/0022-3514.67.6.1049

Weiss, B., Nygart, V., Pommerencke, L. M., Carhart-Harris, R. L., and Erritzoe, D. (2021). Examining psychedelic-induced changes in social functioning and connectedness in a naturalistic online sample using the five-factor model of personality. *Front. Psychol.* 12:749788. doi: 10.3389/fpsyg.2021.749788

Westerman, G., McCann, E., and Sparkes, E. (2020). Evaluating the effectiveness of mindfulness and compassion-based programs on shame and associated psychological distress with potential issues of salience for adult survivors of childhood sexual abuse: a systematic review. *Mindfulness* 11, 1827–1847. doi: 10.1007/s12671-020-01340-7

Williams, M. T., Davis, A. K., Xin, Y., Sepeda, N. D., Grigas, P. C., Sinnott, S., et al. (2021). People of color in North America report improvements in racial trauma and mental health symptoms following psychedelic experiences. *Drugs* 28, 215–226. doi: 10.1080/09687637.2020.1854688

Xiong, H., Guo, R.-J., and Shi, H.-W. (2020). Altered default mode network and salience network functional connectivity in patients with generalized anxiety disorders: an ICA-based resting-state fMRI study. *Evid. Based Complement. Alternat. Med.* 2020, 1–9. doi: 10.1155/2020/4048916

Yaden, D. B., and Griffiths, R. R. (2021). The subjective effects of psychedelics are necessary for their enduring therapeutic effects. *ACS Pharmacol Transl Sci* 4, 568–572. doi: 10.1021/acsptsci.0c00194

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History of the administration of psychedelics in France

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This article reviews the historical protocols for the administration of "classic" psychedelics in France, from the 1920s to the 1960s. Taking a chronological approach, it investigates the way mescaline, LSD, and psilocybin were administered, the subjects involved, the route of administration, the dosage, and the epistemological context of the research. From the 1930s, the Sainte-Anne school dominated French experimentation with psychedelics, inserting these studies on "hallucinogens" into a biological conception of therapeutics, where the notion of "shock" dominated. The sessions show particularly anxious experiences, sometimes described as "torture" by the patients who underwent them. With just a few rare cases of recovery reported, these substances were not considered as medicines, but rather as tools for exploration in the context of experimental research; thought of not as *psychedelics* ("mind manifesters") but as *psychodysleptics* ("mind disruptors"). While these tools could be useful for the diagnosis of sick patients, French physicians did not manage to demonstrate clear therapeutic benefits in the use of psychedelics, perhaps because of their reluctance, in most cases, to determine an optimum dose, and also very often to appreciate the context of administration and the relationship with the patient. This article allows us to understand the reasons for the therapeutic failures reported by these early French psychedelic researchers, but also to help explain the current reluctance of French health professionals who in the face of the "psychedelic renaissance" remain strongly influenced by the very negative early representations of these substances.

KEYWORDS

psychedelic, history of psychiatry, psychedelic therapy, shock therapy, hallucinogen, LSD, psilocybin, mescaline

Introduction

The study of serotonergic hallucinogens, or "classic" psychedelics, by French medical researchers, began with the peyote cactus and its alkaloids, especially mescaline, in the early 20th century. In the 1920s, the pharmacologist Alexandre Rouhier captured the attention of the French and international scientific communities, first through his important monograph on the uses of peyote, which was translated several times, and later through his pharmaceutical preparations. Mescaline, on the other hand, was first studied in France by the famous neurologist and psychiatrist Henri Ey, beginning in the 1930s. From 1951 onwards, the therapeutic properties of LSD were in turn evaluated. Then, in 1958, the Swiss chemist Albert Hofmann extracted and later synthesized both psilocybin and psilocin from mushroom samples given to him by French mycologist Roger Heim, director of the Muséum national d'histoire naturelle (National Museum of Natural History) in Paris. France was also home to the beginnings of modern psychopharmacology, when in the 1950s psychiatrist Jean Delay and his team at the Hôpital Sainte-Anne in Paris gained international

recognition for their pioneering use of the first neuroleptic (antipsychotic) chlorpromazine in psychiatric care.

Despite these early studies of psychedelics, French scientists were quickly overtaken by the methodological and epistemological developments proposed by therapists and researchers elsewhere. Remaining committed to their conceptual framework of "shock therapies" common during inter-war psychiatry, French researchers ignored extra-pharmacological considerations such as phenomenological subjectivity, which is nonetheless decisive to the psychedelic experience and its therapeutic effectiveness. This isolationism must be understood in a context where the precepts of psychoanalysis were not predominant in France and were more theoretical concepts than models to be applied concretely with patients within the psychiatric institution. As a result, the doctor-patient relationship had not fundamentally evolved (Guillemain, 2020). A century earlier, the French alienist Moreau de Tours had however already formulated the importance of the environment and the state of mind of subjects in psychotropic drugs' experience (Snelders et al., 2006; Hartogsohn, 2017). But for most French doctors in the first half of the 20th century, these ideas were in the same way not transposable to the case of patients. In this theoretical context, the few cures reported in this early psychedelic literature seemed more to be happy accidents rather than the fruits of an intentional and skillful administration of these substances.

We propose a historical analysis of the theoretical and practical conditions of the administration of psychedelics on humans in France. The "psychedelic renaissance" reflected in the renewed interest in the therapeutics of these substances over the last 20 years in North America and Europe, has been slow to materialize in the form of French clinical trials. We observe a historiographical issue relating to the often-mixed results of clinical and experimental psychedelic usage in French psychiatry, compared with some of the results obtained abroad. It seems essential to question the reasons for the poor therapeutic results observed by French teams in their use of psychedelics. We hope that this work enables current therapists and scientists to better understand and question their own practices and to recognize when aspects of their clinical failures are owing to commitments to certain methods used in the past.

This article is organized in three parts, examining the specific research carried out in France using mescaline, LSD, and psilocybin respectively. By identifying and analyzing the administration protocols, dosages, environmental conditions, conceptual frameworks, and other factors used in this research, we intend to describe the specific character of French psychedelic research in comparison with approaches developed elsewhere in the world.

Mescaline

In France, in the 1920s, it was first all of peyote's active component—alkaloids—that were considered potentially helpful as medicines. Of all these alkaloids, the identification and synthesis of mescaline became most important and was experimented with in isolation in the 1930s and 1940s by great names of French psychiatry of this era: Henri Claude, Henri Ey, and Jean Delay, working out of the legendary psychiatric hospital and asylum Sainte-Anne in Paris. A look at the context in which these first psychiatric studies using mescaline took place allows us to consider the later reception of LSD and psilocybin in French medical and pharmacological circles. Indeed, French psychiatry was undergoing a neurobiological turning point in the 1930s, which these studies on mescaline illustrate and support.

a. Alexandre Rouhier: the totality of peyote's alkaloids, for a polyvalent therapeutic action

The 1927 appearance of pharmacist Alexandre Rouhier's *Le Peyotl: la plante qui fait les yeux émerveillés* (*Peyote: The Plant That Fills the Eyes with Marvels*) was a success considering its somewhat obscure subject matter (Rouhier, 1927). He proposed a complete synthesis of existing publications on the cactus, relying on a relatively abundant but hitherto scattered anthropological literature. He also self-experimented with peyote and its different alkaloids to give a description of their precise physiological and psychological actions.

From the book's outset, Rouhier insists on peyote's therapeutic potential. Peyote buttons, and later mescaline, had been experimented with by medical researchers as early as the late 1900s. But Rouhier, following the German chemist Arthur Heffter, proposed a comparative study of the physiological effect of many of its constituent alkaloids, including mescaline but also anhalonidine, peyotline, anhalonine, and lophorine (Perrine, 2001). He thought the convey between the alkaloid content of the plant and the dosage of pharmaceutical preparations, especially of pure mescaline.

> "English and American experimenters mention only the number of "buttons" or the weight of the pharmaceutical preparation employed, without relating them to any alkaloid content. Heffter's test and ours alone allow us to estimate that 0.20 grams of pure mescaline or 0.75 grams of total alkaloids, represented by their equivalent in dry drug or in extracts, are necessary to obtain the visual manifestations of sacred intoxication and to trigger the process of concomitant phenomena." (Rouhier, 1989)

Finally, Rouhier reflected on "the necessary dose" for different uses, such as for the purposes of its therapeutic effect or what he referred to as "sacred intoxication". He wrote that "the dose necessary to produce 'sacred intoxication' was much higher than that considered therapeutic" and that this higher dose had "never been perfectly established". Indeed, the concern over what constituted a reasonable dose capable of producing these visual effects emerged in 1896, when Heffter identified mescaline among peyote's alkaloids as responsible (Perrine, 2001). To determine this efficient dose, Heffter consumed mescaline very gradually and with great caution, from 20 to 150 mg, equivalent to the mescaline alkaloid content of 2–5 buttons. The anthropological literature, with which Heffter was familiar, reported a wide range of the numbers of buttons consumed, from a few to about 30 buttons (According to ethnologist James Mooney's observation among the

Kiowa of Oklahoma) (Rouhier, 1989). Not long after, in the first experimental protocols of mescaline in psychiatry by Alwyn Knauer and William Maloney in New York, the use of 200 mg became normalized (Knaueur and Maloney, 1913).

Rouhier took an altogether different approach, favoring pharmacological preparations of extracts that included the totality of the peyote alkaloids: he was attentive to the variety of Indigenous therapeutic uses and envisaged numerous applications for Western medicine. The dosage was variable according to the indication. Rouhier reported personal experiments with small doses, or more significant doses, going from 40 to 1,000 mg of total alkaloids. In small doses, he noted "a very appreciable physical and mental overactivity," while with large doses, vivid and intense visions are at the heart of the experience (Rouhier, 1989). "Quite massive doses of plants" could, he wrote, serve as a "mental detonator." He advocated such doses in experimental psychology and psychoanalysis. He produced several preparations in the form of powder, tincture, fluid extract, and soft extract or injectable solution. The soft extract, in tablets, and the injectable solution were marketed under the name of *Panpeyotl*, starting in 1927. The tablets of *Panpeyotl* contained 250 mg of plant extract, 33% of which he believed was comprised of the alkaloids; a single tablet thus corresponded to a very weak dosage. He describes giving the subjects of his experiments 8 tablets, or 2,000 mg of extracts. One year following the publication of Rouhier's work, the physician Raymond Briau devoted a medical thesis to the role of peyote in the treatment of anxiety. He used Rouhier's *Panpeyolt* preparation but was very careful about following Rouhier's protocols in his own study:

> "The dosage had to be fixed. And we should not be surprised to have used low doses, too low perhaps, in our first tests. It is that we proposed to determine the useful minimum, seeking in fact to reach, to calculate it, not the obtaining of peyote intoxication in its most complete phase including hallucinatory phenomena, but rather the realization of a pre-ebrious state corresponding to the first phase of mescaline intoxication, according to Rouhier." (Briau, 1928)

Briau experimented on nearly 20 subjects presenting with anxious states, at the hospital and who were for the most part interned, with doses that varied from 250 mg to 1,500 mg of *Panpeyolt*. The doses could be repeated over several days, not consecutive, according to the patients' general condition. The mode of administration was generally in pill form, but some patients were given injections. Following Rouhier, Briau recognized that the drug's action was more intense by hypodermic route, but also shorter in duration. He also admitted to having used doses that were too low, out of caution, but also because he had limited quantities at his disposal. Finally, he expressed optimism about peyote's effect on anxiety, because of the harmlessness of the substance (unlike opiates) and its hypotensive (blood pressure reducing) action. Despite his tentative enthusiasm he feared that "the future of the drug would be limited", due to "the scarcity of plants and their easy depletion if their harvesting became intensive" (Briau, 1928), and he expressed the hope that the active ingredients could be synthesized and used separately, to gain even more effectiveness.

As late as 1956, a Parisian pharmaceutical laboratory was still marketing a Rouhier-like preparation—*Peyotyl*—as a sedative recommended for overwork and depression. In addition to peyote, this drug contained belladonna and henbane extracts and phenobarbital. It was described in a promotional leaflet as: "a sedative and regulator of the vago-sympathetic system, cerebral stimulant, euphoric, antispasmodic, analgesic, antithermal PEYOTYL is a factor of balance, wellbeing and calm; it gets a sensation of relaxation while increasing the intellectual activity." This concoction of multiple components, which could be described as polypharmacy, exhibits an ancient conception of medical remedy, as panacea, which Rouhier strongly believed. His interest in the occult and alchemy certainly explains this conception. However, this particular vision of psychopharmacology was very far from the biological psychiatric approach to medicine that emerged in the 1930s.

b. "Hallucinogenic substance"

In 1919, German chemist Ernst Späth obtained the synthesis of mescaline in the laboratory. It became a "pure white drug" (Jay, 2019), according to the historian Mike Jay, and was made available to researchers, notably in a pioneering way by the German pharmacy company Merck, in the form of an injectable solution. Mescaline now seemed easier to use, its production was more stable, and the alkaloid content more constant. In Merck's accompanying protocols, the suggested doses were increased compared to the first era of trials using mescaline extracted from peyote. British-German psychiatrist Wilhelm Mayer-Gross claimed to have "doubled" his dosages compared to the historical protocols, thus experimenting with 400 mg of mescaline (Mayer-Gross and Stein, 1926).

It was in 1934 that the first French study using synthesized mescaline was published (Claude and Ey, 1934). It was carried out by psychiatrists Henri Claude and Henri Ey, who experimented with it between 1933 and 1937. Their first publication on the subject revealed an experiment using it on both doctors and patients. Mescaline was injected hypodermically in doses varying from 250 to 500 mg, with the authors estimating that "the effective dose is generally around 0.45 g for an average weight adult".

The paper introduced the term "hallucinogen" into the French language. The term, which became widely accepted, is particularly revealing of the tradition of thought to which the authors attached themselves and its association with the psychosis model of the mescaline experience developed by German psychiatrists in the 1920s (Beringer, 1927). The choice of the word revealed a specific emphasis of just one of the symptoms of the mescaline experience: that of visual distortions that were widely associated with the hallucinatory phenomenon and pathology.

Their approach was intended to be non-reductive to mere biological explanations however. In France, Claude and Ey were among the first defenders of conceptions of psychiatric disorders that were psychodynamic (Claude and Rubenovitch, 1940). Of course, they considered it possible that mescaline had a biochemical action. But they also held that its effects on the subject varied according to a specific and personal "psychic terrain." They mentioned the case of one patient who had reacted very positively

to the mescaline experience. The therapeutic value of the action of mescaline thus deserved to be investigated further:

> "Perhaps the most remarkable case we have observed is that of a patient committed for melancholic depression with sensations of depersonalization who recovered her personality, the normal bodily impressions during mescalinization. She was discharged cured a few days later." (Claude and Ey, 1934)

c. Mescaline and biological shock

Despite these early accomplishments, the study of mescaline remained limited in France in the 1930s and 1940s. At Sainte-Anne, it was not until the end of the 1940s when LSD began to be experimented with internationally that mescaline studies took off again. In those intervening years, "biological therapeutics" was approached from the point of view of "shock". As early as 1940, Claude and Pierre Rubenovitch had established an inventory and a research program for their discipline (Claude and Rubenovitch, 1940). Therapeutic techniques used since the 1930s, insulin and electroshock therapy, were described and commented. The theoretical framework was the common idea of a shock, which was believed to put the patient into a new state, and to induce an easing or lifting of the pathological symptoms.

At Sainte-Anne, the first studies of mescaline were carried out by Dr. H. P. Gérard, in Jean Delay's department. In 1948, an article reported on more than 50 experiments conducted since 1946 (Delay and Gerard, 1948). This article is of great help in understanding the choices made for the implementation of subsequent protocols, as its method of administration and dosage were clearly outlined and explained. Delay and Gérard first set out to compare the duration of latency between administration and the manifestation of psychophysiological effects in different subjects *via* either *per os* ingestion or intravenous routes. They noticed that the effects seemed to occur more rapidly by the intravenous route, with reactions as early as 20 min after administration. The oral route resulted in a slower and rather variable reaction, manifesting from 30 min to 6 h after ingestion.

The dosages also appear to have been experimentally determined: the same subject thus received three doses of mescaline at distinct periods, first 200 mg which "gave a state of drunkenness with motor excitation, duration of mydriasis [pupil dilation] 3 h", with 350 mg there were "slight psychosensory disorders, and the mydriasis persisted for 6 h", finally with 600 mg the doctors noted "flushes of onirism [hallucinatory states] and the mydriasis was still sensitive 16 h after the injection" (Delay and Gerard, 1948). With clinical observations attesting to the great physiological variability between subjects, the doctors nevertheless established a fixed dose-per kilogram standard of "7 mg at the beginning, 9 mg thereafter". The absence of constants in the results was, for the authors, quite remarkable.

Mescaline's use for the exploration of the personality remained impossible; the psychosis model prevailed. Delay and Gérard's subsequent publications placed even stronger emphasis on the phenomena of illusions, hallucinations, and the synesthesia encountered during the mescaline experience (Delay and Gerard, 1948, 1950; Delay et al., 1949, 1951). However, their efforts were not only descriptive or phenomenological, but part of a strictly biological reading of the etiology of mental illness. Illusions and hallucinations were considered the result of an "intellectual deficit", in relation to the subject's full or normal capacities, and also seemed useful to doctors researching the literal location of disorders in the brain. Thus, for them: "most of these modifications: lesser resistance of the forms, blooming of the pareidolia, prove a regression of the perception to a lower level" (Delay and Gerard, 1950). In 1953, Diane Allaix defended her medical thesis on the psychopathology of "mescaline intoxication", based on the experiments of Delay and Gérard (Allaix, 1953). Her "very risky" but cautious conclusion posted "the anatomical localization of mescaline intoxication phenomena" and hypothesized the main area of action to be the diencephalon.

From the experimental point of view, these mescaline studies contributed to the first hypotheses in the biology of mental illness and the location of brain disorders. After the discovery of chlorpromazine and its antagonistic effect on the action of hallucinogens in 1952, the following protocols for experimenting with mescaline became more specific: administration was reserved for patients for the purpose of studying its psychopharmacological modalities. Indeed, the Sainte-Anne team published a pioneering work on the mescaline/chlorpromazine antagonism (Delay, 1956a). In 1956 Delay and his team conducted an experiment with 37 male patients, a group composed of a majority of schizophrenics but also of patients suffering from other pathologies as manic-depressive psychoses (Delay et al., 1956). Mescaline hydrochloride was injected, slowly, at a dosage of 10 mg/kg body weight, the subject "fasting, lying down, isolated in a room with an observer [therapist]." The objectives of the mode of administration modalities, by intravenous route on the fasting subject, were clear: it was a question of inducing an important biological modification, a "shock" of the system. The constant presence of the observers was to perform "systematic measurements (which) were regularly carried out immediately before the injection, 10 min afterwards, then half an hour, 1 h, 2 h, and 4 h afterwards," sometimes encephalographic or polygraphic examinations completed the battery of tests carried out. In addition to the biological modifications measured, Delay and his team concluded that "two phenomena" were common to this study: anxiety and difficulty of contact.

Around this time in the east of France, psychiatrist Marie-Thérèse Wilhelm was questioning the context of mescaline administration to which the patients were subjected, and which could understandably justify the reticence, "anxiety and difficulty of contact" described by Delay (Wilhem, 1955). In her doctoral thesis, she described her large-scale protocol involving 80 observations of mescaline and sick patients. She asked for their "the full consent", which "often made it possible to establish an excellent contact and a climate of mutual trust". Her objective was to study the effect of mescaline on different pathologies: schizophrenia, manic-depressive psychoses, delusions, chronic delirium, and dementia syndromes. Employing a similar protocol of 10 mg/kg body weight in fasting patients, she noted variable reactions according to the patients and their pathologies, some showing enthusiasm when faced with the experiment, the anxiety being less pervasive than

in Sainte-Anne. Her conclusion however retained the exaggerated claim that mescaline induced "psychic disorders in the very sense of psychosis". Wilhelm's interest in mescaline was undeniably diagnostic, perhaps even prognostic: aggravating the clinical picture, the substance could become a tool of definite help for the psychiatrist, from the nosological point of view.

d. Therapeutics through "induced psychosis"

In France, mescaline was above all utilized in experimental studies. However, the question of its use as a therapeutic adjuvant was raised again by a team in Nice led by Dr. Paul Cossa. In a paper published in 1956, the team explained the protocol and its stakes as follows:

> "The principle of the method is quite simple: artificial psychosis is induced by the drug, then abruptly stopped after an hour or two by a high dose of chlorpromazine, in the hope that the disappearance of the delusional and hallucinatory phenomena, artificially induced, will be accompanied by the disappearance of the previous psychopathic disorders that the subject might have presented." (Postel and Coss, 1956)

The association of mescaline and chlorpromazine was influenced by American psychiatrist Herman Denber, who presented his research and its positive results in therapy at a Congress of French-speaking alienist physicians and neurologists held in Nice in 1955. The protocol set up by the French doctors was identical to those used in a study carried out in New York by Denber and Sidney Merlis (Denber and Merlis, 1954). The patients received 500 mg of mescaline sulfate intravenously, and after about an hour-and-a-half an injection of 50 mg of chlorpromazine was given, this time intramuscularly. The subjects in both studies also consisted mainly of interned patients, the majority suffering with schizophrenia. These consistencies aside, the recovery of the patients were divergent and the statistics contradictory; the French study showed "disappointing" results. Why such a difference?

First, Denber did not operate with the notion of "mescaline-as-experimental psychosis," and postulated more an interest on mescaline as an adjuvant to psychotherapeutic analysis. However, this concept of "induced psychosis" was featured in the title of the article by Cossa's team. Moreover, Denber's protocol included a long psychotherapeutic follow-up, including to see the patients the afternoon of the day of the mescaline experience, the next day, then once or twice a week for as long as possible. This approach reflected a therapeutic relationship, and the self-experiences of the members of the team allowed empathy with the subjects. In Nice, patient follow-up was probably shorter, its duration perhaps not allowing for sufficient hindsight; many of the experiments dated from the end of 1955, and were reported in July 1956. In their conclusion, the authors themselves questioned "the operating mode" (Postel and Coss, 1956).

The modus operandi was in question, as was the conceptual framework. Indeed, Cossa was motivated by Delay's formulation of biological shock, which is quoted extensively. The actual conditions being faced by the patients, their psychological improvement, or their cure after the experiment, were only very briefly considered. Delay had suggested that the fact that patients were generally anxious during mescaline experiments represented an obstacle to the improvement of their conditions (Delay et al., 1956). But from a Freudian perspective it was precisely the anxiety caused by mescaline, and the way in which this anxiety could be supported and analyzed in a therapeutic process, that Denber valued (Denber, 1956).

Another experiment with the mescaline/chlorpromazine alliance was managed at Sainte-Anne, by a young doctor, Martine Ropert, doing her thesis under the direction of Delay in 1957. This was the last mescaline protocol at the hospital. Following the same dosages as the team in Nice, and particularly aware of Delay's previous work, as well as of international research, Ropert concluded her study in these terms:

> "If we compare the therapeutic results (of whatever degree) of simple mescaline shock and the mescaline-chlorpromazine association, we see that it is above all in the 'improvement of contact' group that the positive effects of this association are to be found, whose interest, we repeat, seems to us here to be more psychotherapeutic than biochemical." (Ropert, 1957)

However, the therapeutic relationship was hardly investigated at Sainte-Anne. Although Ropert acknowledged the necessity of "a reassuring contact" with subjects to ensure the good progress of the mescaline experiments, her descriptions of both during and after the experiments, as well as patient follow-ups, affirm the pre-eminence of the biological framework at the expense of the patient/doctor relationship. The example of *Observation 8* is thus revealing. The patient was a 25-year-old man with a "mental automatism syndrome" and "ideas of persecution". It is specified that in the service "he remains anxious, isolated, reticent.... contact with the doctors is dominated by embarrassment, distrust". He received a first intravenous dose of 600 mg of mescaline on December 20, 1955. A quarter of an hour later he expressed his anxiety:

> "I can't take it anymore. These are experiments that you make, I don't know if you'll succeed. I'm in pain, I'm aching all over, I feel bad. I'm afraid of going crazy, of not coming back. I'm afraid of going crazy, of dying. To become crazy, it's to see such things. They are impossible to tell... they don't look... it's not human anymore. You're afraid you won't be normal again, you're afraid you'll die. You should stop this, you're beyond your means, you're beyond human possibilities. You don't know what you're doing. It's been going on for centuries." (Ropert, 1957)

Ropert noted that a week after this experience, the patient showed a reluctance regarding the experience, with a strong fear that it would be repeated. The patient was then subjected to a insulin shock treatment in January 1956. On March 22, and against his objections, he underwent a second intravenous injection of 500 mg of mescaline, followed an hour-and-a-half later by an intramuscular injection of 50 mg of chlorpromazine. A week later, he began a daily course of neuroleptic medication, with an oral dosage of 8 mg of reserpine (a neuroleptic). During this treatment,

a third experience of mescaline was imposed on him, this time a strong dose of reserpine had been given to him before. His case shows how patients undergoing psychedelic treatments were also subjected to a whole arsenal of biological treatments.

LSD

The study of LSD in France began in 1951. From the beginning, French research was characterized by a commitment to low doses.

a. At the outset, some innovative proposals

In 1953, French neurologist and epilepsy specialist Henri Gastaut studied the effects of LSD on the human brain using an electroencephalogram. The study was conducted on 12 "normal" men between 25 and 50 years old, with an oral dose between 40 and 60 μg. In addition to their experiments on the brain, Gastaut proposed curative hypotheses linked to the administration of LSD. By altering mood and increasing the rate of information experienced by the depressed subject, he saw "important therapeutic consequences" to the use of the substance. He supposed that a dose "just liminal, and perhaps infraliminal (i.e., imperceptible, of the order of 0.25 gammas per kg of weight)" would improve subjects' psycho-affective and psycho-motor behavior. LSD could thus be a modifier of a person's "affective tone" at doses imperceptible to human consciousness. He also noted that "If, until now, success has not crowned all the therapeutic trials carried out with LSD 25, it is probably… because they involved excessive doses" (Gastaut et al., 1953).

Four years later in 1957, psychiatrist Daniel Widlöcher published the first thesis in France on LSD (Widlöcher, 1957). Although his female patients reported feeling more anxious than euphoric (five anxious cases compared to 4 euphoric), the young doctor believed that by varying the experimental conditions it was possible to improve patients' responses and reduce their anxiety. Widlöcher noted patients feared being left alone and insisted that "psychological preparation seems to play a role and in cases where the patients had the opportunity to be better informed and better prepared for the experiment, it went more smoothly". He criticized the expert status of the psychiatrist in the management of the sessions: "The psychiatrist will *himself* learn from the testimonies of the subjects under LSD to possibly modify his attitude toward the patient". By listening to the patients' descriptions of their own feelings during the experiment, "we will learn to know better the attitude to adopt toward these patients" he wrote, calling for a reconsideration of the "classic attitudes" of therapists caring for people under the influence of LSD. Widlöcher was perhaps directly targeting his thesis supervisor, psychiatrist Jean Delay, who showed little empathy for his patients (Dubus, 2023). Finally, he discussed the impact that the practice of experimental psychosis could have for the evolution of care for the mentally ill: "It frequently happens that acute psychotic patients are placed in similar conditions [solitude, darkness, inaction]. These classical attitudes probably deserve to be partially revised, if we consider what experimental psychosis teaches us."

These considerations marked a step forward in French psychedelic therapy, however Widlöcher continued to believe that high LSD doses were unnecessary to benefit patients and noted that low doses allowed for stronger control of the situation and better verbalization by patients. Strongly influenced by psychoanalysis, in a French context that was rather opposed to this approach to psychotherapy, he particularly valued the exchange and intersubjective relationship with the patient. Widlöcher insisted on repeated sessions so that the emotional abreactive manifestations caused by reliving the past could be brought to the fore, at the expense of psycho-sensory effects alone, which tended to most impress subjects first encountering the substance. He added that only psychotherapy and joint analysis between the therapist and the patient could ensure "the happy effects of LSD's action."

b. Experiments at Sainte-Anne and Bonneval: toward a definitive method

The hypotheses of Widlöcher, who left Sainte-Anne immediately after his doctorate, did not appear to influence his thesis supervisor, nor Henri Ey, in their own experiments on LSD.

Delay was among the French psychiatrists most involved in research on shock treatments, which designed to break down the mental structure of patients in various ways to "reconstruct" it non-pathologically. In the 1940s he examined narco-analysis and amphetamine shock, a method that plunged subjects into a half-sleep by the administration of barbiturates or amphetamines and who were then prompted to involuntarily express their memories and thoughts. Patients did not consciously participate: therapists used questions to uncover information that was hidden in ordinary states of consciousness. Patients referred to this method as the "truth serum." Rather understandably, these techniques posed important ethical problems, which were raised when Delay presented it to the Société médico-psychologique in 1946 (Delay and Shentoub, 1946). How far should a psychiatrist push in his exploration of the psyches of patients at his mercy? The psychiatrist Henri Baruk, who condemned these methods, described them as "a rape of the personality" (Baruk, 1950).

Placing LSD sessions in the same category as narco-analysis and amphetamine shock therapy, Delay proposed the term *oniro-analysis* as "onirique" means "related to dreams" (Delay et al., 1947). In this therapeutic model, whatever the substance the intention was the same: to provoke a shock to force the patients to surrender (Delay, 1951). Ey, who also adopted this conception of LSD use, noticed in 1959, underlining this information in the text, that in certain cases of neurosis, patients expressed "very traumatic past situations that she had never before revealed during previous hospitalizations" others "until then hidden" (Ey et al., 1959). He also avoided high doses, being satisfied with administering 1 to 2 μg/kilo and often not exceeding 100 μg per session. Whatever the psychic "shock" being produced, it was not equivalent to the mystical psychedelic experience described by American therapists. Delay's approach was to simply let the substance take effect for an hour or two, then end the session with an injection of chlorpromazine. The aim was to create a state that allowed access

to patients' hidden psychic material but not to guide them through a transforming experience. For Delay and Ey, LSD made it possible to carry out an in-depth examination of the subject, but did not present any real therapeutic interest.

These researchers also preferred to use intravenous administration, whereas many therapists had throughout the 1950s been using the oral administration, which allowed for a more gradual onset of the effects, which was less brutal for the patients. It is interesting to note however, that French doctors administered LSD orally during their own self-experiments.

This commitment to the shock therapeutic model in France made it an outlier in LSD experimentation in this era, with most international researchers abandoning the framework from soon after the first LSD studies. As early as 1949, Swiss psychiatrist Gion Condrau had concluded that he had been unsuccessful in creating a real shock using it. His own studies included doses as large as 280 μg, which he would not consider moving beyond for fear of producing too strong disturbances (Condrau, 1949). The following year, American researchers Anthony Johnson and Warren Busch insisted on an essential difference between shock therapies and those using LSD: in this last model, they noted the absence of confusion of the subject and therefore his or her active and conscious participation, i.e., voluntary (Busch and Johnson, 1950). Meanwhile the Italian psychiatrist Rodolfo Belsanti wrote in 1952 that even with remarkably strong doses (up to 480 μg), shock played no perceivable role: "Concerning a possible shock-type therapeutic action of LSD, my impression is that it must be totally excluded" (Belsanti, 1952).

We are thus struck by the absence of reflection within the French teams working with LSD concerning the notion of "set and setting", which had been emerging particularly in Anglo-American countries since the mid-1950s. Although most of them practiced self-experiments, this did not lead to a questioning of the protocols, as was the case with other therapists. French practitioners engaged in the study of LSD are distinguished by a distant, almost insensitive approach to the patients (Dubus, 2020); the "guinea pig" status of their experimental subjects is also felt in all their work. Delay was aware of the research conducted by other therapists that aimed at giving subjects a positive and transformative experience, but this did not seem to interest him, even writing about his own work that "the possibility of a rich hallucinatory experience or of unspeakable beauty is not frequent for the doses used" (Delay and Benda, 1958). Elsewhere he describes the effects experienced by his patients on LSD in a sub-section entitled "torture".

The early psychedelic French scientific paradigm was thus particularly unique and tinted with nationalism compared to the international research of the time, in effect ignoring the appearance of new theories (in the field of psychiatry but also more broadly at the philosophical level) on psychedelics. This indifference to psychedelic thought outside of France is memorably captured in an article by Delay in 1956 that described Aldous Huxley as a "humorist", and his just-published essay *The Doors of Perception* as "science fiction" (Delay, 1956b). A more specific study remains to be carried out to investigate this isolationism or even this hostility of at least a part of the French medical profession to theories developed elsewhere.

c. Delay's influence

French doctors were thus confronted with the insoluble paradox of maintaining a paradigm that understood LSD as a *psychotomimetic*—psychosis mimicking, which at its worse meant violent and pathological—and yet still cling to the possibility that these phenomena were therapeutic. However, during the 1960s, other teams tried to evaluate the therapeutic value of LSD to treat two types of patients: men with alcohol-resistant addiction, one of LSD's main indications at the time, and homosexuals, who were then considered as mentally ill who needed to be cured.

In 1960, Dr. Roland Lanter, in his psychiatric hospital in Rouffach, in northeast France, began his experiments with alcoholics (Lanter et al., 1962). He administered mescaline or LSD in high doses via intramuscular injections ranging from 100 to 400 μg for LSD, and 600 to 1,400 mg for mescaline. Lanter considered that below the minimum indicated doses, "there are often only simple neurovegetative reactions". According to the case studies presented, many patients took refuge in mutism as a defense mechanism. In Anglo-American countries, LSD doses in cases of alcoholism were generally 200 to 600 μg (Cohen, 1966; Dyck, 2006). Some authors mentioned doses of 1,000, 1,500 and up to 2,000 μg but these high doses were rare, and many therapists questioned the appropriateness of these quantities, as can be seen in particular in the discussion following the paper by Edward Baker in a conference in 1965 (Baker, 1967). In Lanter's unit, therapists practiced the "disgust cure": traditionally, the aim was to induce disgust in alcoholics by associating the intake of alcohol with an unpleasant feeling, originally by administering an emetic (vomit inducing) drug with the drink. Lanter imagined associating the intake of alcohol with an intense hallucinogenic experience, understood as unpleasant.

In 1965, one of his interns, Jean Weil, published a thesis about treating 69 male patients for alcoholism with only LSD (Weil, 1965). A key phrase he used to describe his method was "cure by anguish". It was a question of making the patient acknowledge and understand the "anguish" at the origin of their dependence on alcohol. To do this, it was necessary to find the "motivations of the alcoholic. It is with the aim of facilitating this research that we thought of using *psychodysleptics* as a means of revealing the more fundamental structures, of making them burst". "Psychodysleptic", meaning "mind disruptor", is the terme coinned by Delay to classified mescaline, LSD and psilocybin (Dubus, 2021). These new kinds of disgust cures were described by Weil as "very traumatic".

He explained that the panel of patients was originally larger but that after one or more sessions many of them "refused to continue a treatment that they considered too painful". Weil's approach was to increase the doses even more than his supervisor, going up to 830 μg. He concluded that the higher the doses, the better the results (37.7% of "very good results" after 2 years of follow-up). The outcome was somewhat worse for group administration, as therapeutic contact could be made less easily than individually, with patients adopting what was interpreted by the author as "collective defensive attitudes in the form of contagion reactions, manifested by unmotivated and contagious laughter or by unanimous refusal to continue the treatment". In a group setting, the patients thus found support to endure this treatment through anguish and to

fight against these sessions. Although Weil declared that he wanted to carry out psychotherapy with his patients, he also admitted that he did not speak the same language as these men who spoke in a dialect closer to German than to French. It was therefore difficult to communicate them the way Widlöcher and other had recommended.

In his 1960 study, Lanter not only administered LSD to his alcoholic patients: two teenagers, placed in his psychiatric hospital because of homosexual behavior, were also subjected to it. The psychiatrist hoped that LSD could provoke in Michel, 15 years old, and Bernard, 18, "delirious flashes" to bring to light the "fundamental fantasy structuring the morbid personality", and to push them toward heterosexuality. Lanter used the same protocol as he had with alcoholics: the psychedelics were injected intramuscularly or intravenously, in high doses ranging from 200 to 1,400 mg for mescaline and 100–800 μg for LSD. In 1959 Sutter and Pélicier recommended not to exceed 500 mg when administering mescaline (Sutter and Pélicier, 1957); the maximum dose used by Lanter was thus almost tripled. Moreover, all the French authors recommended doses lower than 100 μg of LSD. Shock was sought: the doctors noted a "stupor" and agitation of the adolescents, their screams, the fact that they tore their sheets or clung to the people present, asking for help. Lanter does not describe trying to reassure his patients, instead recommending that doctors "adopt an 'aseptic' attitude" to facilitate the "demystification" of the behavior of these "sexual perverts" (Dubus, 2022).

d. Another minority path

If the orientation chosen by the Sainte-Anne school, represented by its two great personalities, Henri Ey and Jean Delay, had profoundly marked the method of using psychedelics in French psychiatry, locking it into the models of experimental psychosis and therapeutic shock, some French therapists were nevertheless sensitive to the techniques of set and setting.

In 1961, the psychologist André Virel conducted his first "mental imagery" experiments under LSD with an academic group named *Groupe d'études du Rêve Éveillé Dirigé* (Directed Daydreaming Study Group) (Desoille, 1963). Ten years later, Virel published an article describing their protocol more precisely: while patients might receive doses of 100 μg by injection, the scientists only took small doses of 10 to 30 μg orally during self-experimentation, before experimenting with larger doses, up to 300 μg (Virel, 1971). Later, Virel carried out experiments with three subjects submitted to two LSD sessions starting with a dose of 25 μg with more to follow "calculated by the subject's response to the low dose". According to Virel, the *Groupe d'études du Rêve Éveillé Dirigé* did not achieve good results and "had to fail for wanting to direct subjects' mental imagery too much". Virel would later use music (classical and African) during sessions with his subjects and was satisfied with the therapeutic results.

Virel differed from Delay by his care to avoid producing a shock: "By proceeding by progressive doses starting from the smallest, one arrives in two or three sessions to determine the optimal dose for a given subject without having at any time risked triggering the 'shock' signaled by the use of medium doses". The number of patients treated in this way is not known since Virel also took care of patients outside his office. A psychologist associated with Virel but who did not participate in the group's LSD sessions, thus remembers Virel taking his patients to his house in Normandy for a weekend to administer the substance in a "more pleasant" natural setting (Odile Dorkel, personal interview, 02 November 2022). The sessions there were supervised by a doctor named Jean-Claude Benoît, who had been Delay's intern. Benoît's publications on LSD indicated his desire to work on the precepts of set and setting, but the hospital setting at Sainte-Anne did not allow him to implement them (Stévenin and Benoit, 1960; Benoit, 1963). These unorthodox practices held at Virel's house were not published.

Another French therapist seems to have been truly influenced by the precepts of set and setting and to have distinguished himself from Jean Delay's therapeutic model. This is the psychiatrist referred to by his colleague psychiatrist Jean Thuillier in 1981 as "Bernard P." Despite numerous searches, we have not yet been able to discover any archives concerning this key figure in the history of LSD in France. We therefore only know about his practice through Thuillier's testimony: we do not know where he worked, what doses were administered, for what type of patients.

If some French psychiatrists were inspired by psycholytic theories, for example by administering progressive doses, only Bernard P. adopted the psychedelic therapy as Thuillier tells us:

> "It is this last technique that my friend Bernard P. used with good results. I often attended his experiments and helped him to control them. He obtained remarkable cures in certain cases of neurosis and psychosis, by using the phase during which the subject subjected to the L.S.D. was in a state of hyper-suggestibility. The patient, who was then reliving the dramatic event that generated his illness, could free himself from it during an emotional discharge, and even more easily since he was at this precise moment deprived of any critical spirit and accepted everything that his doctor suggested to him as the primary truth.
>
> This was really the best part of L.S.D., this remodeling of a consciousness, first destroyed or emptied, washed, then reconstructed and furnished with the good word of the psychotherapist that the patient never thought of questioning." (Thuillier, 1981)

One senses in Thuillier's account the influence of shock therapy still present in the conception of the treatment (notably *via* the idea of "reconstruction"); this inability to think of the effects of LSD outside this framework caused a serious misunderstanding between the two friends, leading in part to Bernard P.'s suicide, an important event in the medical history of LSD in France. From then on, not only did the most influential French therapists fail to find therapeutic value in the substance, but it was blamed for disturbing some individuals so much that it drove them to suicide.

Psilocybin

It was in France that the first medical experiments with the mushroom alkaloid psilocybin took place. Anne-Marie Quétin's

medical thesis of 1960, describes how eminent mycologist Roger Heim, director of the *Muséum national d'Histoire naturelle* (MNHN), personally arranged for psilocybin to be sent to Sainte-Anne, both in tablet form and as an injectable liquid. It was sent to Delay's department by the Sandoz laboratories in Basel, beginning in July 1958 (Quétin, 1960), which is to say very quickly after Albert Hofmann and his colleagues had identified, extracted, and synthesized the Mexican sacred mushrooms' active principles psilocybin and psilocin, publishing their results in 1958. Psilocybin itself has an earlier entry into France, however, beginning with the ingestion of cultivated mushrooms for scientific research purposes.

a. The preliminary self-experiments and the concern of the dose

The first documented intentional ingestion of psilocybin mushrooms outside America were in France by Heim himself. In the mid-1950s he had accompanied Gordon and Valentina Wasson's expeditions to southern Mexico in search of psychotropic mushrooms (Heim, 1956). Heim had previously been interested in the syndromes of intoxication with mushrooms, eating samples of fly agaric in 1924 and experiencing "hallucinations in black" (Heim, 1924, 1978). His self-experiment with psilocybin mushrooms happened on May 18, 1956, shortly after he received a letter from Mexico from ethnomycologist R. Gordon Wasson. Wasson wrote to him that he had finally experienced the famous sacred mushrooms of Mexico—*Teonanácatl*. Wasson warned: "the effects of these mushrooms are beyond belief!" (Wasson, 1955). Heim had received samples and spores from Wasson a few years earlier, managing to cultivate them in the MNHN's cryptogamy laboratory. On the fateful day, he ate 120 grams (five specimens) of fresh *Stropharia cubensis* at his home. Presumably, the dose was chosen arbitrarily: it does not appear to correspond to an Amerindian use, since the *curanderos* and *curanderas* of Mexico only consumed them in pairs, and especially since this particular species, probably imported to the American continent by the European colonizers, was the least valued (Wasson and Wasson, 1957). Whatever their relative quality, Heim later described having consumed "twice too many specimens" (Thévenard, 1964), during that first experience, which led him to "cling to the fireplace" (Heim, 1957).

The quantity of mushrooms ingested in self-tests and experiments on healthy volunteers were adjusted downwards to align with those used by Mexican practitioners, following Heim's trip to Mexico in July 1956. Thus, for an experiment with *Psilocybe mexicana* carried out in Paris on April 14, 1957, which he described as "quite notable," he ingested 32 mushrooms, knowing that Wasson had learned that Mazatec *curanderos* could consume up to 15 to 20 pairs (Wasson and Wasson, 1957). Heim considered 16 pairs to be in the low end of the doses reserved for *curanderos*. In a passage devoted to this species in the French documentary film *Les champignons hallucinogènes du Mexique*, filmed in 1961, he states that "it takes 35 specimens to experience the optimum hallucinatory effects" (Thévenard, 1964).

It is understandable that after his first experience with a relatively high dose, Heim came to question the exact, or optimum dose. He was also attentive to the diversity of responses across individuals after consuming *Psilocybe caerulescens* during a collective ceremony in Mexico with other Westerners, after which he described an "exceptional sensation of wellbeing", a "remarkable lucidity", an aptitude for "a rare cerebral and physical activity" (Heim, 1957).

Heim's assistant at the museum's cryptogamy laboratory, the mycologist Roger Cailleux, whose expertise in the cultivation of hallucinogenic Mexican mushrooms proved essential, also carried out experiments, but using very small quantities (Heim et al., 1958). Perhaps impressed by Heim's accounts of higher doses, he thought it would be interesting to try and approach *P. mexicana*'s threshold of inactivity. He began by absorbing just three dry medium-sized mushrooms, weighing 0.25 g for his first experiment, 0.5 g for his second. These tests with small doses allowed him to conclude that the action of this species can be translated into purely visual phenomena, without manifestation of "any index of depersonalization": it was indeed a question of exploring the phenomenology of the experience according to the dose. He carried out a third test with 2 grams of dry *P. semperviva* and regretted not having felt a "happy clarity of mind and exceptional wellbeing", but rather "an indefinable malaise, similar to that which can follow a nightmare".

Together with the ethnographic data collected in Mexico and the reports of preliminary self-observations made in Switzerland by Albert Hofmann et al. at Sandoz with Mexican mushrooms or pure psilocybin (Heim et al., 1958), these Parisian reports constitute the very first information on the psycho-physiological effects of psychedelic mushrooms and psilocybin. Their experiments testify to the importance of dosage, but neither the question of the psychological preparation of the experimenter nor that of the context of the experiment appear. These data, although perceived as being of great interest for orientation, were judged "very insufficient" by Delay et al. (1958). On the one hand, because the self-experiments were judged incomplete without the careful supervision of a "psychopathological observer"—it was not a question of having a person stand-by to reassure the self-experimenter, but rather to allow the collection of scientific, objective, quality data. On the other hand, it was necessary to ensure these isolated data were gathered according to the systematization of the experiment under well-controlled conditions on enough subjects.

b. Cautious self-experiments of psychiatrists with psilocybin

In July 1958, soon after psilocybin was produced by the Sandoz laboratories, Sainte-Anne had tablets and injectable solutions of this new substance. Jean Delay's team was then able to conduct a large study of its use, exploring its physiological and psychic action and evaluating its therapeutic action; this was, indeed, a pioneering study at the world scale.

It was designed to use the drug on both "normal" healthy volunteers and on "mentally ill" people. The very first published data on the psycho-physiological and clinical study of psilocybin, from Sainte-Anne in 1958, notes that out of 16 protocols carried out on 13 normal people, the minimum dose was 5 mg and was

administered to only one subject (Heim et al., 1958). Looking closely at the protocols, there is no indication that the doses used were calculated to approximate the doses of mushrooms used by the Mexican peoples, or according to the self-experiences of Westerners like Wasson or Heim.

Most (11) received a dose of 10 mg in a single session. Among these "normal subject" trials, there were two protocols with a dosage of 11 mg, one with 12 mg, and one with 14 mg. It is very likely that most of these normal subjects were doctors themselves: indeed, we learn in a 1961 publication on the therapeutic implications of psilocybin by the same team (Delay et al., 1961), that out of 47 volunteers qualified as normal who took part in the self-test at that time, 35 were doctors. The dose administered was 10 mg, a dose that seems perfectly arbitrary, for a total of 52 protocols. Most of the volunteers tried only once, but in six cases there was a second attempt. In fact, the article states that "normal subjects were given a dose of 10 mg orally; in a few cases where the reaction was minimal, a second trial was made with a higher dose, never higher than 14 mg". The minimum dose of 5 mg and the common dose of 10 mg were thus apparently decided randomly, in relation to the decimal numeral system, rather than to empirical data derived from the previous trials with mushrooms.

As for the notion of an upper limit not to be exceeded, it was mentioned by Delay as early as 1958 in a presentation he gave at the Congress of Psychopharmacology held in Rome. Presenting for the first time his team's psilocybin clinical trials, he explained that "most of the trials on healthy volunteers were done with 9 or 10 mg of psilocybin, only one with 14 mg, only one with 15 mg.... [I]n spite of the transient character of these states, their nature must incite us to consider this dose of 15 mg as an upper limit not to be exceeded" (Delay et al., 1959). This 15 mg dose limit of psilocybin is certainly much lower than the comparative doses used in Mexico in the ceremonies in which Wasson and Heim participated, as well as to large doses corresponding to Heim's self-experiments mentioned above. Delay and his colleagues were therefore surprisingly cautious with psilocybin.

In a 1958 letter from Dr. P. J. Nicolas-Charles to Heim, the doctor informs the mycologist that, "concerning the clinical study of the psilocybin preparation that [he] was given," he still "does not find any hallucinosic [sic] effect" (Nicolas-Charles, 1958), so much so that the Sandoz laboratories in Basel offered to analyze the product he had used and to send him back some "fresh product". He told Heim that Hofmann's team even doubted that "this compound [psilocybin] sums up the properties of the mushroom". To make direct comparisons with psilocybin, Nicolas-Charles asked Heim for some mushrooms to study for himself. Although we have no information on the outcome of this attempt to compare the effects of psilocybin with those of mushrooms, the letter bears handwritten indications in pencil, in Roger Heim's handwriting: "10 g", "0.6", and "0.1". Did he try to calculate the amount of psilocybin in a given weight of hallucinogenic mushrooms cultivated at the MNHN? It is surprising that in the first French medical publications on the clinical study of psilocybin, there is no trace of any reflection on the equivalence between the doses of mushrooms used in the preliminary self-experiments and the doses of pharmaceutical psilocybin used in the hospital experiments. There is certainly a strong disciplinary compartmentalization between the actors of purely medical research and the mycologists and experimenters.

c. The influence of the context on the experience

One of the "normal" volunteers was not a doctor: the influential poet Henri Michaux was also a subject of experiment at Sainte-Anne. In an essay published in 1960 (Michaux, 1960), Michaux evokes "the extreme indecency of being under the effect of a drug in front of strangers who have not taken it". During the experiment, he heard for example a doctor whisper into the ear of another: "typical case of depersonalization". In a letter to Heim thanking him for allowing him to participate in the psilocybin experiment, he described the awkward presence of "four medical witnesses in a director's office.... In spite of their discretion, they created a situation which was very unfavorable to me" (Michaux, 1955). Michaux characterizes this rather disordered and intrusive context without ambiguity as "very unfavorable", thus illustrating the French experimental approach that appeared ignorant of the role of context in allowing a positive experience. Heim and Michaux agreed that the latter could repeat the experiment at home, with a lower dose of 4 mg.

This brings us back again to the question of how to consider the extra-pharmacological parameters affecting a person's experience with psilocybin, in this case, the reassuring presence of a person—or lack thereof—who could help prevent the experience from being unpleasant. In the entry "self-observation #28" in Anne-Marie Quétin's thesis, the psychologist who entered the room to make take tests was considered "a torturer" (Quétin, 1960). Quétin stresses *"the role played by the presence or absence of a third party,"* noting that "the attitude of the subject toward the observer can be very variable, sometimes opposite". One subject stated that "the presence of a third party is often deeply disturbing" and another commented: "I am a little annoyed by the prosaic nature of the examiner, his worries as a drudge who.... stops my momentum with questions".

Quétin concluded: "The attitude of the doctor, his questions, the renewed physical examination... are all factors which bring the subject back to 'reality,' momentarily suppressing the delusional belief. Therefore, we tried to reduce as much as possible these different examinations and why we tried to keep a perfectly neutral attitude during the whole test". This conclusion illustrates the way in which the phenomenology of the experience is perceived: it is at this time a "delusional belief", i.e., a manifestation of the register of the pathological, rather than as being psychological states that give rise to perspectives that can escape norms around what is normal and pathological. It also reveals an explicit position on the importance of the context in the psychic effects. But this "perfectly neutral" attitude, thought to allow the objectification of the effects, could be experienced by participants as painful, as for example in the case of a Spanish doctor who in 1958 underwent two self-experiments with LSD and psilocybin at Sainte-Anne and who afterwards wrote of his examiners: "They had forgotten their human nature and did not even remember the defenseless condition of the man they had in front of them" (Toscano Aguilar, 1959). The objectification of the drugs' effects thus led to the objectification of the people who took them, certainly made even more painful while experienced in the psychedelic state.

Quétin also emphasized the difficulty of subjecting volunteers to the study of biological modifications caused by psilocybin. She

observed that data gathering such as multiple blood tests and the use of electroencephalography modified "considerably the test of Psilocybin" (Quétin, 1960). Some volunteers also complained about the "boredom" or even the "irritation" caused by the psychological tests that were conducted during the sessions, which required moving around the hospital, including taking stairs. To the extent that the importance of context was noted, the parameters changed for the psilocybin experiments were to avoid repeated blood tests which "'stop' the emotional phase so interesting for the psychopathological study" and by sparing most patients from electroencephalographic testing. These changes illustrate the trial-and-error method used by the Sainte-Anne psychiatrists, who would apply corrections to the protocols as they went along.

d. Experiments with psilocybin on the mentally ill at the Hôpital Sainte-Anne

In addition to her account of experiments on "normal subjects", Quétin also describes protocols initially carried out on 72 patients, with a very lopsided gender balance: 64 women and 8 men, and a total of 80 protocols. Her final clinical study included 61 patients, excluding 11 because of "poor examination conditions". The details of these failures are not given, but we know, for example, that an anorexic and depressed woman was left alone in her room after having received an injection of psilocybin. She was treated with chlorpromazine and therefore the doctors thought that her reaction would be limited to somatic modifications.

This particular case happens to constitute one of the rare instances where the patient was said to have undergone an "indisputable improvement" following the administration of psilocybin. After injecting her intramuscularly with 8 mg of the substance, they sent her back alone to her room where she felt herself "to be in paradise" and experienced a certain transcendence of time. In fact, this patient gave a written account of her experience in numerous poems with titles evoking euphoria, even mystical ecstasy: "Alleluia, Plenitude, Spring, Eden, Euphoria" (Verroust et al., 2021). The doctors stopped her treatment with chlorpromazine and 3 days later injected her again with 8 mg of psilocybin, this time under medical supervision. This second ordeal led to an influx of forgotten memories which, according to the doctors, allowed her to expose the psychogenesis of her illness and her emotional traumas. The improvement of the patient's general condition, including a regaining of weight and a "reversal of mood with euphoria" resulted in the publication of a case study.

The patients who received psilocybin at Sainte-Anne were interned and presented a diversity of mental affections classified in five groups: "schizophrenics", "chronic deliriums", "manic-depressive psychoses", "mental debilitates", "neuroses/psycho-neuroses", and "psychic imbalance".

The faster action of psilocybin injections led doctors to prefer it to the oral route (*per os*). The average doses used were: 9.26 mg *per os,* 8.36 mg subcutaneously, 9.07 mg intramuscularly. The doctors administered psilocybin before any treatment, except when the treatment was already underway, in which case it was interrupted, with a few exceptions such as the anorexic patient, which made it possible to study some drug interactions. Consequently, their reactions were very diverse, but the improvement to their symptoms was only observed during the duration of the experiments, or only briefly in the following days.

If the psilocybin was "presented to them as a means of release, or as an additional test necessary for diagnosis", the fact that psilocybin could be administered on the first day of admission to the hospital suggests that the doctors did not consider it necessary to prepare the patients psychologically, beyond simply providing this information. Moreover, the reading of the 19 observations recounted in Quétin's thesis that give the most characteristic descriptions of the action of psilocybin, shows that the anxiety episodes largely dominated over the euphoria episodes. Above all, it shows that the effect of psilocybin was perceived as a exacerbating factor in the symptomatology. Thus, Quétin acknowledges the "obvious diagnostic value" of psilocybin. Its therapeutic action was admitted, given the improvements that were momentarily observed, but Quétin underlines that "the trauma that constitutes this experimental psychosis, the partial amnesia that follows the confuso-oniric phases, seems to bring a considerable handicap to the use of psilocybin".

In their 1961 article on the therapeutic implications of psilocybin, Delay, Pichot, and Lempérière also conclude that "psilocybin can be used as a diagnostic method". While its therapeutic interest is less developed, they distinguish however between a direct biological action on mood as well as a psychological action. Anyway, the French medical literature on the therapeutic interest of psilocybin seemed to have already come to an end and there were no further published experiments with psilocybin for therapeutic purposes. As Delay and his colleagues and students were more versed in biological understandings of mental illness, they held that the gap between normal and pathological psyches should be corrected not by psychotherapy but rather by psychopharmacology. We then come back to the question of the effective dose.

e. "The stronger the dose"... and the better the context

The psilocybin doses established at Sainte-Anne differed from those used by an emerging figure in psychedelic research on the other side of the Atlantic, the psychologist Timothy Leary. On June 30, 1961, while still at Harvard, he wrote to Delay. In his letter, Leary strongly emphasized the therapeutic value of psilocybin. He outlined the work he had done with prisoners. His good results, and the insightful potentialities of the substance, owed according to Leary, as much to the favorable context of the experiments (supportive environment), as to the use of strong doses:

> "We have, incidentally, used stronger doses than have been reported in the literature. Twenty milligrams is our standard dose and we have used up to 40 mg. The stronger the dose the more pleasant and insightful the experience. The two percent who found the experience unpleasant ingested lower doses." (Leary, 1961)

We are not aware of whether or not Delay responded to Leary on this very significant difference between the doses used by the two researcher groups.

Another protocol carried out at Sainte-Anne over the same period also indicated a reflection on the context of psilocybin administration. It was conducted by René Robert, as part of his medical thesis (Robert, 1962). He took 27 amateur or professional artists as subjects, and concentrated on the analysis of the 183 artistic productions made during the protocol. The psilocybin was then administered to the volunteers, in tablets, according to the standard dose of 10 mg defined by Delay. At first, Robert worked within the hospital: after they ingested the psilocybin, he asked the participants to start a creative activity, such as drawing or painting. However, he soon noticed their difficulty maintaining such activities. He discusses the need to reorient the framework of his research, and he suggested carrying out these protocols outside of the hospital, at the artists' homes or studios, reassuring places considered to be more conducive to making art.

Psilocybin research in France at the end of the 1950s and beginning of the 1960s reflects a moment in the history of psychiatry when the biological causes of mental illness were being sought: there was an overlap between exploratory psychedelic experiments and the practice of medicine, which led to an objectification of the patient (Missa, 2006). In this perspective, the conditions for the emergence of more precise knowledge on the importance of context for the success of psychedelic therapies were probably not met.

Conclusion

The Sainte-Anne school was characterized by its understanding of psychedelics through the biological approach, which in the 1950s was still dominated by the notion of shock. It is interesting to note that this limitation was not specific to only this class of substances. The historian Benoit Majerus has shown, for example, that although at the forefront of research on chlorpromazine, Jean Delay's teams were initially cautious about its administration and even "lagged behind" in comparison with other European institutions (Majerus, 2019). Thus, years after the introduction of neuroleptics, the practice of electroshock, lobotomy and insulin comas was still very frequent at Sainte-Anne as well as at Henri Ey's hospital, and were ultimately preferred to any other technique, which would have challenged the teams' habits. The inertia of daily practices within the hospital is therefore certainly at play in the difficulties faced by French therapists to modify their understandings and methods.

During the 1960s, while the theoretical effort at Sainte-Anne was increasingly directed toward neuropharmacology and biochemical hypotheses of mental illness, this paradigm shift did not result in any evolution concerning the therapeutic properties of psychedelics. The research on LSD in particular was in fact mainly aimed at underlining the value of neuroleptics. The hospital in which the greatest number of experiments were carried out with LSD in France, in Dr. Borenstein's laboratory, were only aimed at producing an effect considered as psychotic, and then administering different neuroleptics in order to study their rapidity of action, their effectiveness, etc. (Borenstein et al., 1965). Chlorpromazine was indeed considered the "glory" (Laurentin et al., 2019) of Delay and his team at the international level. Research on neuroleptics and psychedelics, carried out by the same teams, struggled to determine generalizable protocols, despite a strong methodological effort. Questions of nosology and dosage were at the heart of the concerns, but there was no consensus (Olié, 1992). In a context where evidence-based medicine was not yet established, scientific conclusions were based more on the individual expertise of a few major figures. In this biological approach influenced by Delay's precepts, French doctors did not manage to highlight clear therapeutic benefits in the use of psychedelics, perhaps because of their reluctance, in most cases, to determine an optimum dose, and also very often to think about the context of administration and the relationship with the patient (Henckes, 2008).

As far as the difficulty of integrating a new and more horizontal relationship with the patient is concerned, we can question the training of young French psychiatrists in the post-World War II period, whose specialization was poorly recognized, and whose training "was essentially marked by an 'organicist', 'somatic', 'biological' conception" (Guyotat, 1987). However, in this analysis, we should not leave aside the debates on psychotherapeutic models that agitated the French psychiatric field. From the 1940s to the 1970s, a whole young generation of psychiatrists was committed to an ethical and just relationship with the patient, and to a reform of the institution, harshly criticizing biological methods and narco-analysis. Psychedelics, however, did not appear to interest this generation, constituting a relatively quiet and discrete preserve of experimental research. But it is notable that elsewhere in the world, in the context of psychedelic therapies, the implementation of "set and setting" in the 1960s was also due to a young generation of therapists, for whom the achievements of psychoanalysis, behaviorist psychology, or systemic psychology were clearer.

Of course, the position of the caregivers is at stake here, but the broader context of the French psychiatric institution at this crucial time in the 1950s and 1960s, when care was turning more toward outpatient treatment on the one hand, and when the pharmaceutical stakes of marketing neuroleptics were considerable, also explains why the experiments were discontinued. All the more so as the cultural image of psychedelics in the mid-1960s was becoming problematic. Finally, this often-mediocre historical results of clinical trials with mescaline, psilocybin and LSD conducted in France created a persistent negative representation, which still has a lasting impact on French medicine in its relationship with psychedelic-assisted therapy; to date, psychedelic studies have not resumed in the country. However, certain French medical research teams seem to be in the process of abandoning these older frameworks, since the prospect of clinical trials using psychedelics are being studied more and more and should soon be launched, perhaps with a stronger focus on the concepts of set and setting.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

ZD coordinated the entire manuscript. All the authors carried out the research necessary for the constitution of the corpus of

sources, for their study, and for the writing of the article as well as for its rereading. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

Allaix, D. (1953). *Remarques psychopathologiques de l'intoxication expérimentale*. Paris: Thèse de médecine, Paris.

Baker, E. (1967). "LSD Psychotherapy; LSD Psycho-Exploration: Three Reports," in *The use of LSD in psychotherapy and alcoholism*, Abramson, H. A. (New York: The Bobbs-Merrill Company) 191–207.

Baruk, H. (1950). L'alerte. *Esprit* 18, 343–346. doi: 10.1525/curh.1950.18.106.346

Belsanti, R. (1952). Modificazioni neuro-psico-biochimiche indotte dalla dietilamide dell'acido lisergico in schizofrenici e frenastenici. *Acta Neurologica.* 7, 340–349.

Benoit, J.-C. (1963). Les substances hallucinogènes. Leur rôle dans la recherche et dans la thérapeutique psychiatrique actuelles. *Semaine des hôpitaux de Paris.* 39, 2184–2190.

Beringer, K. (1927). *Der Meskalinrausch*. Berlin: Springer. doi: 10.1007/978-3-662-11451-3

Borenstein, P., Cujo, P., and Chiva, M. (1965). À propos de la classification des substances psychotropes selon leurs effets sur l'électroencéphalogramme. *Annales Médico-Psychologiques.* II, 429–452.

Briau, R. (1928). *Du Peyotl dans les états anxieux*. Paris: Thèse de médecine, Paris.

Busch, A. K., and Johnson, W. C. (1950). L.S.D. 25 as an aid in psychotherapy; preliminary report of a new drug. *Dis. Nerv. Syst.* 11, 241–243.

Claude, H., and Ey, H. (1934). La mescaline substance hallucinogène. *Comptes rendus des séances la société de biologie et de ses filiales.* 1, 838–841.

Claude, H., and Rubenovitch, P. (1940). *Thérapeutiques biologiques des affections mentales*. Paris: Masson.

Cohen, S. (1966). *LSD 25*. Paris: Gallimard.

Condrau, G. (1949). Klinische Erfahrungen an Geisteskranken Mit Lysergsäure–Diäthylamid. *Acta Psychiatrica Scandinavica* 24, 9–32. doi: 10.1111/j.1600-0447.1949.tb04588.x

Delay, J. (1951). "Les aveux artificiels," in *Revue des Deux Mondes.*, 14 n°51, p. 463–480.

Delay, J. (1956a). Antagonisme de la mescaline et de la chlorpromazine," in *Comptes rendus des séances la société de biologie.*, CL, p. 512.

Delay, J. (1956b). "Des médicaments psychologiques," in *Revue des Deux Mondes.* p. 600–617.

Delay, J., and Benda, P. (1958). L'expérience lysergique. LSD-25. À propos de 75 observations cliniques. *Encéphale*. 169–209, 309–344.

Delay, J., Deniker, P., Raclot, M., and Ropert, M. (1956). La mescaline chez les malades mentaux; constatations cliniques. *Ann Med Psychol (Paris).* 114, 300–305.

Delay, J., and Gerard, H. P. (1948). L'intoxication mescalinique expérimentale. *Encéphale.* 37, 196–235.

Delay, J., and Gerard, H. P. (1950). Les illusions de la Mescaline. *Encéphale.* 39, 55–63.

Delay, J., Gerard, H. P., and Allaix, D. (1949). Illusions et hallucinations de la mescaline. *Presse. Med. (1893).* 57, 1210–11.

Delay, J., Gerard, H. P., and Racamier, P.-C. (1951). Les synesthésies dans l'intoxication mescalinique. *Encéphale.* 40, 1–10.

Delay, J., Pichot, P., and Genest, R. (1947). Le choc amphétaminique. *Annales Médico-Psychologiques.* 2, 272–273.

Delay, J., Pichot, P., and Lemperière, T. (1961). La psilocybine - Ses implications thérapeutiques. *Sud Médical et Chirurgical.* 97, 9217–9224.

Delay, J., Pichot, P., Lempérière, T., Nicolas-Charles, P. J., and Quétin, A.-M. (1958). "Étude psycho-physiologique et clinique de la psilocybine," in *Les champignons hallucinogènes du Mexique : études ethnologiques, taxinomiques, biologiques, physiologiques et chimiques* Archives du Muséum national d'histoire naturelle, Heim, R., Wasson, R. G., and Hofmann, A. (Paris: Muséum National d'Histoire Naturelle) p. 287–309.

Delay, J., Pichot, P., and Nicolas-Charles, P. (1959). "Premiers essais de la psilocybine en psychiatrie," in *Neuro-Psychopharmacology. Proceedings of the First International Congress of Neuro-Psychopharmacology, Rome, September 1958*, Bradley, P. B., Deniker, P., and Radouco-Thomas (New-York: Elsevier) p. 528–531.

Delay, J., and Shentoub, S. (1946). *La narco-analyse psychosomatique en psychiatrie.* Paris: Communication de la Société médico-psychologique.

Denber, H. (1956). Studies on mescaline. VII. The role of anxiety in the mescaline-induced state and its influence on the therapeutic result. *J. Nerv. Ment.* 124, 74–77. doi: 10.1097/00005053-195607000-00011

Denber, H., and Merlis, S. (1954). A note on some therapeutic implications of the mescaline-induced state. *Psych Quar.* 28, 635–640. doi: 10.1007/BF01567079

Desoille, R. (1963). "Rêve éveillé dirigé et LSD 25," in *Bulletin de la Société de recherches psychothérapiques de langue française,* n°3, p. 46–52.

Dubus, Z. (2020). Marginalisation, stigmatisation et abandon du LSD en médecine. *Histoire, médecine et santé.* n°15 87–105. doi: 10.4000/hms.2168

Dubus, Z. (2021). Le LSD, psychédélique ≫ ou ≪ psychodysleptique? *L'Information Psychiatrique.* 97, 803–808. doi: 10.1684/ipe.2021.2343

Dubus, Z. (2022). "High dose shock therapy with LSD and mescaline: the experiments of a French doctor on two homosexual adolescents in the 1960s," in *Queering Psychedelics, from oppression to libeation in psychedelic medicine*, Belser, A., Cavnar, C., and Labate, B. (eds) (Santa Fe: Synergetic Press) p. 59–64.

Dubus, Z. (2023). "Women, Mental Illness and Psychedelic Therapy in Postwar France," in *Expanding Mindscapes: a global history of psychedelics,* Dyck, E., and Elcock, C. (eds). (Cambridge: MIT Press).

Dyck, E. (2006). 'Hitting highs at rock bottom': LSD treatment for alcoholism, 1950–1970. *Soc. Hist. Med.* 19, 313–329. doi: 10.1093/shm/hkl039

Ey, H., Igert, C., and Lairy, G. (1959). *État des recherches portant sur les hallucinogènes et les hallucinalytiques effectuées en 1958.* Perpignan: Archives de Perpignan no. 380 in Fonds Ey (7S).

Gastaut, H., Ferrer, S., Castells, C., Nicolle, N., and Luschnat, K. (1953). Action de la diéthylamide de l'acide d-lysergique (LSD 25) sur les fonctions psychiques et l'électroencéphalogramme. *Stereotact. Funct. Neurosurg.* 13, 102–120. doi: 10.1159/000105400

Guillemain, H. (2020). Les effets secondaires de la technique. Patients et institutions psychiatriques au temps de l'électrochoc, de la psychochirurgie et des neuroleptiques retard (années 1940-1970). *Revue d'histoire moderne contemporaine.* 67, 72–98. doi: 10.3917/rhmc.671.0072

Guyotat, J. (1987). La formation des psychiatres en France. *Raison présente.* 83, 69–81. doi: 10.3406/raipr.1987.2614

Hartogsohn, I. (2017). Constructing drug effects: a history of set and setting. *Drug Sci. Policy Law.* 3, 1–17. doi: 10.1177/2050324516683325

Heim, R. (1924). Une exposition mycologique automnale à Gap. Quelques mots sur la comestibilité des champignons dans les hautes régions dauphinoises. *Bulletin trimestriel de la Société mycologique de France Tome XL.* p. 193–202.

Heim, R. (1956). ETHNOMYCOLOGIE - Les champignons divinatoires utilisés dans les rites des Indiens Mazatèques, recueillis au cours de leur premier voyage au Mexique, en 1953, par Mme Valentina Pavlovna Wasson et M. R. Gordon Wasson. *Comptes-rendus des séances de l'Académie des sciences.* 242, 965–968.

Heim, R. (1957). "Analyse de quelques expériences personnelles produites par l'ingestion des Agarics hallucinogènes du Mexique," in *Comptes rendus hebdomadaires des séances de l'Académie des sciences* (Paris: Académie des *sciences)* p. 597–603.

Heim, R. (1978). *Les champignons toxiques et hallucinogènes*. Paris: Boubée.

Heim, R., Wasson, R. G., and Hofmann, A. (1958). *Les champignons hallucinogènes du Mexique : études ethnologiques, taxinomiques, biologiques, physiologiques et chimiques*. Paris: Muséum National d'Histoire Naturelle.

Henckes, N. (2008). "Réformer et soigner. L'émergence de la psychothérapie institutionnelle en France, 1944-1955," in *Psychiatries dans l'histoire* (Caen: Presses universitaires de Caen) p. 277–288.

Jay, M. (2019). *Mescaline: A Global History of the First Psychedelic*. New Haven: Yale University Press. doi: 10.12987/9780300245080

Knaueur, A., and Maloney, W. (1913). A Preliminary Note on the Psychic Action of Mescalin, with Special References to the Mechanism of Visual Hallucinations. *J. Nerv. Mental Dis.* 40, 425–443. doi: 10.1097/00005053-191307000-00001

Lanter, R., Weil, J., and Roth, M. (1962). Note à propos de l'utilisation diagnostique et thérapeutique des drogues hallucinogènes (mescaline –LSD-25). *Annales Médico-Psychologiques II*. 244–253.

Laurentin, E., Artières, P., Fauvel, A., and Guillemain, H. (2019). "Quelle histoire de la folie après Foucault? - Ép. 3/4," in *France Culture, La fabrique de l'histoire*.

Leary, T. (1961). *Letter from Timothy Leary to Jean Delay, June 30, 1961*. New York: Timothy Leary Archives, NYC Public Library.

Majerus, B. (2019). A chemical revolution as seen from below. The "discovery" of neuroleptics in the Paris of the 1950s. *Social Hist. Med.* 32, 395–413. doi: 10.1093/shm/hkx113

Mayer-Gross, W., and Stein, S. (1926). Über einige Abänderungen der Sinnestätigkeit im Meskalinrausch. *Zeitschrift für die Gesamte Neurologie und Psychiatrie.* 101, 354–386. doi: 10.1007/BF02878343

Michaux, H. (1955). *Letter from Henri Michaux to Roger Heim, July 1955*. Paris: box no. 5, Roger Heim collection of the MNHN library.

Michaux, H. (1960). La psilocybine (Expériences et autocritique). *Revue de mycologie.* 25, 52–68.

Missa, J.-N. (2006). *Naissance de la psychiatrie biologique: Histoire des traitements des maladies mentales au XXe siècle*. Paris: PUF.

Nicolas-Charles, P. J. (1958). *Letter from P. J. Nicolas-Charles to Roger Heim dated August 20, 1958*. Paris: box no. 5, Roger Heim collection of the MNHN library.

Olié, J.-P. (1992). *Histoire d'une découverte en psychiatrie: 40 ans de chimiothérapie neuroleptique*. Paris: Doin.

Perrine, D. (2001). Visions of the Night Western Medicine Meets Peyote 1887-1899. *Heffter Rev.* 2, 6–52.

Postel, J., and Coss, P. (1956). La thérapeutique par la psychose induite (mescaline et chlorpromazine). *Annales Médico-Psychologiques.* 114, 254–282.

Quétin, A.-M. (1960). *La psilocybine en psychiatrie clinique et expérimentale*. Paris: Thèse de médecine, Paris.

Robert, R. (1962). *Contribution à l'étude des manifestations neuro-psychiques induites par la psilocybine chez le sujet normal: à propos de 35 protocoles réalisés chez des peintres*. Paris: Thèse de médecine, Paris.

Ropert, M. (1957). *La mescaline en psychiatrie clinique et expérimentale*. Paris: Thèse de médecine, Paris.

Rouhier, A. (1927). *Le peyotl: la plante qui fait les yeux émerveillés*. Paris: G. Doin.

Rouhier, A. (1989). *Le peyotl: la plante qui fait les yeux émerveillés*. Paris: Guy Trédaniel.

Snelders, S., Kaplan, C., and Pieters, T. (2006). On cannabis, chloral hydrate, and career cycles of psychotropic drugs in medicine. *Bull Hist Med.* 80, 95–114. doi: 10.1353/bhm.2006.0041

Stévenin, L., and Benoit, J.-C. (1960). À propos de l'utilisation des substances dysleptiques en psychothérapie. Résultats favorables de séances répétées. *Encéphale*. XLIX, 428–434.

Sutter, J. M., and Pélicier, Y. (1957). "Les substances hallucinogènes," in *Encyclopédie Médico-Chirurgicale - Psychiatrie (Paris)* p. 1–10.

Thévenard, P. (1964). *Les champignons hallucinogènes du Mexique*. Film documentaire scientifique. Fondation Singer-Polignac.

Thuillier, J. (1981). *Les dix ans qui ont changé la folie*. Paris: Robert Laffont.

Toscano Aguilar, M. (1959). *Étude Auto-Expérimentale Avec Deux Drogues Psychodysleptiques: L.S.D 25 et Psylocybine; Comparaison Des* Résultats.

Verroust, V., Zafar, R., and Spriggs, M. J. (2021). Psilocybin in the treatment of anorexia nervosa: the English transition of a French 1959 case study. *Annales Médico-psychologiques, revue psychiatrique*. 777–81. doi: 10.1016/j.amp.2021.08.004

Virel, A. (1971). Approches psychophysiologiques de l'imagerie mentale. *Bulletin de psychologie* 24, 682–692.

Wasson, R. G. (1955). *Letter from Robert Gordon Wasson to Roger Heim, July 1955*. Paris: box n°5, Roger Heim collection of the MNHN library.

Wasson, V. P., and Wasson, R. G. (1957). *Mushrooms, Russia and history*. New York: Pantheon Books.

Weil, J. (1965). *Essai d'utilisation des psychodysleptiques dans le traitement des alcooliques en hôpital psychiatrique*. Paris: Thèse de médecine, Paris.

Widlöcher, D. (1957). *Le diéthylamide de l'acide lysergique; étude de psychopathologie expérimentale*. Paris: Thèse de médecine, Paris.

Wilhem, M.-T. (1955). *Intérêt de l'épreuve mescalinique dans les maladies mentales*. Paris: Thèse de médecine, Paris.

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Historicizing psychedelics: counterculture, renaissance, and the neoliberal matrix

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In this essay, I would like to suggest that the historical transition of psychedelics from an association with *counter*culture to becoming part of the *main*stream is related to the rise of what late cultural theorist Mark Fisher termed "capitalist realism"—the notion that there is no alternative form of social organization and, as such, capitalism simply *is* reality. For Fisher, the economic and political project of neoliberalism was the main agent behind this re-instauration of capitalist hegemony after its de-stabilization by the convergence of several radical forces at the end of the 1960s and early 70s, of which psychedelic "consciousness-expansion" was one. Thus, historicizing psychedelics within the shifts in political economy and culture associated with the "collective set and setting" of neoliberalism can serve both to understand the current shape and operations of the psychedelic "renaissance" as well as help us retrieve these substance's lost political potential. Concretely, this essay argues that such potential was not inherent to psychedelics but embedded in the political economy of the New Deal order, which supported both the formation of discourses, demands, and hopes based on "the social" and, relatedly, the idea that "the personal is political." As neoliberalism displaced this object of reference in favor of individualism, the personal was de-linked from the political and the dreams—and the threats—of psychedelic utopianism were successfully defused and forgotten. In the process, concretely, the anti-work and collective dimensions of the psychedelic counterculture have been all but lost as psychedelics have returned to enhance or treat individual brains—while leaving capitalist society unchallenged. In light of our ecological and social predicaments, the famous context-dependence of psychedelics can be a powerful reminder that, contra individualism, the social and political traverse the personal—and thus that to change the self in line with the psychedelic values of love and connection ultimately requires changing the world.

KEYWORDS

psychedelics, Mark Fisher, collective set and setting, neoliberalism, personal is political, neuroscience, counterculture, individualism

Introduction

In this essay, I would like to suggest that the historical transition of psychedelics from an association with *counter*culture to becoming part of the *main*stream is related to the rise of what late cultural theorist Fisher (2009) termed "capitalist realism"—the notion that there is no alternative form of social organization and, as such, capitalism simply *is* reality. For Fisher, the main agent behind this closure of our social imagination has been the economic and political project of neoliberalism which, as he argued in his unfinished book introduction titled *Acid Communism* (2018, p. 1141), "is best understood as a project aimed at destroying —to the point of making them unthinkable —the experiments in democratic socialism and

libertarian communism that were efflorescing at the end of the Sixties and the beginning of the Seventies." As the title suggests with its reference to LSD (acid), Fisher understood psychedelic "consciousness-expansion" as part of the subversive forces that the neoliberal "counter-revolution" had to destroy, capture and bury in order to (re)install capitalist hegemony. From this point of view, "neoliberalism" is more than an economic theory or policy platform emerging from the thinkers convened by the famous "Mont Pelerin Society"—it also stands, more generally, for various socioeconomic developments that have shaped culture, knowledge, and subjectivity according to individualist norms (Gilbert, 2013, 2014).

While psychedelic drugs and their uses were hardly Fisher's primary concern, I consider them as useful objects through which to analyse these historical shifts and as gateways to its forgotten potentials. From this point of view, the fact that disavowing its countercultural legacy and anything reminiscing a "hippie's standpoint" (Sessa, 2014, p. 61) has been a condition of possibility for the "psychedelic renaissance" (Langlitz, 2013; Pollan, 2018) acquires a whole new significance, for the latter's neuroscientific claims to political neutrality hide its ideological alignment with neoliberal realism. Thus, situating the renaissance within the broader "collective set and setting" (Hartogsohn, 2020), or "matrix" (Eisner, 1997), of neoliberal capitalism can give us a new understanding of the deflation of our psychedelic horizon from the countercultural hope that these substances could radically transform capitalist society to the more tempered, expedient, and de-politicized concern with treating or enhancing individuals within it.

Indeed, what I want to track by means of psychedelics is the larger story of the displacement of "the social" as an object of reference and government (Rose, 1996) in favor of the individual. In the United States (the focus of most of the following analysis), this displacement is underpinned by the transition between what American historian Gerstle terms the "political orders" of the New Deal and neoliberalism—the first defined by a conception of capitalism as disastrous if left to its own devices and therefore in need of state regulation in favor of the social or public interest, and the second by idea that market forces needed to be liberated from state controls that were hampering growth, innovation and individual freedom (2022, p. 2). As we will see, the counterculture—and by extension, psychedelia—occupies an ambiguous place in this passage from capitalist crisis to capitalist hegemony. As the dominant narrative has it, its valorisation of individual "authenticity" in many ways broke with the collectivist politics of the New Deal and opened the way to their demise. Nonetheless, the counterculture was also viciously attacked for its own real and perceived association with this and other forms of collective politics in the 1960s—suggesting that the reduction of the counterculture and its aftermaths to an individualist essence obscures both how its multiple potentials were influenced, directed, or blocked by its surrounding context and the full extent of the challenge it posed to capitalist norms. Indeed, inspired by his colleague and friend Gilbert [who has written a crucial piece on "psychedelic socialism" (2017)], Fisher sought to unearth those radical potentials from the simplistic view that "the 60s led to neoliberalism"— arguing that this narrative itself is a symptom of capitalist realism ("there was never really any alternative"). From this point of view, historicizing psychedelics and psychedelic experiences within these shifts in political economy can help us understand not only the broader conditions under which their individualist streaks have become dominant but also those under which their collective or social dimensions could—and maybe can—become activated.

Thus, admittedly, my interest in psychedelics is motivated by a broader interest in social change within which the former serve as both powerful tools and entry points to many debates, theories, histories, and possibilities. Analytically, this motivation has the added value of addressing a gap in the psychedelic literature, which is the lack of concern with the historical embedding of psychedelic cultures within political economy. While Langlitz (2013) and Hartogsohn (2020), for example, have greatly contributed to our understanding of the many uses, trajectories, and transformations of psychedelic culture(s) from the 60s to today, they have not been interested in how shifts related to the neoliberal "matrix" may have affected their shape. Similarly, in the rare cases neoliberalism or capitalism do get mentioned, they appear as either a set of values (such as competitive individualism) with little or no historical grounding (e.g., Plesa and Petranker, 2022) or as relating most directly to concerns over the for-profit "corporadelic" takeover (venture capitalists, patents, rich donors, etc) (e.g., Haustfeld, 2020), or both (e.g., Davis, 2018). One notable exception is the work of Gearin and Devenot (2021) and Devenot et al. (2022), who in much more detailed analyses have greatly contributed to a critical perspective on how current scientific and media discourses on psychedelics reflect neoliberal norms (arguments to which I hope to add here). In all, delving into the history of psychedelics in their relation to the neoliberal matrix can brings these perspectives together, give us a deeper sense of the origins of the developments they discuss, and perhaps help us challenge them and uncover other alternatives.

To this end, I will start by situating psychedelic utopianism within the New Deal order to explain the conditions under which it was possible in the first place and the threat it posed to capitalism—especially in its rejection of the work ethic and its association to other social movements of the time. Then, I will turn to the neoconservative and neoliberal reaction to the New Deal, and the place of psychedelics within it—a symbol for the link between laziness and collectivism, both of which had to be done away with to produce the conditions of individual entrepreneurialism. Finally, I will briefly show how the turn from the social to the individual that characterizes this shift is reflected in the psychedelic renaissance as its dominant neuroscientific (and psychological) discourse contributes to what Fisher termed the "privatization of stress" (2018, p. 684)—the process through which individuals are made responsible for affective distress triggered by external causes often beyond their direct control. The overarching promise of psychedelics is that in their insistence on the contextual nature of experience they challenge the individualizing logic at the core not only of such discourses on mental health but of neoliberalism, or even capitalist modernity, in general (Escobar, 2018). For lack of space, my overview of all these processes cannot be comprehensive, and it is my hope that it is read as a line of research in its early stages. Readers familiar with the multidimensional history of neoliberalism, the "long sixties," and the demise of social democracy

might not find much new in this analysis, but I hope that bringing it to bear on contemporary discussions about the politics of psychedelics can open new questions for further research. As I will mention in the conclusion, many of the questions opened up by psychedelics across this history are of great relevance to our contemporary ecological and social predicament.

The new deal order

In order to make sense of the counterculture and other social movements emerging in the 60s, it is necessary to understand how they emerged from and in response to the strengths and weaknesses of the political economy of the New Deal. Concretely, it is important to understand how the possibility of governing in the name of "society"—paradoxically as both a counterpoint to the excesses of capitalism and to "save" it at its worst moment—was not the result of "impersonal economic forces" but of class struggle waged by organized labor (quite literally, of the strength of "socialist" or socialist-leaning movements at the time) (Gerstle, 2022, p. 25). Responding to the demands and mobilization of workers in the wake of the tremendous social upheaval and deprivation of the Great Depression in the 1930s, the Roosevelt administration turned to a keynesian-type economy that swooped in to pay for extended welfare provisions, public employment and infrastructure (funded through marginal tax rates inconceivable in our times −75 to 90% on the highest incomes), and institute a collective bargaining system that institutionalized worker's newfound power. This resulted in a certain "class compromise" through which more of the profits of business were distributed to the latter and it also served to boost domestic consumption, quell social unrest and bypass more radical demands (such as worker ownership and democracy). As Gerstle also highlights, this compromise was bolstered (if also limited) by the presence of a mighty competitor on the world stage—Communism—and the need, especially after WWII and the beginning of the Cold War, to prove that capitalism could deliver better lives to its citizens. Altogether, and all too schematically, this situation was largely responsible for the "great compression" of inequality that made the post-war period one of "affluence"—a term that often, including in histories of the 60s counterculture, serves to gloss over these prior political struggles and their gains. Of course, even as this prosperity spread across a greater swath of the population, it was far from evenly distributed, and this was reflected in a rather rigid and exclusionary vision of society.

Perhaps the social rigidity of "straight society" that countercultural movements would come to criticize and oppose is best exemplified by the New Deal's establishment of the "white male breadwinner model" (Jaffe, 2021). This model was, first of all, *white*, as Roosevelt compromised with the Southern Dixiecrats by excluding agricultural and domestic workers (mostly POC) from the collective bargaining system (McAlevey, 2020), Jim Crow segregation was left mostly unchallenged, and many government programs still disproportionally aided white people and excluded black Americans (Katznelson, 2005). It was, secondly, *male*, since it was linked to an idea of male citizenship and participation tied to work, which was defined as what men did for a wage outside of the domestic (female) sphere, and thus, finally, it assumed and helped constitute the nuclear family as we have come to imagine it—where men assumed the role of *breadwinner* (the push for higher compensation often resting on the logic of the "family wage"), and women that of caring mother and wife. It was during this time that the vision of the (white, suburban) nuclear family, while far from universal in fact or even accessibility, established itself fully as the ideal of the American Dream (and as another sign of the superiority over communism). Designed as a form of social "containment," the family was meant as a safe haven and private bulwark against the uncertainties and anxieties of the external world—communism, nuclear war, alienating corporate and industrial work—but was no panacea, as it also came with heavily entrenched and restrictive gender roles and a sense of rootlessness as many moved away from their old kinship networks to become part of a middle class grounded in homeownership, consumerism, child-rearing and social conformity to their new peers (Tyler May, 1989).

In sum, even as it reduced inequality and extended full civil participation to more working men, the social world projected by the New Deal was a rather rigid and normative one marked by racial segregation, strict gender roles, alienating work outside the home, consumerist conformism, and anti-communist paranoia–certainly not a version of the social we should simply return to [it was also subtended by colonial relations (Bhambra, 2021)]. For our purpose, it suffices to note that we must understand the psychedelic utopianism of the 60s' counterculture as born from the intimate link between the relatively emboldening economy and rather suffocating culture described above, for it produced a maddening dissonance in which the possibilities of a world of plenty were being irrationally misused by a conformist and unjust social order. Instead of spending it on "a world which could be free" (Fisher, 2018, p. 1141), this order squandered its abundance on consumerist, military, and repressive ends. This was a madness youth would grow up in, learn to perceive and expose as such, and try to turn on its head by breaking the firm social and psychological compartmentalization it trapped them in.

Counterculture and psychedelic utopianism

Putting aside for a minute that "the counterculture" was never a homogenous or unified social movement (Braunstein and Doyle, 2002), it is worth picking up the traditional view popularized by Roszak (1969) that it embodied a widespread critique of "technocratic society" to which the use of LSD certainly contributed. From this point of view, the story goes, the counterculture rebelled not only against the postwar order but against the scientific worldview of modernity itself, understanding it, as Marcuse wrote in 1964, as having "projected and promoted a universe in which the domination of nature has remained linked to the domination of man" (Marcuse, 2002, p. 170). Thus, science had not only rationalized, "disenchanted" and instrumentalized the natural world in the name of efficiency and material accumulation but also submitted people to the same principle. Although multiple realities informed this anti-science stance (most notably the questionable "progress" of the nuclear bomb; see Agar, 2008), perhaps none was as consequential for the counterculture as the de-humanization that seemed to be at the core of the world of work, where people were treated as mere numbers and cogs in

the gray, hierarchical, regimented and oppressive machinery of industrial, corporate, and military capitalism. Opposing itself to the dreary repetitiveness and standardization of this "robot society" (as Timothy Leary would call it) in which everyone was destined to become part of an undifferentiated consumerist "mass" competing in a meaningless and alienating "rats race" for image, status, and external validation, the counterculture sought to develop alternative sources of personal satisfaction and social validation. Starting from a critique of the scientific west and its materialism, it is little wonder many sought answers by turning to—frequently eastern—spirituality. Praised for re-enchanting the world and for being conceiving of the self more holistically, spirituality seemed simultaneously a means to reconnect to the wider cosmos. Other people, and to one's inner self by tapping into and unleashing one's "human" capacities for love, play, pleasure and creativity. It is here that we begin to encounter certain tensions between individualism and collectivism that would be reflected in the use of LSD as many turned to it to find a new form of sanity diametrically opposed to that of mainstream society.

At one level, LSD was conceived as a tool to "de-condition" the "cultural self" and find, underneath it, an "authentic" self purportedly free from social conditioning. Thus, the mystical experiences induced by psychedelics withdrew the self from the material world of consumerism and external validation to the internal realm of pure consciousness, granting, through direct contact with the divine, authority to a newfound sense of intrinsic self-worth. Far from irredeemably solipsistic, however, this mysticism also seemed to confirm a deep sense of "oneness" between all people, and with it the notion that beyond and beneath specific cultural and social differences and barriers, all could live in perfect love and harmony. From this point of view, the strategy for social transformation was for everybody to simply free their consciousness of unhealthy social norms and patterns (through drugs or otherwise), and positive—even revolutionary—change would follow. Even at the time, many "politicos" criticized this view for ignoring the need for struggle to ensure and advance the material conditions for such freedom (Lee and Shlain, 1985, p. 109), and over time, many have rightly criticized this stance for ignoring the "specificities of race, class, and gender" that informed it and that it thereby reproduced (Shortall, 2014, p. 189)—after all, most hippies were white, male, and middle class. Thus, received wisdom has it that for all their big and good intentions, hippies in fact ushered in a new era of therapeutic narcissism concerned only with liberating and improving the self and therefore paved the way for neoliberal culture (Lasch, 2018; Ingram, 2020).

While this much is true, and cannot be stressed enough, it is also the case that this narrative overlooks the threat the counterculture was seen to pose at the time, the connections it enabled and often had with other social groups and movements, and how, precisely, its more radical potentials were only fully defused through the installation of a new economic terrain (a process, incidentally, to which other movements succumbed as well; for the case of feminism, see Fraser, 2013). At the time, however, the blurring of boundaries characteristic of psychedelic experience can be said to have contributed to some hippies' reach across the social barriers of the post-war order.

At another level, then, the break with socially imposed identity, if achieved by going *deeper into* the mind, also enabled one to *get out through it* by "blowing it up" and grasping at social rather than individual potentials. For one, the use of LSD posed, as Hartogsohn (2020, p. 224–231) has brilliantly documented, a double challenge to the capitalist (or "protestant") work ethic—both by producing a lack of motivation for sanctioned modes of work and discipline and, correlatively, on the side of consumption, by providing easy pleasures and gains to the (therefore) "undeserving." This challenge—and its connection with the "inner self"—was made quite explicit by some, such as countercultural activist Jerry Rubin, who claimed that "drug use signifies the total end of the Protestant ethic: screw work, we want to know ourselves. But of course the goal is to free oneself from American society's sick notion of work, success, reward, and status and to find oneself through one's own discipline, hard work, and introspection" (Quoted in Langlitz, 2013, p. 35). While this rejection of the market economy might have only been accessible to relatively affluent youth who enjoyed enough security to "drop out" of it, the very possibility that many of "the sons and daughters of the nation's elite" (Hartogsohn, 2020, p. 165) would reject work, consumption, and other privileges (however temporarily or partially) seemed both unprecedented and a not inconsiderable jab to the legitimacy and reproduction of the social order—for these kids became "class renegades" in the process (Fisher, 2018, p. 1156). Furthermore, as Farber (2013) has argued (and as Rubin's quote suggests), far from a solipsistic politics of consciousness oblivious to material context, many sought to build lives "not on stoned indifference but on active social engagement and community-oriented hard work" (p. 3) that would create new environments, public spaces (Silos, 2003), "right livelihoods," and alternative social "games" in line with their values (notably by moving "back-to-the-land" and setting up farms and communes [Melville, 1972]).

Perhaps most importantly, as Marcuse (1969) was quick to suggest (in a combination of psychoanalysis and social theory characteristic of the time), by dissolving their ego's and dis-identifying with the system of domination and authority that advantaged them (to the point of suspending upwards aspirations for the often real risk of downwards social mobility), many a youth's "refusal" of straight society also opened the possibility of forming collective alliances, establishing solidarity, and sustaining an egalitarian spirit beyond narrowly defined social categories (significantly perhaps, longhaired hippies were often derogatorially associated with homeless vagrants, as well as with women, people of color, and communists). At closer inspection, then, the security—or "affluence"—many in the counterculture enjoyed not only permitted individual exploration but also supported a strong collectivist and communitarian spirit for which they were not only drawn to mysticism and eastern religions, but also to different forms of activism. It was in the uneasy "convergence" between such new forces of social change that Fisher saw a powerful challenge to the status quo and as a sign of a collective "postcapitalist desire" (Fisher, 2012) before and beyond capitalist realism (2018, p. 1150).

While I do not wish to paint a rosy and certainly untrue picture of harmony amongst the many social movements emerging at the time, it is nonetheless true that "the counterculture," psychedelic consciousness-expansion, and countercultural modes of expression and dissidence frequently intersected with and informed various forms of "New Left" politics—Student activism, the Women's Movement, Civil Rights, Black Power, Native

American "Red Power" (Smith, 2012), and a slowly nascent ecological movement, which perhaps came together most clearly in anti-war demonstrations (Lee and Shlain, 1985; Bach, 2013). Again, while the main divide concerned the necessity of or turn away from more or less traditional forms of agonistic struggle, it can be useful to think of all these movements as "countercultural" in a broad, purely descriptive sense, as they certainly opposed the mainstream society of their time, tried to produce a new culture that could change its values and views (on race, gender, democracy, nature, mental illness, and so on), and sought to prefigure the transformations they desired to bring about through their lifestyles. From this point of view, psychedelics were just another tool for "consciousness-raising"—a task even some drug dealers understood themselves to be undertaking (Lee and Shlain, 1985, p. 116).

In the context of the women's movement, who popularized the term, consciousness-raising referred to the novel practice of coming together in small groups to openly discuss and pool ostensibly "private" experiences to find their common—political—causes, serving the "super-therapeutic" function of overcoming personal alienation and becoming collectively empowered to challenge them (Gilbert, 2017). Evidencing its links to psychedelia, Redstockings member Kathie Sarachild's "program for consciousness-raising"—prepared for the First National Women's Liberation Conference in Chicago, 1968—even referred to the practice as "ongoing consciousness-expansion" (Sarachild, 1968; see also Michals, 2002). In a broader sense, however, consciousness-raising was also part of what the Black Panther Party understood its community programs to be for (The Dr. Hey P. Newton Foundation, 2008), and can also be applied to the "free" services, media stunts, and guerrilla theater tactics of the Diggers and the Yippies, or sit-ins, teach-ins, and voter registration initiatives of the student movement. In all, many of these forms of activism shaped a powerful common sense that the "the personal is political" (another notion pre-existing, but popularized at the time by feminists). By addressing each person as an agent and site of political struggle, such a conception of the self amounted to an elementary form of democratization which called upon each individual to consider and make decisions of broader social significance. In this scenario, as Fisher suggested, psychedelics are quite unique for having democratized both neurology and metaphysics—at once linking the nature of the self to that of its surrounding reality, providing a first-hand "altered" experience of their transmutability, and opening them to questioning and intervention. As Carl Oglesby, former president of Students for a Democratic Society (SDS) described it, even if the "actual content" of the LSD experience was not inherently linked to revolution, "nothing could stand for that overall sense of going through profound changes so well as the immediate, powerful and explicit transformation that you went through when you dropped acid," and as such, "the experience shared the structural characteristics of political rebellion" (Quoted in Lee and Shlain, 1985, p. 108). In all, while disagreements certainly existed about whether changing consciousness was sufficient to change the world, that it was necessary—and desirable—to do so was a rather consensual matter.

Grouped this way, the term counter-*culture* also helps us makes sense of what these movements did *not* oppose—the great gains in equality achieved by the labor movement and a comparatively social-democratic government. In fact, if anything, most of them took these gains for granted and sought to pursue the cause of equality and the critique of capitalism further both theoretically—producing novel understandings of how capitalism operated (domestic and international racial imperialism, women's reproductive labor in the family, normalizing institutions such as the university or psychiatry, exploitation of nature…)—and practically—calling for additional material redistribution and new forms of "participatory democracy" (a term popularized by SDS) that would increase the groups involved in collective decision making and extend the spheres in which it took place (to the workplace, for example) (Miller, 1987). In this sense, we should also expand the term "New left" (as I have above) from a narrow reference to white student militants to apply to other groups breaking with the "labor metaphysic" in which workers (often implicitly male, white, and unionized) were the main or only agents of meaningful social change. It is from this angle, if any, that the new movements were often critical of the "old left" and the unfulfilled egalitarian promises and differential impacts of New Deal, which they attempted to supplement them through new analyses. Such analyses often accused the New Deal order (in many ways rightly) of being a "corporatist" collusion between state and business which promoted mass conformity and social exclusion, and opposed it in the name of individual autonomy and face-to-face community. Admittedly, by doing so, the demands of many of these groups would indeed, in the long run, inadvertently clear space for neoliberalism. The point, nonetheless, is that the political economy embodied in the New Deal—with its relative checks on capitalism in favor of social concerns—constituted the ground on which the collective demands of these movements became intelligible, powerful, and were experienced as eminently realistic—hence the dreams of psychedelic utopianism.

Thus, in sum, it was the particular post-war political economy that set the conditions of possibility for a generalized, collective upheaval amidst which psychedelics could seem revolutionary. Therefore, that hope came not only from an impersonal or accidental moment of "affluence" but also the result of class struggle within the US and abroad during the first half of the twentieth century. That struggle is what made governance and demands based on "the social" possible and greatly compressed inequality, increased the possibilities for solidarity, and fed the optimism that the world could be improved for the majority of the population. In this context, at their best, even the psychedelic counterculture's more individualist strains could contribute to a strong common sense that "the personal is political." While elements of the *counter*culture might have taken this too one-sidedly to mean that just by changing the personal you would change the political, the simple starting point of understanding the self as socialized in harmful, oppressive and undesirable norms that are clearly identified with the operation and dynamics of capitalism is precisely what is largely missing in today's mainstream psychedelic *culture*. In all, the "democratic surge" (Crozier et al., 1973) of

the 60s and early 70s built on the previous egalitarian gains of organized labor which fostered an empowering sense of security that seemed, mistakenly, irreversible. For while the "new politics" of expanded social enfranchisement would somewhat succeed in the form of what has come to be known as "identity politics" (whose achievements should not be depreciated), the material rug—and drugs—would be pulled from under them, leaving only the floating promises of individual freedom.

Psychedelic backlash in political context

As historian Cowie (2010, 2016) has suggested, the 1970s are a sort of inversion of the 1930s—also marked by economic turmoil, they brought about the end of the New Deal coalition and the historical exception that was its period of class compromise. On the economic front, the petroleum crisis of 1973 and high government spending on the Vietnam war and social programs significantly contributed to a new situation of "stagflation" for which the Keynesian playbook seemed increasingly inadequate. Coupled with renewed international competition and progressive trade liberalization after the war, this greatly slowed down the incredible rates of national growth of the previous decade, making big business reconsider their already unhappy deal with labor and go on the offensive. Thus, the 70s witness a concerted mobilization to fight and circumvent this compromise through lobbying, union busting, pro-corporate think tanks, and by shifting production to the national or global south, where unions were weak or non-existent and labor was cheaper (a phenomenon eventually termed "de-industrialization," and later "globalization") (Cowie and Heatchott, 2013; Gerstle, 2022). To complete this attack on the post-war consensus, Nixon purposefully shifted the politics of the Republican party to cultural grounds, stoking and playing the rifts forming in the old Democratic coalition since its opening to the "new politics" of the sixties—that of student movements, counterculture, feminism, anti-war positions, and perhaps most importantly, racial inclusion. This last issue in particular had greatly antagonized southern democrats whose crucial commitment to the coalition rested on the defense of racial privilege as well as many white workers who were often most affected by new policies of affirmative action (Cowie, 2010). In sum, the 70s saw a situation in which attempts to expand democratic participation met with a diminishing economic pie, making it possible to break the New Deal order with a new combination of free market policies and white racial conservatism.

Considering this context allows us to view the late psychedelic controversy as more than a purely cultural matter and connected instead to the project of capitalist restoration. Even if we accept that many advocates and critics understood psychedelic use as rather apolitical and that non-political factors (such as new regulatory constraints and changing scientific standards) played a significant role in their progressive demise (Oram, 2014), there can be little doubt that at the turn of the decade, psychedelics found themselves at the heart of the struggle about the future of American Society, and were thus thoroughly politicized. One crucial element to this was precisely the association of the countercultural and psychedelic challenge to the work ethic with, on the one hand, lazy, privileged, and young troublemaking elites and, on the other, to undeserving populations (implicitly black) whose improving condition was coming through government aid instead of individual effort—all at the expense of those who had worked hard to achieve such conditions (implicitly white). Hence, in an economic climate of diminishing expectations in which the fault for stagflation was increasingly blamed on the "collectivist" policies of government welfare spending and the wage demands of organized labor (two staples of the New Deal), individualism was mobilized in the name of a conservative and pro-corporate vision of the body politic in contrast to which the psychedelic counterculture appeared as the prime example of cultural and moral degeneracy. Significantly, Ronald Reagan, who would eventually put the United States on the free market path in the 1980s, begun his rise to power as governor of California in 1966 on a platform opposing student movements, racial enfranchisement and drug use, describing a hippie as someone who "dresses like Tarzan, has hair like Jane, and smells like Cheetah" (derogatorily associating them to primitivity, femininity, and animality) (Hartogsohn, 2020, p. 179).

This platform was not entirely unlike the "law and order" track that Nixon would win his presidential election on at the boiling point of 1968, calling on the "silent majority" to oppose the new vocal minorities. Thus, his designation of drugs as "public enemy number one" was part of a broader assault on the growing social, egalitarian, and political potential embodied in those movements to which psychedelics were—uneasily, and often by their critics rather than their members—associated. As the now infamous (alleged) admission of his domestic policy advisor John Ehrlichman goes, the Nixon administration purposefully weaponized drugs to undermine the anti-war hippie left and black people (Baum, 2016). To be sure, psychedelics were *made* political by both state authorities and psychedelic activists as they confronted each other. In this confrontation, the recently unlawful status of psychedelics was certainly used as an attack on the latter. Although this move, paradoxically, might have radicalized more "neutral" users by branding them as criminals (Farber, 2002), the backlash was generally successful, for in the face of state persecution and even violence (as experienced in the protests surrounding the democratic convention in Chicago in 1968 and the anti-war demonstrations at Kent State in 1970, where four students were killed by police) it only made sense that many would drop political activism and "retreat" further into cultural rebellion (a result which also served to simultaneously further diminish political threats and increase an easily manipulable cultural polarization). "The political system," after all, write Peter Braunstein and Michael William Doyle with regards to the decline of countercultural utopianism, "was real and hostile"—something to stay away from rather than engage with (Braunstein and Doyle, 2002).

In all, it was psychedelics' real and perceived associations to collective politics which eventually saw them demonized and sidelined in favor of the specific image of individualism shared by conservatives and—as we will see—neoliberal thinkers. Seen from this perspective, Nixon's War on Drugs was less the attempt to "blunt the counterculture by attacking its chemical infrastructure" (Pollan, 2018, p. 58) than the larger goal of breaking the New Deal infrastructure that made the collective spirit of the counterculture possible to begin with. It is perhaps the loss of that infrastructure today that skews our perception of the psychedelic counterculture

by giving the sensation that what survived this loss was all it was ever meant—rather than allowed—to become. While in some ways the neoliberal order proved accommodating to certain cultural developments demanded by progressives (such as a panoply of gender and racial non-discrimination laws and a certain global cosmopolitanism), it nonetheless began as and has on the whole resulted to be a conservative reversion of the popular economic gains expressed in the post-war period that has exploded inequality and frozen social mobility (Harvey, 2005; Gilbert, 2013; Fraser, 2017).

Capitalist realism, or neoliberalism for and against counterculture

The antagonism between neoliberalism and the counterculture is patently clear in the latter's attempt to drop out of capitalism's moral investment in work and consumption. By contrast, neoliberal thinkers sought to reinforce this investment by "economizing" ever more domains of social life, that is, by extending the rationality of the market to previously non-economic spheres and activities. Subordinating everything to the primary "project of economic growth, competitive positioning, and capital enhancement" (Brown, 2015, p. 26), neoliberal thinkers postulated that not only is a firm's main goal to grow and maximize profit, but that it is the state's goal to secure the functioning of the free market in order to foster economic growth, and, crucially, that individuals must also act rationally by seeking to maximize their own value as "human capital"—interpreting, aligning and enhancing their personal qualities and capacities in order to improve their overall competitive advantage. This meant, as Michel Foucault presciently noted in his early lectures on neoliberalism (2004), that subjects would have to behave like "entrepreneurs of the self." The problem, which these thinkers understood, was that people did not regularly behave in such permanently self-interested ways, showing instead a propensity toward collectivism that neoliberals saw not only as mob-like and irrational but as inherently authoritarian, oppressive, and damaging to personal responsibility (an aversion to the collective which often conflated the welfare policies of the New Deal, Nazi National-Socialism, Soviet Communism, and the agendas of decolonized states) (Foucault, 2008; Gilbert, 2014; Whyte, 2019).

Their answer to this problem was that the environment had to be shaped in such a way to incentivize (read: compel) such competitive behavior. As Margaret Thatcher, who kickstarted neoliberal policies in the UK, famously put it—"economics are the method, the object is to change the soul." This is precisely what their "policy pillars" of privatization of public goods and services, corporate and financial de-regulation, lowered (marginal) taxation, and cuts in public spending sought to achieve (Klein, 2015). As these policies enclosed the public sphere and created a sense of artificial scarcity (an ongoing, structural feature of capitalism), they successfully created the need to "procure individually what was once provisioned in common" (Brown, 2015, p. 42). This served the dual purpose of ebbing away at the conditions sustaining collective solidarity and getting people to compete, and thus work harder, instead. This had the added benefit (for capitalism, and in the eyes of neoliberals) of substituting the realm of politics—defined by agonistic battles—for that of consumption—where everyone could "vote" and express themselves through what they bought (now including goods and services to cover for their new needs), without interference from others. As Olsen (2019) has demonstrated, neoliberalism turned us into "sovereign consumers"—ostensibly free only in that realm that the counterculture had so strongly rejected.

The corollary of all this can be summed in another iconic phrase of Thatcher's, usually paraphrased as "there is no such thing as society [...] only individual men and women [...]."[1] As she, and across the Atlantic, Reagan, clamped down on workers (famously, on miners and air-traffic controllers, respectively) and put their economies on a solid free market track, the work ethic, consumption and self-interested individual "freedom" were brought back with a vengeance. Thus, as inequality soared the material conditions enabling the anti-work and collective dimensions of the counterculture and other radical movements were eliminated. As Fisher noted (2018, p. 1146), neoliberalism promised "freedom *through* work," rather than, as the counterculture had hoped, *from* it. Moreover, this elimination of the social undid the link between the personal and the political. Formally included in and considered equal by the "free market," success or failure was increasingly understood as a matter of personal responsibility rather than of structural causes, material conditions or ideological manipulation. In all, reduced, by design, to isolated and "responsibilized" worker-consumers, everywhere subordinated to economic calculation, we might see this as the very culmination of the "technocratic society" denounced by the counterculture as a dehumanizing force. Indeed, political theorist Wendy Brown argues that in its subordination of properly political choices (such as those concerning social justice) to economic imperatives, "neoliberalism is the rationality through which capitalism finally swallows humanity" (2015, p. 44). Yet, there is also a sense in which the "humanistic" ethos of the counterculture entered into and helped revitalize the emerging economic terrain.

Although the shifts to a "networked" or "post-fordist" economic and social organization are certainly the result of broad and diverse historical and technological changes and not some purely top-down or intentional process of reactionary "capture," it is nonetheless interesting to note how these changes were able to respond to the countercultural challenge and neatly integrate

1 The real quote goes "society? There is no such thing! There are only individual men and women, and their families" (Jaffe, 2021) and as Dowling (2021) notes is followed by an often ignored recognition that there is "a living tapestry" of people on whose ability and willingness to help each other depends their quality of life. In other words, there *is* a certain conception of the social or of communal (Rose, 1996) linked to neoliberal governmentality, but it is still one based on personal responsibility rather than publicly managed and funded care, and on conceptions of collectivities as mere aggregates of individuals (Gilbert, 2014). This is an important point that this essay has not been able to delve into, and complements the expanded role of notions of "connection" not only in the realm of work, but also that of social relations—in both cases, the more disconnection prevails, the more connection is summoned. Nonetheless, the displacement, "dismantling," or "hollowing out" of the social is still a common theme of several critical analyses of neoliberalism and our digital era (Brown, 2019; Couldry and Mejias, 2019).

it to the operations of capitalism. As Boltanski and Chiapello showed in their classic *The New Spirit of Capitalism* (Boltanski and Chiapello, 2005), members of the managerial class took the "artistic critique" of capitalism (that opposing the regimentation, alienation and hierarchy of the world of work) seriously and developed new techniques, organizational structures, and ideological justifications in response. In place of the rigid "fordist" models of big firms and hierarchical control came the more "post-fordist" ones of subcontracting, short term work, and "horizontal" networked logistics where employees could enjoy more autonomy over their work—allowed to be both more *flexible* and more creative as they continuously shifted between new projects and connected with different people. Along with the increasing share of the service and knowledge sectors in the emerging "new economy," this networked mode of production turned personal qualities such as "openness," emotional intelligence, and intrinsic motivation and initiative into new assets. Formerly confined to the warm, private realm of the family or to authentic self-expression and excluded from the cold, mechanical world of work, such "human resources" now became essential to secure and ease the smooth flow of economic circuits. With them, a new image of work as a site of meaning, collaboration, and personal fulfillment—rather than something done simply for a living wage—began to take over (Jaffe, 2021).

Nowhere was this re-branding of capitalism as cool, collaborative, free, and aspirational (and its blindness to social realities) greater than in the emerging tech industry of Silicon Valley which, often abetted by old and prominent members of the 60s counterculture, was largely responsible for the additional achievement of giving technology a human face. Although Steve Jobs (who thought highly of his LSD experiences) might immediately come to mind, communications scholar Turner (2006) has traced how Stewart Brand—former fellow traveler of Ken Kesey's Merry Pranksters and author of "back-to-the-land" manual *The Whole Earth Catalog*—was central to the reconfigured perception of technology as an instrument of human liberation rather than, as it had been, of the impersonal and oppressive machinery of capitalist exploitation.[2] Becoming the embodiment of the ideal networker in the process, Brand's multiple activities and connections were a highly influential source of the internet utopianism of the 1990s which believed that, not unlike the free market, "personal" computers and information technologies would realize the promise of a global village living in peaceful, egalitarian, and free coexistence by seamlessly connecting all individuals to each other as they finally became disembodied minds capable of unfettered agency, in the immaterial realm of cyberspace. Culminating in this apex of the counterculture-neoliberalism partnership, it was this decade that marked the final entrenchment of capitalist realism.

With the re-invigorated globalization of capitalism after the fall of the Soviet bloc, the assimilation of the global south through the economic policies of the IMF, and the acceptance of neoliberal common sense by left wing parties across the global north, it was declared that we had reached "the end of history" (Fukuyama, 1992)— the victory of capitalism and liberal democracy proved final. What is more, we had all become "middle class"– capitalism had delivered and "social critique" (concerned with equality and justice) was no longer necessary. In truth, however, as Boltanksi and Chiapello argued, as the artistic critique was incorporated and social critique was dropped, (individual) autonomy was won at the expense of (collective) security—a flimsy trade-off considering the market discipline operative in the neoliberal environment. Marked by increased inequality, the externalization of care onto individuals (mostly women, and more often of color), families, and communities (Arruza et al., 2019; Dowling, 2021), an increase in the incarceration of black bodies (at least, in the US, and largely as a result of the continuing Drug War) (Alexander, 2010), and the worsening of our climate predicament through increased extraction and consumption (despite knowledge of their consequences) (Klein, 2015; Hickel, 2021), it seems like the novel critiques of gender, race, ecology, and so forth emerging in the 60s had failed to change reality even if they had in fact changed culture, and that the world remained as mad as ever. In another reversal, however, that madness was turned "straight" again by the "decade of the brain"—and so were psychedelics.

Situating the psychedelic renaissance

The point of view I have developed so far allows us to see the coincidence of the psychedelic renaissance, the definitive rise of neuroscience, and neoliberal hegemony as more than accidentally connected (even if not inherently so)—for they all have in common a focus on the individual at the expense of social context that serves to obscure the latter's effects as well as its contingency.[3] While a

2 Thanks to the reviewer for pointing out the longer conversation about this counterculture-capitalism mix under what Richard Barbrook and Andy Cameron termed "the Californian ideology" (Barbrook and Cameron, 1996), where they trace the strange "amalgamation of opposites" (new left and new right, hip and yuppie…) of the emerging "virtual class." In this essay, I have tried to acknowledge this "hybrid" while trying to highlight their originally distinct ("opposite") forms.

3 Granted, this is not (for lack of space) a very sophisticated or in-depth critique of neuroscience, and many will roll over their eyes at another "external" critique of neuro-reductionism. Certainly, questions remain about the possibilities opened by "social neuroscience" and the extent and form of the uptake of neuroscientific discourse by the public at large. Nonetheless, on the whole I believe the critique of the individualizing logic of neuroscience (and biopsychiatry) still remains as necessary as ever given its problematic history (in relation to financial interests, institutional support, and often dubious merits) and current authority. While certainly, as Rose (2019) suggests (Rose and Abi-Rached, 2013), neuroscience might still help ground claims regarding the effects of social environments, my overarching concerns are that whether in requiring all such arguments to "pass through the brain" we are not in fact losing the ability to listen to those in distress (as his own reference to Foucault would seem to prioritize) unless they can access, translate, and voice their concerns in the language of neuroscience and that we may be reproducing problematic hierarchies of knowledge in the process (e.g., subordinating social modes of knowledge).

On another note, as Langlitz (2013) traces, neuro-reductionist discourse has a precedent precisely in Timothy Leary. Nonetheless, Leary's horizon and project, unlike much of today's neuroscience, was very much one of social transformation—especially after the criminalization of psychedelics that saw

full exposition of their connections is impossible here (see Cohen, 2016), we can briefly note how, concretely, the three converge on what Mark Fisher termed "the privatization of stress," by which he referred to the ways in which mental health issues were emptied of their social meaning and disconnected from their social causes (2018). For Fisher, the main agent of this privatization was the medical model of mental illness (2009, p. 21), which conceived it as the result of "chemical imbalances" in the individual brain which could be directly targeted and compensated through psychiatric drugs. Interestingly enough, psychiatry only fully embraced this model since the publication of the DSM III in 1980 as a response to a growing sense of crisis due, not least, to the popularity of "anti-psychiatric" critiques that saw it as an institution for the social control of deviance, its drugs as mere means to render patients docile, and madness as in fact a sane response to an oppressive world (evincing, remember, the synergies between psychoanalysis and social critique at the time) (Whitaker, 2010; on the turn to biopsychiatry, see also Harrington, 2019). Again, psychedelic's contribution to this challenge to psychiatry has been documented by Hartogsohn (2020, p. 231–241), who shows how the valorization of psychedelic altered states as positive and healthy deviations from the narrow strictures of "normal" consciousness drew from and informed a similar revalorization of madness (to which psychedelic consciousness has long been compared). Pertinently, the term "acid communism" originated in a documentary about Scottish psychiatrist Ronald D. Laing, a prominent if controversial anti-psychiatric figure who also experimented with LSD therapy and argued that madness may not all be breakdown, but also "breakthrough" to better ways of being (Laing, 1967).

This is to say that, just like neoliberalism and in parallel to its historical ascendance, the medical individualization of personal distress also occurred as a reaction to a period in which, as Staub (2011) has put it, "the diagnosis was social." Not least, notes Staub, this reaction repeatedly expressed a "fashionable kind of slander" (p. 167) aimed at activists and hippies who stood accused of celebrating craziness, being mentally ill-adjusted themselves and of having impeded those in need of treatment from getting it. As this narrative took hold, enormous funds were channeled into new drugs and technologies that promised direct knowledge of and intervention on brain mechanisms. Thus, as the idea that it was *society* making people sick and therefore what was in need of transformation was discredited, it was finally possible to bring psychedelics back into the psychiatric fold. As Nicolas Langlitz argued ten years ago, "it was the neuroscientific disenchantment and depoliticization of hallucinogen research that rendered its revival possible" (2013, p. 45)—and this was itself a political maneuver.

Far from neutral, then, contemporary psychedelic science has always been political in its disavowal of its countercultural legacy (even as it lives off of it). This neutrality is further questioned by the epistemological tension between its methods and psychedelic experience, for in its heuristic individualism and abstraction of experience from context, neuroscience directly contradicts the continuous insistence on the importance of "set and setting" to the latter. Thus, the main task neuroscience was summoned to complete was to "contain" (Noorani, 2021) psychedelics and render them neutral with respect to a particular—neoliberal—background. By limiting psychedelics' potential to helping individuals adapt to, rather than challenge, a social world that it takes as given, neuroscience reproduces capitalist realism. In other words, while claiming itself free of the ideological add-ons of both left-wing counterculture and (now also) right-wing conspirituality (Pace and Devenot, 2021), and to be "demystifying" (Carhart-Harris et al., 2018). New Age spirituality by grounding it in the brain, the neuroscientific approach to psychedelics has in fact reproduced and naturalized the individualist assumptions of its own surroundings while hiding this very operation (for some, the very definition of ideology). Along the way, admittedly, it has altered—with some promise—the conception of mental illness from one focused on chemical imbalances to that of overly rigid neural pathways, but in this, it has merely "swapp[ed] out one biomechanical model of the diseased brain for another" (Devenot et al., 2022, p. 487). If anything, this new "connectionist" model of mental health reinforces neoliberal norms to an even further degree.

This is because, whether a matter of enhancement or treatment, the effects on the brain (and the mind) that psychedelics are praised for—"openness" (MacLean et al., 2011),[4] "connection" (Carhart-Harris et al., 2018), "flexibility" (Sloshower et al., 2020), "creativity" (Mason et al., 2019), "flattening" of hierarchies (Carhart-Harris and Friston, 2019), etc—exactly mirror the demands that neoliberalism's networked mode of production makes of its subjects (Malabou, 2008). On the one hand, considering the new competitive pressures of the "neoliberal rat race," it is little surprise that the revival of psychedelic research coincided with a problematization of enhancement in public discourse (Langlitz, 2013, p. 233). Even less surprising is that the best example of this lies in Silicon Valley, historical core of the counterculture and its utmost neoliberal instantiations, and finds expression in the hype around microdosing psychedelics in order to boost creativity, energy and interpersonal openness—read: productivity—at work (Kuchler, 2017). Quite literally taking the edge off of a "full blown" psychedelic experience that can prove difficult, confronting, and hard to control, this practice manages to seamlessly integrate the benefits of psychedelics into the smooth circuits of contemporary capital.

A similar logic might be said to inform, on the other hand, the use of psychedelics for treating of a variety of mental health issues for which psychedelic "connection" and "plasticity" may have transdiagnostic value (Carhart-Harris et al., 2018; Kočárová et al., 2021). This may be especially true in the case of depression, which has been deemed the characteristic pathology of our neoliberal era by Fisher (2018) and a number of other cultural commentators (van den Bergh, 2012; Rogers-Vaughn, 2014; Rosa, 2019). Often described as a radical form of disconnection (Watts et al., 2017;

him persecuted and incarcerated by the state and his subsequent contact with the Weathermen and the Black Panthers, through which this dimension became more explicit for him.

4 Interestingly, in such "openness" is often related—like in the study about the ecological and political dimensions of psychedelic experience (Lyons and Carhart-Harris, 2018)—to liberal as opposed to conservative political views. Although of course coming from and belonging to completely different academic disciplines and intentions, it is arguable that this sort of framing obscures the existence of a position "left of liberal" and any investigation of the relation of openness or psychedelic experience to it.

Hari, 2018) and loss of agency, depression stands as the diametrical opposite of the norms of networked connectivity and constant self-actualization—quite literally an expression of the exhaustion of having to perpetually (im)prove oneself (and symptomatically indistinguishable from burnout) (Ehrenberg, 2010; Bianchi et al., 2015). For philosopher Han (2015, 2017), the spread of depression and burnout reflect the ways in which today we are coerced through freedom—in other words, how, in the apparent absence of obstacles yet under pressure to conform to market logic at every step, we assume responsibility for doing more and better, or failing to do so.

The promise of psychedelic therapy is that, by inducing neuronal and psychological flexibility to undo the rigid cognitive, neuronal, and behavioral patterns of patients, it can help connect patients back to the world (Watts et al., 2017; Sloshower et al., 2020; Watts and Luoma, 2020). This is a commendable goal that can indeed help many deal with or overcome harrowing forms of distress. However, to the extent that the site of these psychedelic interventions always remains the individual and they do not question the broader social processes driving disconnection (or psychological and neural rigidity), they remain caught within responsibilizing, or "neuro-responsibilizing" (Biebricher, 2011), horizon of capitalist realism (see also Illouz, 2008). The point is not to be "against" such forms of treatment but to point to the fact of their limited horizon and to the contradiction between a discourse of connection and the material realities (an atomizing, competitive environment) and healing models (focused on the individual) of disconnection. It is also to suggest that, as "different dimensions of inequality increase" and generate "forms of mental distress [. . .] that are becoming more and more common," another psychiatry—one more focused on social determinants and solutions—is possible (World Health Organization, 2014; Rose, 2019; Petrement, 2023).

Conclusion

This essay has briefly tracked the journey of psychedelics from countercultural tools of liberation from capitalism to mainstream medicines of integration into it, and historicized this transition within changes in political economy associated with and grouped under the term "neoliberalism." Following the work of Mark Fisher, the intention behind this historical investigation has been to recover something that has been all but lost—the collective potentials embodied by the psychedelic counterculture and other social movements of the 1960s, and perhaps more importantly, the conditions that made them possible. Stemming from a widely acknowledged need to curb the destructive effects of capitalism in name of social and public needs, the New Deal order brought about a class compromise and compression of inequality that (along other factors) sustained a sense of economic security. Enabled by such "affluence" while trying to correct for its racial and gendered exclusions, new social movements expressed an optimistic confidence that further egalitarian and democratic social change was possible. In that context, psychedelics (notably LSD) seemed to promise a revolution of consciousness that could inform a more humane culture, one free of both hierarchical social divisions and of the compulsion to work and consume. It is in reaction to these material conditions and collective potentials that the neoliberal project took off.

Emerging as a conservative cultural and economic backlash promising to defend and support individual freedom and effort from collectivist entitlement, neoliberalism also managed, in the long run, to incorporate countercultural values into its economic functioning. Although the counterculture had a clear individualist streak from the beginning, the networked and competitive environment of neoliberalism has turned "psychedelic" values such as autonomy, connection, openness, creativity and flexibility into norms to comply with as much as, or even rather than, expressions of personal freedom. Ignoring matters of political economy and suggesting that success or failure to comply with these norms stems from individuals' neural and mental rigidity—which can be treated or enhanced through psychedelics—rather than from environmental pressure, the neuroscientific and medical approaches dominating the psychedelic renaissance reproduce the responsibilizing logics of neoliberalism (Gearin and Devenot, 2021). In so doing, they de-link the personal from the political and conceal the crucial insight of consciousness-raising: that the self is a product of socialization, and thus that not only does the social very much exist (contra Thatcher), but that we must aim to transform the world around us if we are to become who we desire to be. Considering that, as mentioned above, the gendered, racial, and ecological problems and divisions that radical movements in the 60s brought attention to and sought to overcome are still with us (if in mutated form) (Fraser, 2022), we would do well to adopt that insight and learn from their experience.

With respects to the psychedelic counterculture, we should certainly pick up on its rejection of work and consumption and its opening of the privileged middle classes to a broad and downwards tending social solidarity, and indeed reject its individualist politics of authenticity. First, the anti-work and anti-consumption ethos of the counterculture could help us detach our sense of personal worth from the work we (or others) do. In other words, it could stop us from pinning judgements about those who "deserve" decent lives on the kind or amount of work they do and on how they spend their income on, which would open up space for solidarity with those considered "undeserving". Second, while back then such an ethos mostly hinged on their harm to personal freedom, authenticity, and intrinsic dignity, some would argue that today it has also become an ecological imperative (Levitas, 2008; Hickel, 2021). Thus, remaining critical of the consequences of our regime of work and consumption might also help us think about the material consequences of these activities and ideological investments. Of course, neither of these shifts are easy to enact voluntaristically in a competitive context, but that is the whole point! - it is such context which impedes us from such "personal" changes. On the one hand, it has become increasingly difficult to dis-identify from work as it takes more of our time and we have come to "love" what we do (Jaffe, 2021), and such lack of time translates into more intensive forms of consumption (e.g., flying instead of taking a bus, or buying pre-packaged food instead of cooking). On the other hand, while in the 60s, some may have been able to identify downwards due to a profound sense of economic security, neoliberalism undid that possibility by instilling in the middle classes a "fear of falling" (Ehrenreich, 1989) that inspired us to identify upwards instead. Ironically, as the predominantly middle

class constituency of Occupy Wall Street and other "new social movements" exemplifies, this might have started to go far enough to have to reversed such identification again by undercutting upward mobility.

Finally, this experience should remind us of the contextual constraints of individual agency—which is never absolute and disembodied but always tied to one's social position. Contrary to popular self-help ideologies still permeating psychedelia (Plesa and Petranker, 2022), no one can transcend these limits by sheer act of will or enlightened self-awareness, for they are not (merely) the product self-limiting or culturally imposed beliefs under which one can find a source of boundless freedom. Of course, this individualist ontology was not invented by the counterculture but has a much longer history associated with liberal humanism and capitalist modernity (Gilbert, 2014), and it is indeed associated to the gendered and racial hierarchies the counterculture was often blind to. As many have noted, the Cartesian separation of the rational mind [and, nowadays, brain (Ehrenberg, 2004; Vidal, 2009)] from the natural world and the physical body allowed for the scientific instrumentalization of nature and the theory of autonomous agency, and this often translated into the instrumentalization and denial of agency of gendered and racialized others through their association with the body and nature (Plumwood, 1993; Braidotti, 2013).[5] Along with the disciplining of the body, conceived as a mere machine, according to new norms of "productive" subjectivity, these divisions have been instrumental to capitalist accumulation since the very beginning (Federici, 2004). From this longer point of view, the surprising thing is not that the psychedelic counterculture reproduced the pitfalls of this heritage and could not, in the last instance, break free from it, but that at a certain moment and under particular conditions—characterized by a relative relaxation of capitalist demands—it could—ever so briefly, in some ways, yet powerfully - point beyond it. Challenging the close connection between the scientific and technological worldview, capitalist exploitation, and social divisions, and seeking instead to place the human self within its larger cosmic and natural surroundings—this is still a project worth picking up, and to which psychedelics can still powerfully contribute (see also Falcon, 2021).

Provided we follow their wisdom and do not dissociate experience from its context, psychedelics remind us to struggle for the "collective set and setting" under which an emancipatory and ecological project traversing the mental, social, and natural can materialize (Guattari, 2000). In turn, the sensitivity of psychedelic experience on its "rhetorical conditions" (Doyle, 2011) reminds us that they will contribute to this project if and only if we summon them to do so and think more deeply about their place within it. This possibility is foreclosed by appeals to prudent neutrality which themselves seem to adhere to a belief in the essential benevolence of psychedelics, as if simply getting them mainstreamed will result in a better world (Davis, 2018). Again, this is not to be against the healing power of psychedelics. On the contrary, it is to take it seriously, for as cracks appear in the neoliberal order (Gerstle, 2022), the divergence of the therapeutic mechanisms of psychedelic therapy from individualist conceptions of mental health could once again become a turning point in our common sense ideas about the relationship between self and world, teaching us that personal experience—whether it be psychedelic, "mentally ill", or everyday—is always political. In other words, all experience—not just that of a psychedelic type-is shaped by broader forces that are not neutral or immutable but contingent and shaped by power relations.

As several participants in clinical trials with psychedelics insisted during the International Conference on Psychedelic Research (ICPR) last year, it is time that we treat people like plants: for "if a plant were wilting we wouldn't diagnose it with "wilting-plant-syndrome"—we would change its conditions. Yet when humans are suffering under unliveable conditions, we're told something is wrong with us, and expected to keep pushing through" (Ahsan, 2022). Hopefully this essay can contribute to our thinking in such ecological way about our social conditions, and psychedelics can help us change them.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

5 From this point of view, it is interesting that the period of class compromise embodied in the New Deal is sometimes referred to as that of "embedded liberalism" (Cowie, 2010)—a qualifier suggesting the disembeddedness of liberalism as a whole and also somewhat obscuring the socialist forces that pulled it down to earth.

References

Agar, J. (2008). What happened in the sixties? *Br. J. Hist. Sci.* 41, 567–600. doi: 10.1017/S0007087408001179

Ahsan, S. (2022). I'm a Psychologist - and I believe we've been told devastating lies about mental health. *The Guardian*, 6 September. Available online at: https://www.theguardian.com/commentisfree/2022/sep/06/psychologist-devastating-lies-mental-health-problems-politics (accessed November 26, 2022).

Alexander, M. (2010). *The New Jim Crow: Mass Incarceration in the Age of Colorblindness*. New York, NY: The New Press.

Arruza, C., Bhattacharya, T., and Fraser, N. (2019). *Feminism for the 99 Percent: A Manifesto*. New York, NY: Verso.

Bach, D. R. (2013). *The Rise and Fall of the American Counterculture: A History of the Hippies and Other Cultural Dissidents*. College Station, TX: Texas AandM University.

Barbrook, R., and Cameron, A. (1996). The Californian ideology health. *Sci. Cult.* 6, 44–72. doi: 10.1080/09505439609526455

Baum, D. (2016). Legalize it all health. *Harpers Magazine*, April. Available online at: https://harpers.org/archive/2016/04/legalize-it-all/ (accessed September 10, 2023).

Bhambra, G. K. (2021). Colonial global economy: towards a theoretical reorientation of political economy. *Review of International Political Economy* 28, 307–322. doi: 10.1080/09692290.2020.1830831

Bianchi, R., Schonfeld, I. S., and Laurent, E. (2015). Burnout-depression overlap: a review health. *Clin. Psychol. Rev.* 36, 28–41. doi: 10.1016/j.cpr.2015.01.004

Biebricher, T. (2011). (ir-)responsibilization, genetics and neuroscience health. *Eur. J. Soc. Theory* 14, 469–488. doi: 10.1177/1368431011417933

Boltanski, L., and Chiapello, È. (2005). *The New Spirit of Capitalism*. Brooklyn, NY: Verso. doi: 10.1007/s10767-006-9006-9

Braidotti, R. (2013). *The Posthuman*. Cambridge: Polity.

Braunstein, P., and Doyle, M. W. (2002). "Historicizing the American Counterculture of the 1960s and '70s health," in *Imagine Nation: The American Counterculture of the 1960s and '70s*, eds P. Braunstein, and M. W. Doyle (New York, NY: Routledge), 5–14.

Brown, W. (2015). *Undoing the Demos: Neoliberalism's Stealth Revolution*. New York, NY: Zone Books. doi: 10.2307/j.ctt17kk9p8

Brown, W. (2019). *In the Ruins of Neoliberalism: The Rise of Antidemocratic Politics in the West*. New York, NY: Columbia University Press. doi: 10.7312/brow19384

Carhart-Harris, R. L., Erritzoe, D., Haijen, E., Kaelen, M., Watts, R. (2018). Psychedelics and connectedness health. *Psychopharmacology* 235, 547–550. doi: 10.1007/s00213-017-4701-y

Carhart-Harris, R. L., and Friston, K. J. (2019). REBUS and the anarchic brain: toward a unified model of the brain action of psychedelics health. *Pharmacol. Rev.* 71, 316–344. doi: 10.1124/pr.118.017160

Cohen, B. M. Z. (2016). *Psychiatric Hegemony: A Marxist Theory of Mental Illnes*. London: Palgrave Macmillan. doi: 10.1057/978-1-137-46051-6

Couldry, N., and Mejias, U. A. (2019). *The Costs of Connection: How Data is Colonizing Human Life and Appropriating it for Capitalism*. Stanford, CA: Stanford University Press. doi: 10.1515/9781503609754

Cowie, J. (2010). *Stayin' Alive: The 1970s and the Last Days of the Working Class*. New York, NY: The New Press.

Cowie, J. (2016). *The great exception: The New Deal the Limits of American Politics*. Princeton, NJ: Princeton University Press. doi: 10.2307/j.ctvc77hd3

Cowie, J., and Heatchott, J. (2013). "The meanings of deindustrialization health," in *Beyond the Ruins: The Meanings of Deindustrialization*, eds J. Cowie, and J. Heatchott (Ithaca, NY: Cornell University Press), 1–18.

Crozier, M. J., Huntington, S. P., and Watanuki, J. (1973). *The Crisis of Democracy: Report on the Governability of Democracie to the Trilateral Commission* New York, NY: New York University Press.

Davis, E. (2018). Capitalism on Psychedelics: The Mainstreaming of an Underground, *Chacruna*. Available online at: https://chacruna.net/capitalism-psychedelics-mainstreaming-underground/ (accessed November 25, 2022).

Devenot, N., Conner, T., and Doyle, R. (2022). Dark side of the shroom: erasing indigenous and counterculture wisdoms with psychedelic capitalism, and the open source alternative health. *Anthropol. Conscious.* 33, 476–505. doi: 10.1111/anoc.12154

Dowling, E. (2021). *The Care Crisis: What Caused it and How Can We End it?* London: Verso.

Doyle, R. (2011). *Darwin's Pharmacy: Sex, Plants, and the Evolution of the Noösphere*. Seattle, WA: University of Washington Press.

Ehrenberg, A. (2004). Le Sujet Cérébral health. *Esprit* 309, 130—155.

Ehrenberg, A. (2010). *The Weariness of the Self: Diagnosing the History of Depression in the Contemporary Age*. Montreal, QC and Kingston, ON: McGill-Queen's University Press.

Ehrenreich, B. (1989). *Fear of Falling: The Inner Life of the Middle Class*. New York, NY: Pantheon Books.

Eisner, B. (1997). Set, setting, and matrix health. *J. Psychoactive Drugs* 29, 213–216. doi: 10.1080/02791072.1997.10400190

Escobar, A. (2018). *Designs for the Pluriverse: Radical Interdependence, Autonomy, and the Making of Worlds*. Durham: Duke University Press. doi: 10.1215/9780822371816

Falcon, J. (2021). Designing consciousness: psychedelics as ontological design tools for decolonizing consciousness health. *Des. Cult.* 13, 143–163. doi: 10.1080/17547075.2020.1826182

Farber, D. (2002). "The intoxicated state/illegal nation: drugs in the sixties counterculture health," in *Imagine Nation: The American Counterculture of the 1960s and '70s*, eds P. Braunstein, and M. W. Doyle (New York, NY: Routledge), 17–40. doi: 10.5860/CHOICE.40-1771

Farber, D. (2013). Building the counterculture, creating right livelihoods: the counterculture at work health. *Sixties* 6, 1–24. doi: 10.1080/17541328.2013.778706

Federici, S. (2004). *Caliban and the Witch: Women, the Body, and Primitive Accumulation*. New York, NY: Autonomedia.

Fisher, M. (2009). *Capitalist Realism: Is there No Alternative?* London: Zero Books.

Fisher, M. (2012). "Post-capitalist desire health," in *What are We Fighting For: A Radical Collective Manifesto*, eds F. Camapagna, and E. Campiglio (London: Pluto Press), 179–189.

Fisher, M. (2018). *K-Punk: The Collected and Unpublished Writings of Mark Fisher (2004-2016)*, ed D. Ambrose. London: Repeater Books.

Foucault, M. (2008). *The Birth of Biopolitics: Lectures at the Collège de France 1978-1979*, ed M. Senellart. New York, NY: Palgrave.

Fraser, N. (2013). *Fortunes of Feminism: From State-Managed Capitalism to Neoliberal Crisis*. London: Verso.

Fraser, N. (2017). "The End of Progressive Neoliberalism", *Dissent Magazine*. Available at: https://www.dissentmagazine.org/online_articles/progressive-neoliberalism-reactionary-populism-nancy-fraser/ (accessed September 10, 2023).

Fraser, N. (2022). *Cannibal Capitalism: How Our System is Devouring Democracy, Care and Planet - and What We Can Do about it*. London: Verso.

Fukuyama, F. (1992). *The End of History and the Last Man*. New York, NY: Free Press.

Gearin, A. K., and Devenot, N. (2021). Psychedelic medicalization, public discourse, and the morality of ego dissolution health. *Int. J. Cult. Stud.* 24, 917–935. doi: 10.1177/13678779211019424

Gerstle, G. (2022). *The Rise and Fall of the Neoliberal Order: America and the World in the Free Market Era*. New York, NY: Oxford University Press. doi: 10.1093/oso/9780197519646.001.0001

Gilbert, J. (2013). What kind of thing is neoliberalism? *New Form.* 80:7—22. doi: 10.3898/nEWF.80/81.IntroductIon.2013

Gilbert, J. (2014). *Common Ground: Democracy and Collectivity in the Age of Individualism*. London: Pluto Press. doi: 10.2307/j.ctt183p7m6

Gilbert, J. (2017). *Psychedelic Socialism*. Available online at: https://www.opendemocracy.net/en/psychedelic-socialism/ (accessed November 28, 2022).

Guattari, F. (2000). *The Three Ecologies*. London: Athlone Press.

Han, B.-C. (2015). *The Burnout Society*. Stanford, CA: Stanford University Press. doi: 10.1515/9780804797504

Han, B.-C. (2017). *Psychopolitics: Neoliberalism and the New Technologies of Power*. London: Verso.

Hari, J. (2018). *Lost Connections: Uncovering the Real Causes of Depression and the Unexpected Solutions*. London: Bloomsbury Circus.

Harrington, A. (2019). *Mind Fixers: Psychiatry's Trouble Search for the Biology of Mental Illness*. New York, NY: W. W. Norton and Company.

Hartogsohn, I. (2020). *American Trip: Set, Setting and the Psychedelic Experience in the Twentieth Century*. Cambridge: MIT press. doi: 10.7551/mitpress/11888.001.0001

Harvey, D. (2005). *A Brief History of Neoliberalism*. New York, NY: Oxford University Press. doi: 10.1093/oso/9780199283262.001.0001

Haustfeld, R. (2020). Corporadelic: a series on the intersection of psychedelics and capitalism, and the early investors making it happen health. *Psymposia*. Available online at: https://www.psymposia.com/corporadelic-series/ (accessed November 25, 2022).

Hickel, J. (2021). *Less is More: How Degrowth Will Save the World*. London: Penguin.

Illouz, E. (2008). *Saving the Modern Soul: Therapy, Emotions, and the Culture of Self-help*. Berkeley, CA: University of California Press. doi: 10.1525/9780520941311

Ingram, M. (2020). *Retreat: How the Counterculture Invented Wellness*. London: Repeater Books.

Jaffe, S. (2021). *Work Won't Love You Back: How Devotion to Our Jobs Keeps Us Exploited, Exhausted, and Alone*. New York, NY: Bold Type Books.

Katznelson, I. (2005). *When Affirmative Action was White: An Untold History of Racial Inequality in Twentieth-Century America*. New York, NY: W.W. Norton and Company.

Klein, N. (2015). *This Changes Everything: Capitalism vs. the Climate*. London: Penguin Random House.

Kočárová, R., Horáček, J., and Carhart-Harris, R. (2021). Does psychedelic therapy have a transdiagnostic action and prophylactic potential? *Front. Psychiatry* 12, 661233. doi: 10.3389/fpsyt.2021.661233

Kuchler, H. (2017). How Silicon Valley Rediscovered LSD health. *Financial Times*, 10 August. Available online at: https://www.ft.com/content/0a5a4404-7c8e-11e7-ab01-a13271d1ee9c (accessed November 26, 2022).

Laing, R. D. (1967). *The Politics of Experience and the Bird of Paradise*. London: Penguin books.

Langlitz, N. (2013). *Neuropsychedelia: The Revival of Hallucinogen Research Since the Decade of the Brain*. Berkeley, CA: University of California Press. doi: 10.1525/california/9780520274815.001.0001

Lasch, C. (2018). *The Culture of Narcissism: American Life in an Age of Diminishing Expectations*. New York, NY: W.W. Norton and Company.

Lee, M. A., and Shlain, B. (1985). *Acid Dreams: The Complete Social History of LSD: the CIA, the Sixties, and Beyond*. New York, NY: Grove Press.

Levitas, R. (2008). Be realistic: demand the impossible health. *New Form.* 65, 78–93. doi: 10.3898/newf.65.05.2008

Lyons, T., and Carhart-Harris, R. L. (2018). Increased nature relatedness and decreased authoritarian political views after psilocybin for treatment-resistant depression health. *J. Psychopharmacol.* 32, 811–819. doi: 10.1177/0269881117748902

MacLean, K. A., Johnson, M. W., and Griffiths, R. R. (2011). Mystical experiences occasioned by the hallucinogen psilocybin lead to increases in the personality domain of openness health. *J. Psychopharmacol.* 25, 1453–1461. doi: 10.1177/0269881111420188

Malabou, C. (2008). *What Should We Do With Our Brain?* New York, NY: Fordham University Press.

Marcuse, H. (1969). *An Essay on Liberation*. London: Allen Lane.

Marcuse, H. (2002). *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society*. London: Routledge.

Mason, N. L., Mischler, E., Uthaug, M. V., Kuypers, K. P. C. (2019). Sub-acute effects of psilocybin on empathy, creative thinking, and subjective well-being health. *J. Psychoactive Drugs* 51, 123–134. doi: 10.1080/02791072.2019.1580804

McAlevey, J. (2020). *A Collective: Unions, Organizing, and the Fight for Democracy*. New York, NY: Harper Collins.

Melville, K. (1972). *Communes in the Counterculture: Origins, Theories, Styles of Life*. New York, NY: William and Morrow.

Michals, D. (2002). "From "consciousness expansion" to "consciousness raising": feminism and the countercultural politics of the self health," in *Imagine Nation: The American Counterculture of the 1960s and '70s*, eds P. Braunstein, and M. W. Doyle (New York, NY: Routledge), 41–68.

Miller, J. (1987). *Democracy is in the Streets: From Port Huron to the Siege of Chicago*. New York, NY: Simon and Schuster Inc.

Noorani, T. (2021). Containment matters: set and setting in contemporary psychedelic psychiatry health. *Philos. Psychiatr. Psychol.* 28, 201–216. doi: 10.1353/ppp.2021.0032

Olsen, N. (2019). *The Sovereign Consumer: A New Intellectual History of Neoliberalism*. London: Palgrave Macmillan. doi: 10.1007/978-3-319-89584-0

Oram, M. (2014). Efficacy and enlightenment: LSD psychotherapy and the drug amendments of 1962 health. *J. Hist. Med. Allied Sci.* 69, 221–250. doi: 10.1093/jhmas/jrs050

Pace, B. A., and Devenot, N. (2021). Right-wing psychedelia: case studies in cultural plasticity and political pluripotency health. *Front. Psychol.* 12, 733185. doi: 10.3389/fpsyg.2021.733185

Petrement, M. S. (2023). Psychedelic therapy as reality transformation: a phenomenological approach health. *J. Psychedelic Stud.* 1—12. doi: 10.1556/2054.2023.00231

Plesa, P., and Petranker, R. (2022). Manifest your desires: psychedelics and the self-help industry health. *Int. J. Drug Policy* 105, 103704. doi: 10.1016/j.drugpo.2022.103704

Plumwood, V. (1993). *Feminism and the Mastery of Nature*. London: Routledge.

Pollan, M. (2018). *How to Change Your Mind: The New Science of Psychedelics*. London: Allen Lane.

Rogers-Vaughn, B. (2014). Blessed are those who mourn: depression as political resistance health. *Pastor. Psychol.* 63, 503–522. doi: 10.1007/s11089-013-0576-y

Rosa, H. (2019). *Resonance: A Sociology of Our Relationship to the World*. Cambridge: Polity.

Rose, N. (1996). The death of the social? Re-figuring the territory of government health. *Econ. Soc.* 25, 327–356. doi: 10.1080/03085149600000018

Rose, N. (2019). *Our Psychiatric Future: The Politics of Mental Health*. Cambridge: Polity.

Rose, N., and Abi-Rached, J. M. (2013). *Neuro: The New Brain Sciences and the Management of the Mind*. Princeton: Princeton University Press. doi: 10.23943/princeton/9780691149608.001.0001

Roszak, T. (1969). *The Making of a Counter Culture*. New York, NY: Anchor Books.

Sarachild, K. (1968). 'A program for feminist "Consciousness Raising"' in *Notes from the Second Year: Major Writings of the Radical Feminists,* ed S. Firestone (New York, NY: Women's Liberation), 78–80.

Sessa, B. (2014). Why psychiatry needs psychedelics and psychedelics need psychiatry health. *J. Psychoactive Drugs* 46, 57–62. doi: 10.1080/02791072.2014.877322

Shortall, S. (2014). Psychedelic drugs and the problem of experience* health. *Past and Present*, 187–206. Available online at: https://academic.oup.com/past/article-abstract/222/suppl_9/187/1537922

Silos, J. K. (2003). *Everybody get Together': The Sixties Counterculture and Public Space 1964-67* [Doctoral Dissertation]. Durham, NH: University of New Hamphshire.

Sloshower, J., Guss, J. R., Krause, R., Wallace, R. M., Williams, M. T., Reed, S., et al. (2020). Psilocybin-assisted therapy of major depressive disorder using acceptance and commitment therapy as a therapeutic frame health. *J. Contextual Behav. Sci.* 15, 12–19. doi: 10.1016/j.jcbs.2019.11.002

Smith, S. L. (2012). *Hippies, Indians, and the Fight for Red Power*. New York, NY: Oxford University Press.

Staub, M. (2011). *Madness is Civilization: When the Diagnosis was Social, 1948-80*. Chicago, IL: University of Chicago Press. doi: 10.7208/chicago/9780226771496.001.0001

The Dr. Hey P. Newton Foundation (2008). *The Black Panther Party: Service to the People Programs*, ed D. Hilliard. Albuquerque: University of New Mexico Press.

Turner, F. (2006). *From Counterculture to Cyberculture*. Chicago, IL: University of Chicago Press. doi: 10.7208/chicago/9780226817439.001.0001

Tyler May, E. (1989). "Cold war - warm hearth: politics and the family in postwar America health," in *The Rise and Fall of the New Deal Order 1930-80*, eds S. Fraser, and G. Gerstle (Princeton, NJ: Princeton University Press), 153–183. doi: 10.1515/9780691216256-007

van den Bergh, B. (2012). "Self-fulfilment or self-erosion? Depression as a key pathology of late modernity health," in *Rethinking Madness: Interdisciplinary and Multicultural Reflections,* eds G. Araoz, F. Alves, and K. Jaworski (Leiden: Brill), 87–109. doi: 10.1163/9789004373952_006

Vidal, F. (2009). Brainhood, anthropological figure of modernity health. *Hist. Hum. Sci.* 22, 5–36. doi: 10.1177/0952695108099133

Watts, R., Day, C., Krzanowski, J., Nutt, D., and Carhart-Harris, R. (2017). Patients' accounts of increased "connectedness" and "acceptance" after psilocybin for treatment-resistant depression health. *J. Humanist. Psychol.* 57, 520–564. doi: 10.1177/0022167817709585

Watts, R., and Luoma, J. B. (2020). The use of the psychological flexibility model to support psychedelic assisted therapy health. *J. Contextual Behav. Sci.* 15, 92—102. doi: 10.1016/j.jcbs.2019.12.004

Whitaker, R. (2010). *Anatomy of an Epidemic: Magic Bullets, Psychiatric Drugs, and the Astonishing Rise of Mentall Illness in America*. New York: Broadway Books.

Whyte, J. (2019). *The Morals of the Market: Human Rights and the Rise of Neoliberalism*. London: Verso.

World Health Organization (2014). *Social Determinants of Mental Health*. Geneva: WHO.

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Back from the rabbit hole. Theoretical considerations and practical guidelines on psychedelic integration for mental health specialists

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The growing interest in and prevalence of the use of psychedelics, as well as the potential benefits and negative consequences associated with psychedelic experiences, create a need for mental health specialists to be able to provide adequate and effective intervention regarding the content and consequences of these experiences, that is, psychedelic integration. At the same time, current graduate training in psychiatry, psychology, psychotherapy, counseling, etc., fails to adequately prepare professionals for such interventions. In order to fill this gap, an international, bottom-up project was established to attempt developing guidelines. This project was conducted by means of literature reviews as well as roundtable discussions among project participants, leading to a consensus on the guidelines' final scope and content. Drawing from the outcomes of this project, this article presents proposed comprehensive guidelines covering both theoretical and practical aspects of psychedelic integration, that are intended to serve as a resource for various mental health specialists who may encounter individuals in need of support considering their psychedelic experiences. These guidelines encompass clinician-friendly information on the effects of psychedelics, a definition of psychedelic integration, the general theoretical considerations linked to utilization of psychedelic experiences in clinical practice, a simple model organizing the course of psychedelic integration practice, as well as an overview of the current models of psychedelic integration, along with a selective presentation of basic and specific interventions derived from various psychotherapeutic approaches that can be employed in the practice of psychedelic integration.

KEYWORDS

psychedelics, psychedelic integration, psychedelic-assisted therapy, clinical practice, guidelines

Background

Mind manifestations

"Psychedelics" is an umbrella term that refers to a heterogeneous group of psychoactive substances[1] known for inducing a broad range of specific effects on various aspects of human experiences (for review see: Nichols, 2016; Swanson, 2018). These effects include perceptual (primarily visual) changes with both open and closed eyes (e.g., distortions, mental imagery); intensified emotional reactivity along with the increased access to one's emotions; paradoxical cognitive changes, with acute cognitive impairments on one side and increased creativity on the other; as well as alteration in one's sense of self, body, surroundings and time (e.g., the experience of ego-dissolution, and the loss of a sense of boundaries between self and world; Millière, 2017). These various effects make up specific altered states of consciousness called *psychedelic experiences,* the etymological meaning of which might be translated as "mind-manifesting experiences",[2] as it refers to the phenomenon of pulling the unconscious material to the conscious surface, allowing it to be accessed and processed (Osmond, 1957).

Therapeutic potentials of psychedelics

The acute effects of psychedelics are often accompanied by insights and the attribution of high personal meaning and extraordinary significance (Griffiths et al., 2006), which indicates the therapeutic, and perhaps transdiagnostic, potentials of these substances (Garcia-Romeu and Richards, 2018; Aday et al., 2020). A growing body of evidence suggests that outcomes of psychedelic experiences might yield long-term and mostly beneficial results on mental health problems (i.e., alleviating depression or anxiety symptoms, breaking patterns of addictive behaviors), even following a single dose (Andersen et al., 2021). Other studies reported a positive impact of these experiences on personality traits, as well as more general psychological functioning and well-being (i.e., Griffiths et al., 2006; Bouso et al., 2015; Hendricks et al., 2015), and have even shown potential for reducing recidivism among individuals in the criminal justice system (Hendricks et al., 2014). It should be noted, however, that in the absence of supportive and sustaining efforts, the potential benefits of psychedelic use tend to fade over time (Aday et al., 2020). On the other hand, in spite of relatively high levels of physiological safety, psychedelic experiences can be very challenging and may lead to numerous adverse consequences that are both short- or long-term (Carbonaro et al., 2016).

Adverse psychedelic-related consequences

The intense, confusing, and often overwhelming nature of psychedelic effects commonly results in challenging experiences, which can lead to various adverse outcomes (Carbonaro et al., 2016; Lutkajtis and Evans, 2023). These outcomes include acute-stress- or trauma-like symptoms, such as distress, disturbing thoughts, and feelings, mood fluctuations, dissociative experience of derealization or depersonalization, as well as an intrusive re-living of the challenging experience as occasional "flashbacks" or nightmares. The emergence of traumatic memory (e.g., a memory of both known or previously unknown very difficult events/experiences that could not be coped with in the moment) can also occur during the psychedelic experience (Aixalà, 2022).

In this context, some authors refer also to the "ontological shock," which is a state of being forced to question one's worldview, which might result from the radical alternation of everyday perception and informational overload often occurring under the influence of psychedelics (Carhart-Harris and Friston, 2019).

Further, the concept of "spiritual bypassing," though not psychedelic-specific, is increasingly invoked in the context of psychedelics as one of the indicators of non-integrated psychedelic experiences (Gorman et al., 2021; Aixalà, 2022; Lutkajtis and Evans, 2023). Spiritual bypassing refers to a tendency to avoid addressing unresolved problems, dealing with "mundane matters" or neglecting close relationships and responsibilities, due to declared occupation with spiritual or transpersonal ideas and development.

If persistent and not properly cared for, adverse psychedelic-related consequences can cause chronic distress, anxiety, and impairment in everyday life (Phelps, 2017; Lutkajtis and Evans, 2023), as well as suicide attempts among vulnerable individuals (Schlag et al., 2022). Here we should also mention a hallucinogen persisting perception disorder (HPPD), a psychedelic-specific condition characterized by prolonged or recurrent sensory impairments and hallucination-like symptoms (Halpern et al., 2016). Although the occurrence of such adverse outcomes is relatively uncommon, they constitute a range of potential risks associated with the use of psychedelics.

In sum, several adverse psychedelic-related consequences are being reported among people using psychedelics, which speak to the nature of psychedelic experiences that can induce a vulnerable state both during and after the acute effects (Andersen et al., 2021).

Psychedelic research and therapy

The investigation of psychedelic experiences and their therapeutic application dates back three decades prior to their scheduling as prohibited in the early 1970s (Rucker et al., 2018). After a legally imposed hiatus in research and clinical application, scientific investigation (known as the *psychedelic renaissance*; Sessa, 2012) has resumed, and these substances are now increasingly recognized by the academic, medical, and psychotherapeutic communities as substances with high potential in the treatment of many mental health conditions (Garcia-Romeu and Richards, 2018; Inserra et al., 2021). Applied research on psychedelics, however, is not merely a present-day phenomenon. Between 1940 and 1970, these substances were the subject of numerous studies focused on their clinical use as an adjunct to pharmacological treatments of alcohol use disorder, psychosis, and neurosis (for review see: Rucker et al., 2018).

1 This particular group of psychoactive substances is often broken down into classical and non-classical psychedelics. The first consists of substances (i.e., psilocybin, mescaline, LSD, DMT) that act as agonists of the serotonin receptors (mainly 5-HT2A). Whereas the non-classical psychedelics have different mechanisms of action, i.e., increasing the production of serotonin, dopamine and norepinephrine (MDMA), or as the NMDA receptor antagonist (ketamine).

2 The term "psychedelic" was coined by combining two Greek words psyche – mind or soul, and delos – to manifest or reveal.

Psychoanalytic theory, which dominated clinical practice at that time, contributed to the development of *psycholytic therapy* in the 1960s. This approach to working with psychedelics involved the repeated use of low-to-medium doses of psychedelics in the clinical context to facilitate psychoanalytic therapy (for review see: Passie et al., 2022). In parallel, another approach – *psychedelic-assisted therapy* (PAT) – has also been developed, which more explicitly combines psychiatric and psychotherapeutic interventions. Specifically, PAT consists of the administration of psychedelics in medium-to-large doses to provoke intense psychedelic experiences under controlled clinical settings. This is preceded by screening and psychological preparation, as well as followed by so-called psychedelic integration (see "What is psychedelic integration?" in the Theoretical considerations section).

The need for psychedelic integration

Given the aforementioned potentially beneficial effects as well as risks and challenges associated with psychedelic experiences, there is a growing need for psychedelic integration practice. This practice might be defined as clinical/psychotherapeutic practice focused specifically on the content and/or consequences of psychedelic experiences. The need for psychedelic integration also stems from media and market interest (or even "hype") related to promising early results of medical application of psychedelics, which has its reflection in the growing interest in and prevalence of psychedelic substances use in various settings, which might be loosely divided into legal and illegal (Rucker et al., 2018; Sexton et al., 2019; Yaden et al., 2022a; Noorani et al., 2023). The first one includes patients of the growing market of ketamine clinics and participants in clinical trials focused on PAT. In the latter case, Noorani et al. (2023), have recently pointed to the emergence of local community-based support groups with regard to psychedelic integration, among participants of PAT-focused clinical trials. Whereas the second refers to participants of underground therapies, psychedelic retreats, people who self-experiment with psychedelics (i.e., psychonauts), or those who use psychedelics in recreational settings (e.g., outdoor music festivals). This is illustrated for instance in the study by Killion et al. (2021) who analyzed data from nationally-representative cross-sectional studies among a total of 664,152 adult United States civilians, and found that LSD use has increased by 200% between 2002 and 2018.

At the same time, there is a lack of formal preparation for mental health professionals (i.e., psychiatrists, clinical psychologists, psychotherapists, counselors, etc.) who will have increasing contact with clients having psychedelic experiences (e.g., Phelps, 2017). Thus, the first proposals for psychedelic integration models have already emerged, though they are focused on specific contexts of psychedelic use, clinical trials, and ceremonial use in particular (for review see: Bathje et al., 2022). Several training centers have recently started offering workshops or certification courses on psychedelic integration or PAT, and work is currently underway to establish multi-university postdoctoral fellowships and training programs in psychedelic therapy.[3] However, to date, these are all postgraduate training courses and primarily in the US, which is unlikely to meet the growing demand. Moreover, with the exception of Gorman et al. (2021), who published their proposed model of psychedelic integration practice as a foundation for training in this regard,[4] none of the training centers/companies developed (or made public) psychedelic integration guidelines.

Purpose of this paper

Therefore, the purpose of this paper was to address the risks and needs associated with psychedelic experiences and outline our attempt to develop comprehensive guidelines on both theoretical and practical aspects of psychedelic integration. Such guidelines may inform the individual practice of various mental health specialists, who may encounter and work with clients in need of support with regard to the content and/or consequences of their psychedelic experiences.

Guidelines development

Guidelines presented in this paper arose from the larger project entitled "An international network of therapists for integration of psychedelic experiences," which was aimed at the development of the guidelines and training curriculum on psychedelic integration for the general mental health specialist audience (i.e., psychotherapists, psychologists, psychiatrists). This project was funded by the Visegrad Fund (Project ID: 21820342) and brought together an international team composed of mental health specialists and researchers who agreed to represent official institutions and societies related to psychedelics from the Visegrad group countries, including the Czech Republic, Poland, Hungary, and Slovakia, with support of partner organization from Germany. Specifically, our team consisted of psychotherapists representing various psychotherapeutic approaches, including humanistic (i.e., person-centered approach, Gestalt), psychodynamic and depth psychology (i.e., Jungian analytical approach and process-oriented psychology), a clinical psychiatrist and neuroscientist (Ph.D.), as well as an addiction therapist and harm reductionist. Specifically, this team was composed of the authors of this paper and individuals listed in the Acknowledgements section. Our current affiliations included national psychiatric hospitals, private clinics, psychotherapeutic centers, clinically-oriented research centers, non-governmental organizations providing harm reduction services as well as national-level psychotherapeutic and psychedelic societies.

Roundtable discussions

The initial guidelines were developed through the roundtable discussions and brain-storm exercises performed at the very beginning of our work. First roundtable discussion (in-person) aimed to define what "psychedelic," "psychedelic experience," "integration" and "psychedelic integration" means to each of us and what associations come up when we think of one of those terms. We then merged

3 https://hub.jhu.edu/magazine/2022/fall/new-era-of-psychedelic-treatment/?fbclid=iwar2avlm2bk2vwq-g9uu9f8r3ucbfa2fhs2dzmztushbazbz--sq5vz4ikly (Accessed June 3, 2023).

4 https://www.fluencetraining.com/certificate-programs/psychedelic-integration-therapy (Accessed June 3, 2023).

associations from each term and eventually came up with a consensual definition of psychedelic integration. In addition, we divided psychedelic integration practice in terms of its timeline as well as the scope of time after the psychedelic experience that integration practice takes place (i.e., early and late stages), as well as the theoretical and practical aspects of integration. Subsequently, after this first roundtable discussion, we split ourselves into four sub-groups (drawn on the experience in a particular theme) that were to explore and prepare a draft on four emergent areas: early theoretical, early practical, late theoretical, and late practical. These drafts were then compiled into one document which was the subject of discussion within the second roundtable meeting (in person) until the whole team had reached a consensus on the scope and content of the guidelines document.

Guidelines document

After compilation, this document was informed by the findings of a literature review that was conducted by one of the authors of this manuscript. This led to a substantial refinement of the guidelines document, which consisted of:

- historical background of psychedelics, their use by humans, and psychedelic-focused research throughout the 20-century and at the beginning of 21-century (i.e., the psychedelic renaissance); psychedelic substances' effects and mechanisms of action;
- overview of psychedelics' therapeutic potentials and related adverse consequences;
- the rationale behind the need for psychedelic integration practice, guidelines, and training;
- the definition of psychedelic integration;
- our model of the course of psychedelic integration practice;
- theoretical basis and approaches of psychedelic integration;
- an overview of currently available models of psychedelic integration;
- description of the practical application of selected psychotherapeutic approaches and methods that we considered to be adequate and potentially useful for psychedelic integration practice.

Further discussions were then conducted over the guidelines document (this time online due to the restrictions related to the COVID-19 pandemic), the results of which formed a final guidelines document that we delivered to the project Funder, together with a formal report of project completion. This final guidelines document served as a basis for preparing the present article.

Literature review

Literature review for the purpose of the guidelines document was conducted using PubMed, Web of Science, and Scopus research databases, as well as Google Scholar, through September 1, 2020. The keywords were: "psychedelic integration" and "psychedelic therapy." At first, the attempt to conduct a systematic literature review restricted to the available peer-reviewed literature was taken, but it resulted in identifying only one article that specifically considered psychedelic integration (Watts and Luoma, 2020). Thus, a comprehensive literature review was adopted that also included clinical trial manuals and books. Preprints, dissertations, magazine articles, and other gray literature were not included, though we report that numerous examples of such literature concerning psychedelic integration and therapy exist. The same comprehensive literature review was re-conducted after the project completion when the initial manuscript was being prepared based on the previously developed guidelines document. This second literature review was completed by August 25, 2022, and it resulted in inclusion in the manuscript of several recently published literature positions on the subject of psychedelic integration.

Theoretical considerations

What is psychedelic integration?

The term "integration" is used in various contexts and it usually refers to "connecting" or "bringing together" something that is or has become separated. By the "integration of psychedelic experience" in the clinical or therapeutic setting we understand any conscious and informed attempt to facilitate processing the psychedelic experience content or resulting consequences, in order to implement its relevant outcomes into everyday life. This relevant content might include a particular insight, be it cognitive or emotional (i.e., memory, vision), as well as the very fact that whatever was experienced under the influence of psychedelics, its subjective realness and meaningfulness might not be regarded as something to downplay or ignore.

Our definition of psychedelic integration coincides with most other definitions that can be found in current literature. Specifically, Earleywine et al. (2022) used a mixed-method approach to determine common themes of psychedelic integration definitions provided by various therapists offering psychedelic integration in different approaches. The sample consisted of 30 therapists (50% male), who lived in American countries (70% in the United States), identified mostly as White (73,3%), and were aged between 29 and 69 ($M = 40.66$; $SD = 12.08$). The authors found that participants viewed integration as a bridge between the psychedelic experience and daily life, which is a process that ideally begins prior to the substance intake, never ends, makes sense of the psychoactive experience, creates behavioral change, is personalized, and makes the individual whole. In turn, Bathje et al. (2022) proposed the following synthesized definition of psychedelic integration based on their extensive literature review:

> "a process in which a person revisits and actively engages in making sense of, working through, translating, and processing the content of their psychedelic experience. Through intentional effort and supportive practices, this process allows one to gradually capture and incorporate the emergent lessons and insights into their lives, thus moving toward greater balance and wholeness, both internally (mind, body, and spirit) and externally (lifestyle, social relations, and the natural world)".

Is it solely (in) the substance?

The intensity, duration, outcomes, and subjective attribution of experiences induced by psychedelics depend not only on the particular substance type or its dose but also largely on extra-pharmacological

factors. These factors include *set* (individual traits, pre-state, and expectations toward substance use/effects) and *setting* (the physical and social environment in which the substance is taken). The "drug, set and setting" model (depicted in Figure 1) of individual effects of psychoactive substances (Zinberg, 1984) may be particularly relevant in the case of psychedelics (Carhart-Harris et al., 2018). In fact, the term "non-specific amplifiers" has been used to describe the dynamic process and largely unpredictable outcome of these substances, emphasizing the action of psychedelics by amplification of set and setting, rather than producing hallucinations (Grof, 1976).

The influence the side of the substance, set, and setting should not be underestimated as they clearly play a role in both the quality and potential risk of psychedelics use. In fact, Olson et al. (2020) reported considerable individual variation in the psychedelic-like effects of placebo, which were promoted by expectations (set) and context (setting). Further, according to existing research, factors like high personality trait of neuroticism, personal/family history of psychosis, borderline personality, mania or related psychiatric conditions, inappropriate context, being an unexperienced user of a particular substance, as well as lack of or insufficient post-experience integration, are the most commonly associated with adverse reactions (Johnson et al., 2008; Barrett et al., 2017; Ona, 2018).

The role of these factors should not be limited to preparation for or being under the influence of psychedelics but needs to be taken into account during the integration process as well (i.e., as a part of discussing and interpreting the course and content of client's psychedelic experience), which is elaborated in the practical guidelines section.

Should therapists have their own psychedelic experiences?

The issue of whether one's first-hand experience with the effects of psychedelics among those working with psychedelic experiences (i.e., therapist) is necessary or not is the subject of ongoing debate in the field (Nielson and Guss, 2018). We believe that first-hand experiences with psychedelic substances are an important consideration also among mental health specialists offering psychedelic integration and not just PAT. Such experiences can provide personal insight into the nature of psychedelic effects, which contribute to understanding clients' experiences and related difficulties in the way that reading guidelines such as these, or undergoing clinical training alone, cannot provide. This view is based on other authors' recommendations for psychedelic therapists to have their own experiences with non-ordinary states of consciousness, be it with psychedelic compounds or with a variety of non-pharmacological methods, such as Holotropic Breathwork (for review see: Phelps, 2017).

However, we do not assume that personal use of psychedelics is necessary to provide support with regard to the content and/or consequences of a client's psychedelic experiences. It should also be emphasized that psychedelic self-experience is not always possible or advisable due to the illegal status of these substances in most countries worldwide, or due to potential contraindications for a given individual. Further, Nielson and Guss (2018) have pointed out that a therapist's first-hand experience with psychedelics, while common in the history of medical research on psychedelics, is largely omitted, undocumented, and understudied, which indicates the need for reliable investigations of the prevalence and influence of this phenomenon.

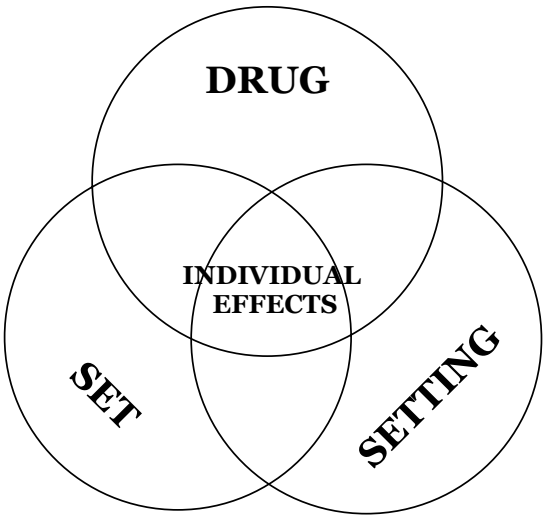

FIGURE 1
The "drug, set and setting" model of individual effects of psychoactive substances.

How do psychedelics work?

Classical psychedelics (i.e., psilocybin, mescaline, LSD, DMT) act by interaction (i.e., agonism) with serotonin receptors in the brain (Tylš et al., 2014), which causes a cascade of various biochemical, neural, and psychological mechanisms underlying psychedelic effects (for review see: Van Elk and Yaden, 2022). Regarding the effects and underlying mechanisms of non-classical psychedelics (i.e., MDMA or ketamine) we refer to the extensive review by Nichols (2016).

Under the influence of psychedelics, the disruption of normal brain connectivity and hierarchy is observed (Carhart-Harris et al., 2013), which includes the reduction of the inhibitory influence of evolutionarily more developed parts (such as the frontal cortex). Specifically, the frontal brain regions are separated from the temporal regions, which then activate evolutionary older "operators" that are responsible for the predominance of so-called *primary thinking* (Carhart-Harris et al., 2014; Swanson, 2018). This pattern of thinking is characterized by irrationality, ambiguity, conceptual paradox, and intense or impulsive emotions. Moreover, decreased frontal dominance over limbic areas precipitates the emergence of an unconscious content that is suppressed under normal conditions by *secondary thinking*, which in turn is characterized by order, precision, conceptual consistency, and controlled affect. Thus, primary thinking might reveal some important insights that are normally inhibited. However, after psychedelic effects expire, the activation of more rational and evolutionary younger secondary thinking is needed in processing, understanding, and integrating the experience properly.

Despite the substance disappearing from the body, changes triggered by psychedelics on the level of the brain network persist long-term (Carhart-Harris et al., 2014; Carhart-Harris and Friston,

2019). This concerns primarily neuroplasticity, which is the ability of brain neural networks to change through growth, forming new connections, and reorganization (Jones et al., 2009; Szabo et al., 2016; Dakic et al., 2017; Ly et al., 2018). At the psychological level, it is accompanied by increased sensibility, suggestibility, and empathy, in the weeks following the psychedelic experience, which further supports the learning process.

The psychological correlates of these changes are known as the *afterglow effect*. According to Majić et al. (2015), this may last about 6 to 8 weeks after the consumption of psychedelics and is usually characterized by slightly elevated mood, optimism, and higher openness, as well as weakened ego defense mechanisms resulting in higher vulnerability. Due to the increased neural and psychological flexibility during this period (Davis et al., 2020), new cognitive patterns or mental representations may be more likely to form, which is essential for the process of psychedelic integration. However, for the same reasons, the heightened suggestiveness of the client needs to be respected (i.e., any kind of dogmatic point of view or interventions that were not consented to need to be avoided during the client's afterglow period).

Trust the inner healer or be directive?

In the current literature on PAT, there is a distinction between non-directive and directive approaches (Hendy, 2022). The former regards the concept commonly known as *inner healer* or *inner healing intelligence*, which is often invoked in the context of psychedelic experiences as an attempt to explain their broad therapeutic effects. It is also a vital underpinning of approaches utilizing non-ordinary states of consciousness, like Holotropic Breathwork (Grof, 2014) or mindfulness-based therapy (Baer, 2015).

The inner healer concept is built on the assumption about the internal and involuntary tendency that guides the process of the psychedelic experience. This tendency is reflected in the fact that during a psychedelic experience, salient but difficult (and therefore previously suppressed) content can emerge to the surface of consciousness, allowing them to be processed (i.e., Carhart-Harris et al., 2014; Watts and Luoma, 2020). In this context, Gorman et al. (2021) have cited Rick Doblin's description regarding the utilization of this inner-directed in the MDMA-assisted therapy clinical trials:

> "We all know that's true for our bodies. If you get a scratch or break bones, your body has a mechanism to heal itself… There is this wisdom of the body to try to sustain itself. We think similarly there is something like that for the psyche".

Nonetheless, several authors have provided criticism of the reliance on this approach in research on the therapeutic application of psychedelics. This critique concerns limitations related to the theoretical foundation and the implications of the inner healer concept (i.e., bias toward concentration on intrasubjectivity), as well as the influence of transpersonal theory, perennial philosophy, and new-age culture, which lack strong empirical support (Roseman et al., 2021). Others also pointed out that relying on the notion of the inner healer leads researchers and clinicians to focus on the psychedelic experience itself while providing only nonspecific psychological support, and this neutrality has been questioned (Guss et al., 2020). Moreover, this might also prevent the utilization of coherent therapeutic approaches, the standardized and theorized methods of which could be tailored to a given individual.

Here we do not want to resolve the tension between these perspectives. Rather, we intend to inform the reader about this ongoing discussion and argue that, from our perspective, both non-directive and directive approaches can be useful in psychedelic integration practice (for one such example see "Resource orientation" in the Practical guidelines section). In our view, at the early stages of processing a psychedelic experience, the client should be provided with the unrestricted space to express its content both verbally and nonverbally (if only because of the often ineffable nature of these experiences). However, in order to facilitate the process of understanding the experience, extracting its insight, translating it into behavioral changes, and supporting their implementation in daily life, both more structure and directivity on the part of the therapist, as well as the use of approaches and methods consistent with a given school of psychotherapy, will likely be the most effective.

Is psychedelic integration legal when psychedelics are not?

Due to the illegality of psychedelic substances in most countries worldwide, psychedelic integration practice is surrounded by a number of ethical considerations (for review and recommendations see: Pilecki et al., 2021). These are dependent on local drug policy and license specification, but among them, one can be listed: being the subject of disciplinary action taken by the licensing board to which the practitioner is affiliated (that may see it as unprofessional, unethical, or outside of the boundaries of acceptable practice), as well as potential accusation of malpractice by the client (who may feel somehow disadvantaged) or, for instance, his/her family members (who may not be in favor of psychedelic integration).

These considerations are similar to those that arise when working with individuals who continue to use other illicit psychoactive substances, as in the case of the harm reduction-based model of addiction psychotherapy (Tatarsky, 2003). *Harm reduction* refers to evidence-based, pragmatic, compassionate, and non-judgmental approaches to policy, prevention, or clinical interventions that are focused on reducing negative consequences without eliminating their source altogether. In the case of substance addiction, this means focusing on modifying the pattern of use to promote safety and reduce related harms, without necessarily stopping overall substance use if the client is unwilling or unable to abstain from it at that time for any reason. Thus, the harm reduction approach provides the theoretical basis and rationale for interventions and clinical practice regarding people who undertake problematic behaviors, such as illicit psychoactive substance use.

As proposed by Gorman et al. (2021) and Pilecki et al. (2021), the harm reduction approach may also be used as a framework to provide clinical practice around clients' use of psychedelics, including psychedelic preparation and integration. Within this approach, the use of psychedelics is not pathologized or stigmatized, nor is it promoted or encouraged. Rather, a mental health specialist is focused on addressing a client's needs, assessing

and dealing with his/her psychedelic-specific and co-occurring issues (whether social, health, or legal), as well as on informing their decisions about future psychedelic use. For example, if a client is interested in using psychedelics in order to treat their mental health condition, a non-judgmental education about psychedelics' effects, related risks and contraindications to their use should be provided. Moreover, following a harm reduction perspective, if there are more conventional methods of treating the client's condition with proven effectiveness (such as pharmacotherapy and/or regular psychotherapy in a particular modality), they should be encouraged to use them instead of taking psychedelics, in order to avoid risks associated with their use. Likewise, a discussion should be had about engaging in alternative methods that utilize altered states of consciousness (e.g., Holotropic Breathwork, mindfulness-based therapy, hypnotherapy) that do not involve administration of the psychoactive substance (especially if it is illegal under local regulations).

What about psychedelic preparation?

This paper is focused on psychedelic integration. However, ideally, a psychedelic experience is preceded by preparation for it. The value of psychedelic preparation should not be overlooked, as it is able to prevent some of the potential adverse consequences of using psychedelics. Also, according to Aixalà (2022), in cases where a lack of proper preparation (and/or experienced facilitation) resulted in adverse consequences, it might be helpful to provide an education that would serve as a sort of "retrospective preparation," so that client would be aware of omissions or malpractices that he/she had experience. Guidelines on preparation for psychedelic experience have already been developed and presented in detail in numerous articles (e.g., Johnson et al., 2008; Carmo Carvalho et al., 2014; Gorman et al., 2021) or books (e.g., Fadiman, 2011; Westrum and Dufrechou, 2019), which is why this is not elaborated upon in this article. Here we only provide an outline of what such preparation should be or usually consists of (e.g., in the context of PAT or PAT clinical trials):

- *screening* for preexisting psychiatric disorders or other contraindicators that put individuals at high risk and therefore should discourage them from using psychedelics for safety reasons; this includes a current or past history of psychotic disorders, bipolar affective disorder, and/or borderline personality disorder, current medication (e.g., with antipsychotic medications, tricyclic antidepressants, lithium, serotonin reuptake inhibitors, monoamine oxidase inhibitors) or psychoactive substance use, pregnancy, serious neurological, renal, liver or cardiac disease, as well as such relative contraindicators as family history of psychosis or suicide attempts (for review see: Johnson et al., 2008)
- *psychoeducation* (i.e., informing about the nature of psychedelic experience, and about how these substances affect the human brain and mind, as well as addressing the client's questions and concerns);
- *counseling* (discussing the expectancies toward the psychedelic experience and supporting the emergence of personal intention for it);
- discuss *harm reduction measures* that might reduce the potential risks/harms in terms of set and setting during the experience (i.e., Fadiman, 2011).

Practical guidelines

The course of the psychedelic integration practice

As a way to organize psychedelic integration practice, we propose a simple two-stage model, as depicted in Figure 2. This model is conceptualized on the dimension of time, dividing psychedelic integration practice into early and later stages, which follow the psychedelic experience. This model also distinguishes psychedelic integration from regular psychotherapy (for more information see "After the integration" in the Practical guidelines section). We believe that this distinction should be made, as clients who might seek support with regard to their psychedelic experiences do not necessarily need or want to begin psychotherapy. In some cases, however, psychedelic integration might transition to psychotherapy, that is, to clinical practice that is not solely focused on the content and/or consequences of the client's psychedelic experience(s). In other cases, psychedelic integration ends with what we like to call, an open-ended integration, which is meant to acknowledge both the possibility of renewed contact with the client later on (i.e., follow-up sessions) as well as the client's own ongoing and autonomous work to integrate the psychedelic experience into his/her everyday life, which continue after such collaboration.

The *early stage* is assumed to be short-term (lasting approximately up to five one-hour sessions) and is intended to cover standard clinical/therapeutic practices. This includes providing basic support, establishing the therapeutic relationship, screening for conditions requiring medical management, psychoeducation, and normalization (if needed), as well as specifying the client's goals and determining working direction. Treating the potential adverse psychedelic-related consequences and stabilizing the client's condition should be prioritized here as it is usually the reason to seek such help. In fact, although psychedelic integration might be focused on maximizing and sustaining benefits arising from the psychedelic experience (see below), such work is usually performed within the context of psychedelic clinical trials, retreats, or organized ceremonies. Whereas people seeking help from therapists, or other mental health specialists offering clinical practice, usually do so due to adverse psychedelic-related consequences that they could not resolve by themselves (or with the help of previous healthcare providers). Thus, the "Basic interventions" described in practical guidelines are most suitable in the early stage, while "Specific intervention" may be more useful in the *late stage*, as it concerns how different psychotherapeutic approaches and methods might be adopted for the purpose of meeting client's needs regarding psychedelic integration. While the early stage is assumed for rather quick and basic interventions (i.e., coping with confusion; providing psychological support), the late stage is focused on deeper work at a longer period (i.e., wider exploration of the specific content of the psychedelic experience; support in incorporating and maintaining major insights into one's everyday life). In that sense, the late stage is a natural continuation of the previous

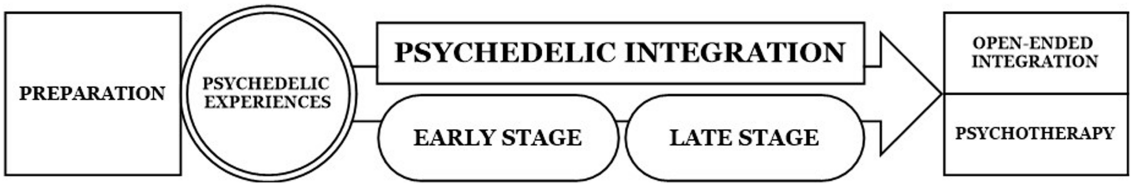

FIGURE 2
The simple two-stage model of the course of psychedelic integration practice.

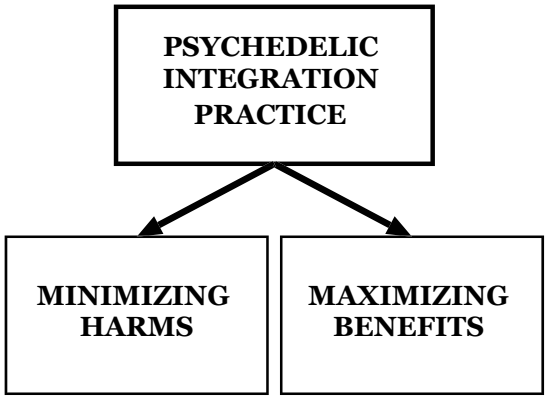

FIGURE 3
The general organization of the needs and/or goals of psychedelic integration practice.

work and could also be the beginning of regular psychotherapy, which may reach far beyond the scope of the client's psychedelic experience.

Integration goals

For individuals seeking mental health specialists' support regarding their psychedelic experience, the interventions should focus on its integration. From the pragmatic stance, the needs and/or goals of such interventions might be generally organized as either maximizing the benefits or minimizing the harms that result from the psychedelic experience in question (Figure 3). This distinction is commonly found in the literature on psychedelic integration (e.g., Gorman et al., 2021; Aixalà, 2022). However, each of the undertaken interventions should directly address the client's articulated needs and concerns.

In the first case, we are dealing with an experience that is most probably perceived as positive and therefore beneficial for the client's condition. The client may, for example, feel a notable improvement in his/her mood or may have broken an unfavorable pattern of behavior that has accompanied him/her for a long time. However, as the changes initiated by such an experience tend to fade over time, the client might need both conditions and specific practices that will enable them to consolidate and preserve his/her life. As a result of a psychedelic experience, a client might also experience undesirable symptoms that interfere with his/her condition and/or well-being. These symptoms might mean both a worsening of existing mental health problems, and experiencing some previously non-existent difficulties (e.g., anxiety, sleep disturbances, emotional reactivity, or impaired cognition). Then, integration work should be primarily focused on psychological support in relieving these symptoms (e.g., to mitigate the distress and/or anxiety surrounding or caused by the experience, and to connect with the present moment thus helping the client to enter the optimal arousal zone).

Basic interventions

Opening and direction of the sessions

Not everything regarding psychedelic integration practice is or should be non-ordinary. After all, besides focusing on the psychedelic experience and its consequences, sessions of psychedelic integration are not different from regular counseling, therapeutic meetings or, in specific cases, crisis intervention. Thus, most of the practical considerations here should be taken as usual, based on the practitioner's workflow. In our understanding, these considerations should include:

- taking care of the client's *sense of security and confidentiality* (i.e., providing support, non-judgmental space, and being careful to not overwhelm the client with our questions, responses, and/or attitude to begin with);
- co-determining *specific work direction and priorities* (e.g., what brought the client to us? Does the client need/want to analyze and understand the content and outcome of their psychedelic experience or rather to calm down and deal with the adverse symptoms following it?);
- conducting *general medical history and screening*, that might inform about the client's medical history as well as health condition and socio-economic situation;
- establishing a *formal structure* of the work being undertaken (i.e., length, frequency, number, place, time, and costs or other terms of meetings).

One size does not fit for all

We believe that every client must be treated with as much of an individualized approach as we are able to provide them within a given circumstance. In the case of psychedelic integration, this means that we have to reflect on several factors that might inform us about and help us to adjust to a particular client. Based on the results of our roundtable discussions in this regard we propose the key considerations (and exemplary questions that might be useful for assessing them), which are summarized in Table 1.

TABLE 1 Our proposed key considerations and exemplary assessment questions about the psychedelic experience(s) of interest.

Key consideration	Exemplary assessment question
Setting in which a particular psychedelic experience occurred	Where did this experience take place? What do you recall from your surroundings? Where were you when under the influence of this substance? Were you alone? Who accompanied you during this experience?
Substance that induced the experience	Was it a classical or non-classical psychedelic? What was the dose? Did you redose or take a booster? If so, at what point and what was the dose? Was it mixed with other psychoactive substances?
Motives and intentions to have that experience	What was your motivation to take this substance? What were your intentions? Why did you want to have that experience? Was it just out of curiosity, as a means of self-exploration, self-development, as a part of experimental treatment or self-medicalization, or for reasons that might be called hedonistic? If it was intentional, what were the hopes and expectations? Have you done anything specific to prepare for this experience?
Client's general health condition	Do you have any physical or mental health problems? Were your parents or other close relatives ever diagnosed with any medical or mental health problems? Are you or were you taking any medications? Do you have any relational, social, or other problems that concern you?

Further, an individualized approach is needed due to the so-called noetic quality of the psychedelic experience, which refers to a common phenomenon of having a feeling that the content of the psychedelic experience has been as real or even more real than one's usual sense of reality (Richards, 2015; Yaden et al., 2017). The phenomenon relates to the meaning and level of significance that is attributed to a particular psychedelic experience, which is why it should be taken very seriously. We believe that it might be useful to treat the psychedelic experience as one of the experiences in the client's life (i.e., not to underestimate its relevance), despite the metaphorical language of its description. However, due to its highly subjective nature, adjusting our approach toward a particular client is necessary in order to provide a successful intervention.

Competences and metaskills

Phelps (2017) attempted to develop a list of competencies for the training of psychedelic therapists. According to this list, working with psychedelic experiences may require knowledge of psychedelic effects and mechanisms of action, empathetic abiding presence and trust enhancement, self-awareness, and ethical integrity as well as proficiency in complementary techniques. The author also indicated so-called spiritual intelligence, conceptualized as having not only the awareness of our self and relationships but also of what is beyond (transcendent). As a complement to this, we believe that it should also be emphasized that mental health practice (psychedelic integration included) requires not only learned and crafted competencies but also specific attitudes and ways of working with clients, which range beyond the theoretical knowledge, practical methods, and individual psychotherapeutic approaches. This constitutes not *what* but *how* the practitioner is working (i.e., managing the pre- and post-session contact, using humor or self-disclosure), what has been referred to as *metaskills* (Mindell, 1991). Therefore, we suggest that specialists willing to provide psychedelic integration should act toward the development of both such competence and meta-skills, as they may contribute to more manageable and effective practice.

Resource orientation

In our view, psychedelic integration practice should be based on the client's resources (i.e., source of support, strength, or a coping strategy), rather than their deficits. According to this strength-based approach, it might be useful to encourage the clients to explore their own biography for skills, personal values, experiential knowledge, passion, good memories, favorite activities, and other sources alike. Those are the client's resources that might serve to mitigate, compensate or combat his/her vulnerability, as well as to cope with the difficulties that do or will occur (i.e., Priebe et al., 2014). In fact, even exploring these resources might lead to weaving a new narrative or meaning and thus contribute to the integration of the psychedelic experience of interest.

It is also important to search for the outer resources, which might include the client's social network and surroundings, such as family members, friends, or others whom clients might trust, and speak about this difficult situation/experience without feeling ashamed or judged. Such resources may also contribute to a client's strength, as they might serve as a stabilizer in challenging situations or conditions. In fact, if the client has such relational resources, the integration of a psychedelic experience that did not result in adverse symptoms usually does not require any support from mental health specialists.

One particular resource-oriented intervention that might be helpful in this context is to bring the client's attention to their "inner healing" part (see "Trust inner healer or be directive?" in the Theoretical consideration section), which might be identified by the fact that it's what encouraged him/her to seek help (though it is not always the case). It might also be referred to as the source of the client's hope and optimism, or as what helped him/her to overcome some past difficulties. Identification of such a "healing part," preferably felt rather than just understood, should be then empowered as a source of constant support that might accompany clients' present and subsequent processes.

Calming down and grounding

Although usually needed during or immediately after a psychedelic experience, calming down and grounding techniques might also be useful in the course of psychedelic integration practice. For instance, this might include situations when the client contacts us due to experiencing undesirable symptoms, or when he/she will reconnect with the psychedelic experience during sessions. Rapid speech, restlessness or agitation, and psychotic-like symptoms might indicate a client's need to calm down and obtain reassurance before undertaking any other interventions. The aim of such techniques is to mitigate the distress and anxiety surrounding or caused by the experience and to connect with the present moment thus helping the client to enter the optimal arousal zone. Hence, these techniques may both help clients carry on with everyday duties and provide the space necessary for further work with the psychedelic experience.

There are many ways in which calming down and grounding after a difficult psychedelic experience might be facilitated. An example is bringing the client's attention to his/her feet on the floor/ground, looking around and describing the immediate surroundings, performing a body scan, stretching, mindful walking, direct contact with nature (i.e., working with plants in the therapeutic context or barefoot walking on the grass/ground or gardening, when outside). Another example might be the active imagination or focusing methods (i.e., encouraging the client to imagine a safe space or exploring and describing his/her bodily sensations in the present moment). Importantly, this does not mean that any redirection of attention is favorable (e.g., engaging in social media or other screen time is discouraged). Further, self-expression activities, such as writing, singing, painting, or dancing are also highly recommended. In addition, if needed, the client should receive some sort of general self-care and health-promoting recommendations regarding sleep, diet, stress management, screen time moderation, etc.

Normalization and psychoeducation

Due to the nature and broad spectrum of psychedelic effects and their possible outcomes, the clients that we approach may have experienced themselves in a way they never had before, might be worried about their mental health, or even that their altered condition or related dysfunction will last for the rest of their life. Therefore, normalization might help to manage their stress by seeing that their concerns are actually common among people who have also experienced it. This should be evidence-informed psychoeducation about psychedelics effects, mechanisms of action, afterglow phenomenon, general safety, related risks, and consequences, as well as how set and setting influence the psychedelic experience (i.e., as provided in the Theoretical consideration section). Ideally, the specialist would be able to refer to the current scientific literature in this field, preferably meta-analysis results. Also, in specific situations, we believe that self-disclosure about the psychedelic experience (e.g., in a research setting) can facilitate normalization and a sense of trust, and thus be helpful for the client. However, care must be taken in doing so to avoid overlooking or devaluing the distress experienced or needs expressed by the client. Here, the occurrence of HPPD or other psychiatric conditions (e.g., psychotic symptoms) should not be underestimated, and we advise referring the client for a psychiatric consultation if such symptoms are present, while still providing support and addressing other existing difficulties.

Analyzing the experience

When the abovementioned concerns are checked and taken care of, it is time to address the very content of the client's psychedelic experience. This is not about our interpretation but about the facilitation of the client's process of understanding and drawing conclusions about a particular experience and its consequences. Such facilitation should include providing a safe, non-judgmental space to describe the experience in detail, paraphrasing and otherwise supporting the sharing of the content, perceptions, and feelings of a particular experience. This might be followed by asking open-ended, in-depth questions, or inquiries, in order to explore the outcomes or impact that the psychedelic experience may have already had on the client's life, as well as the insights and potential changes that may yet occur. We recommend expressing curiosity during such a process. Further, oftentimes it might also be useful for a client to provide him/her a space and the instruction to reflect on a psychedelic experience of interest. This might include reconnecting with the experience and drawing conclusions from it after coming back to the present moment. Table 2 provides our proposition of the exemplary instructions and questions that may support fulfilling each of those steps. This particular set of questions resulted from our roundtable discussion and is based on currently used protocols of clinical trials with psychedelics in the National Institute of Mental Health, Czech Republic.

In addition to the experience itself, the client's prior intentions and/or expectations for it can also be a valuable subject of analysis, with particular attention to how they relate to the actual content and outcome of the client's experience. Importantly, such psychedelic experience analysis does not need to be limited to the above-mentioned "talk-therapy" interventions. We advise supporting it in a more expressive manner, such as by drawing, writing (both during the session or as "homework"), role-playing, dancing, or other forms of spontaneous movement (depending on what the client and we ourselves are comfortable with).

Organizing the experience

Further, as the psychedelic experience may be remembered as a series of incidents rather than a coherent process, the client might

TABLE 2 Our proposed exemplary instructions and questions are useful in the facilitation of reconnection with, going back, and drawing conclusions from the client's psychedelic experience.

Focus on the past – reconnecting with the experience.
Instruction: *Ask the client to briefly close his/her eyes, take a few deep breaths and then try to recall the most important moments of his/her psychedelic experience, then ask the following questions.*
What's the first thing that comes to your mind when focusing on that experience?
What did you perceive as the most pleasant thing during the experience?
Have you had any similar experiences before? (not necessarily related to psychedelics)
What helped you cope with difficult moments?
Which moments of the experience were the most important for you?
Focus on the present – going back from the experience.
Instruction: *Ask the client to stay with his/her closed eyes, focus attention inwards before answering the following questions regarding the previously reconnected experience, and open his/her eyes again (encourage the client to provide as many details as possible).*
Can you describe your current impressions?
What are you thinking about now?
What is now going on in your body?
What are your feelings/emotions?
How do you feel about reality?
Focus on the future – drawing conclusions from the experience.
Instruction: *Ask the client to briefly close his/her eyes for another moment and think about the experience in the context of his/her life in the near future, then ask the following questions.*
How would you rate the realness of your experience?
Was it an authentic experience, or just the effects of the substance, which is now gone?
Is there something you can bring back to your everyday life from this experience?
What needs to be done in order for it to happen?
What would need to happen for you to feel that this experience got resolved or integrated?

need and benefit from an effort to organize it. Organizing the experience might support additional insights by enlarging the context and perspective. Thus, we believe that it might be helpful to provide the client with certain "maps." Following are a few examples of such exercises that are based on our clinical practice experiences.

The simplest example of a map to organize the psychedelic experience would be the axis of time. For this purpose, we can provide the client with a piece of paper and a pen, ask him/her to draw a timeline, and mark on it the parts of the experience that he/she remembers. Then we might ask him/her to put additional points on a timeline, such as making a decision on substance intake, coming to us, and whatever relevant events he/she might think of in between.

Likewise, a client might be asked to draw and fill in a "graph of emotions," where the X axis represents the given psychedelic experience timeline (e.g., from the psychedelic intake or some time before to the time at which the effects of a particular psychedelic substance usually subsides), and the Y axis represents a scale of emotions intensity (e.g., from. +10 to −10). Clients can also be encouraged to make notes about important moments or emotions. Such a "graph" can also be used to organize and explore the intensity of perceptual changes or other elements of the psychedelic experience the client refers to as salient. Figure 4 depicts an example of such exercise implementation.

Another useful way of organizing the experience might be by a reference to the body (i.e., in terms of bodily sensations accompanying the client during the experience, or any repetitive sensations associated with the experience). The client's relationships are also worth exploring for any influence on the psychedelic experience (i.e., how are they sustained or if there are any ongoing revisions or movements). Furthermore, if there were other people involved in the psychedelic experience, is it reasonable to consider how the client sees them or the relationship with them now.

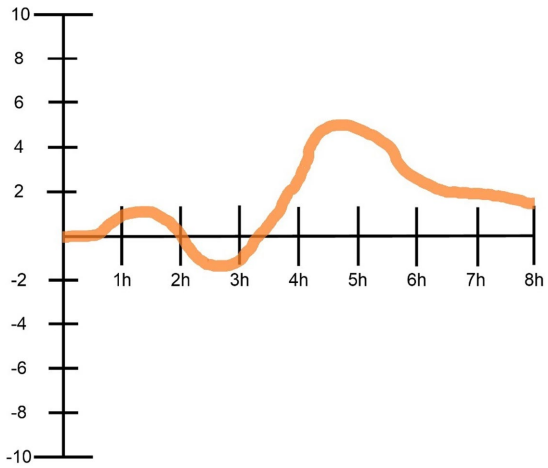

FIGURE 4
An example implementation of the "graph of emotions" exercise for organizing psychedelic experiences according to emotional intensity as it fluctuated over time. In this case of the generally positive psychedelic experience, we see that after about an hour of substance intake (psilocybin), the person felt elevated (+1), which however quickly became uncomfortable (-2) for about an hour, after which it began to gradually but quite dynamically elevate, peaked between the fourth and fifth hour (+5), and then was progressively "going back to normal" for the next few hours.

Specific interventions

Progression to the second stage

The assumption behind our two-stage model of psychedelic integration is that for some clients, perhaps the majority, the abovementioned interventions (constituting the first stage) should be enough to meet their needs and goals. However, others may need extended support and more sessions, which will usually require meetings applying more specific methods of psychotherapeutic support. This need might occur primarily when the client is experiencing adverse symptoms associated with challenging psychedelic experiences that have not yet been resolved, or when previous work triggered content (e.g., autobiographical or relational) that causes distress and thus requires addressing. Interventions that can serve such purposes range from approaches developed specifically to work with non-ordinary states of consciousness (i.e., indigenous practices or Holotropic Breathwork), through models of integration of psychedelic experiences, to utilization of the general psychotherapeutic approaches. These are briefly described and discussed below.

Models and approaches to psychedelic integration

Although psychedelic integration was acknowledged and practiced in some form since the mid-1950s (for review see: Aixalà, 2022), well-elaborated models of integrating psychedelic experiences are being developed only very recently, with publications in this regard going back no further than 2017 (Bathje et al., 2022). These include a quite diverse spectrum of models that are either derived from or refer to specific psychotherapeutic approaches. This is understandable as a client's needs and goals regarding psychedelic integration do not usually differ from those with which clients generally seek help from mental health specialists. The exceptions apply to experience dynamics and its content that might be described as psychedelic-specific. However, while psychedelic experiences substantially exceed everyday cognition and emotions, they still fall within the wide range of human experience. Hence, it is reasonable to apply various psychotherapeutic approaches to work with the content and consequences of psychedelic experiences, which have already been recognized by a number of authors.

As depicted in Table 3, most of the currently available models of psychedelic integration can be described as holistic, as they combine methods oriented toward the psychological, somatic, spiritual, and community/environmental domains, while other models concentrate solely on mind and behavioral change. The most commonly used therapeutic approaches are transpersonal psychology, Jungian analytical psychology, and third-wave cognitive-behavioral approaches (i.e., Acceptance and Commitment Therapy). Some of these models are also based on indigenous traditions, in which psychedelic substances were commonly utilized for a variety of purposes. Here it should be stressed, however, that practices derived from indigenous traditions might be difficult or even potentially inadequate for implementation outside the specific setting, and rituals that these practices emerge (Yaden et al., 2022b).

A detailed presentation of current psychedelic integration models is beyond the scope of this paper. Here we focused only on a brief description and discussion of how selected psychotherapeutic approaches might be utilized for psychedelic integration. Whereas in

TABLE 3 An overview of current models of psychedelic integration, with an emphasis on their overall purpose, the therapeutic approaches they are based on, as well as the specific domains of human experience they focus on, and the stages or major themes of integration work they distinguish.

Model, (author, year)	General purpose	Approaches	Domains	Stages/themes
Psycho-Spiritual Integration Process (Cohen, 2017)	Establishment or reunification of the harmonic relationship between the conscious and unconscious	Jungian analytical psychology, Ayahuasca ceremonies tradition	Psychological, somatic, psychospiritual	Pre-ceremony life experiences, the ceremony, post-ceremony integration, process and practices during and after integration, and ayahuasca itself
Visionary Plant Medicine Integration (Coden, 2017)	Providing a manual for people participating in ceremonies with plant-based psychedelics	Transpersonal psychology, Indigenous shamanic traditions	Reflection, Inner Listening and Creative Expression, Psychospiritual Practice, Meaning Making, Spaciousness and Time, Nature and Grounding, Physical Care, and Cultivating Virtues and Turning Outward	Introspection, self-care, relationships and community, the natural world
Holistic Model for a Balanced Life (Bourzat and Hunter, 2019)	Moving oneself and one's life in the holistic direction	Indigenous shamanic traditions	Body, Mind, Spirit, Community, and Natural Environment	Returning from the psychedelic experience (capturing a narrative on it), understanding the experience, and implementing its decoded content
Realms of Integration (Buller and Moore, 2019)	Providing a self-help manual (workbook) for psychedelic integration	–	Mental/intellect, Mind–body surroundings, Spiritual, Lifestyle/career, Relationships	–
SAFETY (Westrum and Dufrechou, 2019)	Providing general introduction and a self-help manual for psychedelic integration	Based on but not limited to Transpersonal psychology	Psychological, Somatic, Spiritual/existential, Social/Communal	–
Nature Contact (Gandy et al., 2020)	Enhancement of nature relatedness	Nature-focused rituals, nature-based settings, mindfulness practices	Psychological, Affective, Mystical/Awe, Nature relatedness	–
Psychedelic Harm Reduction and Integration (Gorman et al., 2021)	Providing a transtheoretical framework and rationale for clinical practice with clients who using or considering using psychedelics in any context	Transtheoretical: Harm reduction approach, psychedelic-assisted therapy, mindfulness-based and psychodynamic psychotherapy	Psychological, somatic, spiritual/mystical, harm reduction (as a goal of behavioral change)	Preparation (assessment, psychoeducation, harm reduction) and integration (working with challenging and/or positive experiences)
Accept, Connect, Embody (Watts and Luoma, 2020)	Providing a clinical framework for psychedelic-assisted therapy (including preparation and integration)	Acceptance and Commitment Therapy	Psychological, Behavior Change	Pulling together the narrative (giving space to share the experience and support meaning-making), distilling key insights, and supporting behavior change
Beyond the narrow life (Ortigo, 2021)	Providing a philosophical and psychotherapeutic framework for psychedelic-assisted therapy (including preparation and integration)	Jungian analytical psychology, Transpersonal psychology, Existential philosophy, et al.	Psychological, Somatic, Spiritual, Behavioral	Beyond personal identity (integrated, flexible self), beyond shadow projection (compassion), beyond the narrow life (creative engagement and symbolic renewal)
Psychotherapy for non-ordinary states of consciousness (Aixalà, 2022)	Providing general-purpose guidelines for psychedelic integration	Transpersonal psychology, Holotropic Breathwork, Gestalt therapy, et al.	Cognitive, Emotional, Behavioral, Somatic, Spiritual, Social, Time	–
EMBARK (Brennan and Belser, 2022)	Providing a transdiagnostic model of psychedelic-assisted psychotherapy	Cognitive-Behavioral Therapies, Mindfulness, Motivational Interviewing, et al.	Existential-spiritual, Mindfulness, Body-aware, Affective-cognitive, Relational, Keeping Momentum	–
Internal Family Systems Model for Psychedelic Experiences (Morgan, 2020)	Providing a framework for understanding the psychedelic experience and helping embody its insights into everyday life	Internal Family Systems	Psychological, Emotional, Somatic, Behavioral, Spiritual	Preparation, Experience, Integration
Psychedelic- supportive psychotherapy (Wolfson, 2023)	Provide a model of psychological support that can be immediately implemented by qualified practitioners	Transtheoretical with the emphasis on harm reduction approach and positioning the therapeutic alliance as a central agent of change	Emotional, Psychological, Spiritual	Before and beyond the psychedelic experience

Table 3 we summarized all of the currently available models of psychedelic integration by specifying their general purpose, utilized therapeutic approaches, domains of human experience that they focus on, stages or major themes of psychedelic integration that they distinguish as well as model label, author(s) and year of publication. This will hopefully inform readers about the scope of models that might potentially be implemented within the individual's practice. The summary provided is based on our literature review, as well as a recently published review in this regard (Bathje et al., 2022), with the inclusion of Morgan (2020), which we found was omitted, as well as work by Aixalà (2022) Brennan and Belser (2022) and Wolfson (2023), that were published after the compilation of the Bathje et al. (2022) review (in August 10, 2021).

Importantly, the authors of individual models presented in Table 3 provide also examples of some specific practices serving to facilitate psychedelic integration. These practices form a wide and diverse range of methods used in the given psychotherapeutic approaches, some of which were selected by use and briefly described below. It should be stressed, however, that the provided list of examples is by no means exhaustive, and that professional training (usually certification) as well as supervision may be required to apply them when working with clients. In addition, the current models of psychedelic integration also include a range of more general practices that are often used outside the clinical or psychotherapeutic setting, including self-care. Among these practices are: creative expression, journaling, reflection, musical engagement, spending time in nature, active movement, relaxation, meditation, breathwork, and spiritual practices (for review see: Bathje et al., 2022).

Acceptance and commitment therapy

More than one manualized protocol for combining ACT with psychedelic-assisted psychotherapy for the purpose of depression treatment was proposed, including the psychedelic integration practice (Guss et al., 2020; Sloshower et al., 2020; Watts and Luoma, 2020). This was based on the theorized overlap between the ACT's main objective of reinforcing psychological flexibility and the potential therapeutic mechanisms of psychedelic-induced experiences (Davis et al., 2020). Although several differences exist, in these protocols the therapist is first focused on eliciting the client's narrative of the psychedelic experience and then attempts to identify parallels between this narrative and the principles of ACT (i.e., present moment, contact, acceptance, self as a context, diffusion and committed action). The ACT-specific integration practices that the therapist undertakes to facilitate psychedelic integration include practicing mindfulness, reflecting on changes that have occurred due to the experience, discussing the client's values and their current implementation in his/her life, reinforcing internalization of desired changes, and forming of new habits. For more information on the utilization of ACT and other third-wave CBT approaches to psychedelic integration, we refer to the review by Yaden et al. (2022b).

Mindfulness-based interventions

In addition to above mention basic calming down and grounding techniques, practicing mindfulness-based interventions may facilitate both minimizing adverse symptoms (e.g., by alleviating/managing stress or anxiety) and maximizing benefits (e.g., as a tool for bringing greater awareness, balance, or self-control to everyday life) resulting from client's psychedelic experience(s). Mindfulness might be defined as both the simple relaxation technique and the psychological process of bringing one's attention to whatever experiences occurring in the present moment, exploring senses, thoughts, and emotions with a curious and non-judgmental attitude (e.g., Brown and Ryan, 2003). Examples of mindfulness practices include mindful breathing, walking or eating, and body scan meditation. Though "mindfulness" derives from contemplation and philosophical traditions, it was developed in a way that individuals can effectively practice it in the absence of such traditions or related vocabulary. To date, a growing body of evidence has demonstrated both physical- and mental-health benefits of practicing mindfulness in various patient conditions, with a particular clinical-oriented focus on reducing stress and anxiety (Grossman et al., 2004), as well as supporting well-being (Allen et al., 2021). Whereas recent attempts have been made to combine mindfulness-based interventions and psychedelics in clinical practice (Payne et al., 2021). This includes utilizing mindfulness practices to both prepare for a non-ordinary and potentially challenging state of consciousness resulting from psychedelics, as well as to enhance psychedelic integration (e.g., by deepening, embodying, and maintaining the novel perspectives and motivation instigated by psychedelic experience).

Internal family systems

IFS is a psychotherapeutic approach based on the non-pathologizing assumption that the human psyche is composed of inner parts that, despite emerging and operating in a congruent direction (that is, the protection of the inner Self), can come into conflict with each other, which might result in dysfunctions and psychopathologies. Morgan (2020) proposed the utilization of the IFS model in working with psychedelic experiences, both before (i.e., preparation), during, as well as after (i.e., integration) their occurrence. Regarding the latter, the work should focus on the client to achieve harmony between his/her parts, which might be facilitated by recognition and acknowledgment of individual inner parts, and engage in the dialog both with and between them (through specific techniques of asking questions to the client or instructing him/her to redirect attention and ask questions to a given part). A range of supporting practices might also be prescribed, such as self-expression by movement or creative work (e.g., drawing), breathwork, or guided meditation considering specific parts. In general, psychedelic integration practice utilizing this approach concerns IFS-parts that were active around the psychedelic experience. For instance, during the psychedelic experience, the client may have gained access to his/her vulnerable part (i.e., the Exile) that needs care and release from, e.g., a sense of exclusion. In this case, a psychedelic integration would be focused on connecting with and unburdening this part of the client.

Process-oriented psychotherapy

According to POP, human experience flows through different senses, or channels, where each sensation is a signal from the unconscious (Mindell, 1985). It might be seen, heard, or felt, as well as be described by movement, relationships with other people, groups, workplace, and institutions (so-called "world channel"). Psychedelic experiences, by definition, involve being exposed to unconscious content, and often lead to client's higher sensitivity to the processes that might potentially unfold in their daily life and through different channels (Pavlovič, 2020). The aim of process-oriented work is to amplify the signal and recreate it in matters of feeling and experiencing it with awareness, so it would provide meaningful insight. This amplification is facilitated by a specific

process-oriented technique of following the manifestations of the unconscious through different channels to extract its full content. But effective and often used techniques here are also role plays. A good example is the empty chair exercise, a technique used also in the Gestalt therapy approach, in which the client becomes a role and interacts with other roles, i.e., characters from a psychedelic experience, dream, or client's life, represented by one or more empty chairs in the room.

Working with traumatic-like symptoms

The intense, confusing, and often overwhelming nature of the psychedelic experience might be very challenging and result in traumatic-like symptoms. By these, we mean symptoms that are similar to those of acute stress disorder (Bryant, 2017). These include hyperarousal, re-experiencing, or dissociation, which often lead to distress or dysfunction (e.g., sleep problems, intrusive thoughts, decreased mood), that are commonly the reason for seeking help in the first place (Aixalà, 2022). Currently, MDMA-assisted psychotherapy is a promising emerging treatment for Post-Traumatic Stress Disorder (Mitchell et al., 2021), but there is no evidence-based intervention to target psychedelics-induced symptoms of trauma. However, due to its similarities with other better known cases of trauma symptomatology (e.g., accident-, assault- or combat-related trauma), it is reasonable to treat a person with trauma originating from a psychedelic experience as we would treat someone who has experienced a different type of traumatic event (e.g., Badour and Feldner, 2013). Thus, we believe that well-established evidence-based interventions, such as cognitive processing (Resick et al., 2016), narrative and prolonged exposure therapy (Mørkved et al., 2014), or Eye Movement Desensitization and Reprocessing (EMDR; Shapiro, 2017), may have a potentially beneficial application. It is also fair to say that, to a certain extent, most psychotherapeutic approaches provide trauma-informed care. Here it should be stressed however, that the use of these approaches and methods requires specific training, as well as that their effectiveness in working with the content or consequences of psychedelic experiences is currently unknown.

Psychodynamic approach

The developmental, psychodynamic perspectives on human personality structure might be particularly useful in understanding and dealing with the client's psychedelic experiences. In fact, it has been hypothesized that the individual dynamics of psychedelic experiences result from the temporary cessation of intrapsychic defense mechanisms (Carhart-Harris et al., 2014; Razvi and Elfrink, 2020), and the psychodynamic perspective itself was used to develop the first conceptualization of psychedelic experiences (Grof, 1976). In general, this perspective views levels of psychic functioning on a psychotic-borderline-neurotic continuum, which can be looked at in terms of personality growth (from vulnerable states into more advanced forms of personality functioning), with level-specific defense mechanisms (McWilliams, 2011). Likewise, the client's main source of preoccupation (safety > autonomy > identity), quality of experienced anxiety (annihilation > separation > fear of losing control), intrapsychic conflict (i.e., separation/individuation) or ego-state (overwhelmed > fighting > participating in therapeutic alliance), may guide our thinking regarding client's personality organization and current mental health condition. In cases where premorbid personality functioning points to a rather lower level of organization and observing ego quality is missing (which in this context can be called psychotic), it may be necessary to pay greater respect for the client's defense mechanisms, as their deconstruction through inadequate interventions or attempts to return to psychedelic experiences could be destabilizing (which these mechanisms guard the psyche against). Similarly, borderline clients dealing with their psychedelic experiences may find themselves more prone to abandonment and constantly negotiating the therapist's trust. Therefore, in such cases establishing a safe therapeutic alliance may take several sessions before integration can focus on the psychedelic experience itself. On the other hand, neurotic clients are more likely to establish a therapeutic alliance and concentrate on the meaning of the psychedelic experience in their life, as they typically display a coherent sense of identity and have a better understanding of their internal states and affects. However, it should be noted that understanding a client's level of personality organization may take time and cannot be assumed based on just one session.

Treating psychedelic experiences as dreams

Given that a psychedelic experience can evoke unconscious and symbolic representations of the psyche, we think it is reasonable to approach these experiences as we would treat a significant dream with which a client has come to us. A famous quote from Holden (1980) states that "If, as Freud said, dreams are the royal road to the unconscious, is it possible that psychedelic drugs are a superhighway to the unconscious." Thus, psychedelic integration could be held in a similar way in which the unconscious material becomes conscious when dreams are interpreted through Jungian analytic or depth psychology (Vedfelt, 2002). Accordingly, one should consider that unconscious material of dreams, and psychedelic experiences alike, might contain not only insight into individual aspects but also into collective data and archetypes that reach beyond individuality and might be common to every human being. In practice, this perspective focuses on interpretations through decoding and amplifying various symbolic and metaphorical events or sensations into conscious, everyday language, thus extracting its potential insights for the client's life. Notably, the analysis may not need to be limited to the psychedelic experience itself but also include the client's recent dreams or other events that may hold symbolic value. The aim of such exploration is to build up a story (narrative) of the experience so that it would be manageable, sensible, and meaningful. In addition, the clients may also be invited to create their own fairy tales or personal myth based on that work. This could be told, written, or drawn, as long as it would serve the clients in their future life.

Sharing circles

To this moment we were focusing on individual, one-to-one processes of psychedelic integration. However, much of what was already said is applicable to the form of group meetings and sharing circles as well. Such forms of integration were practiced before, in the 1960s and 70s, and are gaining popularity today due to the growing interest in using psychedelics (Fadiman, 2011; Trope et al., 2019). In many organized settings (i.e., psychedelic ceremonies, retreats, or Holotropic Breathwork workshops), sharing circles are formed right after a psychedelic session and/or on the following day, when they are usually combined with participants sharing their intentions before the psychedelic experience, which serves also to established supporting atmosphere between them (i.e., Grof, 2014). Such an atmosphere is

common in many forms of group therapy as well, and it is known to be one of the main therapeutic mechanisms of such interventions (Cox et al., 2008). However, integration-focused sharing circles can also be organized in the form of recurring meetings focused on sharing and analyzing past psychedelic experiences. In addition to verbal expression, drawing (e.g., mandala) is often recommended during such circles, which is intended to metaphorically and symbolically reflect the experience and thus serve its integration (i.e., Grof, 2014). Reflections on the experience might be helpful as the everyday language is usually not suitable or enough to provide a satisfying description of one's experience to others. The opportunity to name and understand the lived experience, receive support and feedback from different perspectives, as well as to engage in spontaneous interpersonal interactions in this regard, can be invaluable in managing it so as to minimize its harm and maximize its potential benefits.

After the integration

It is often difficult to draw a clear line between psychedelic integration and general psychotherapeutic practice. This difficulty is mostly due to the fact that psychedelics tend to reveal or confront clients with content concerning their biography, patterns of behavior, fears, choices, and life situations, which at the end of the day are not specific only to psychedelics. Nonetheless, we believe that it might be in the client's best interest to be aware of and reflect on the shifting content of sessions, as it most probably occurs at some point. And, we propose that this shift happens when the session's content no longer directly concerns the scope of the very psychedelic experience(s), but either deeper or more general client issues. This is not to say that our contact with the client should be discontinued at such a point, as the psychedelic content will probably come back and forth if the meeting becomes long-term. Rather, the client should be informed about our impression of changing the nature of sessions so that he/she might be involved in the decision to continue work (perhaps with different goals or on different terms). This information will also help to avoid confusing the client with psychedelic integration or, for instance, "typical" psychotherapy in which he/she participates.

When it comes to ending such collaboration, however, be it after a successful outcome or for another reason, two general manners should be applied, regardless of the psychotherapeutic approach that was used. First, sum up the benefits and challenges that happened along the way so far, and look upon their constructive effects. This summary serves as, nomen omen, integration of the work that was done. Second, make sure that the client knows what following actions he/she should take in order to sustain well-being, as well as that he/she has contact with a person or place to seek additional support or other help that might be needed in the future due to his/her particular condition.

In a less formal manner, as it is often useful for integrating such processes by giving them an overall title or coining a metaphor, the same might be done in order to close the process of psychedelic integration. To sum up, with our own metaphor, no specialist will integrate someone's psychedelic experience, but a supportive and informed one might help the client to harvest the fruit that has grown on the trees of their psychedelic experience so that they can take them home, to their daily lives.

Limitations and recommendations for future guidelines development

We believe that our approach to attempting the development of psychedelic integration guidelines for mental health specialists has proved effective and might inform future attempts to either further expand on these or develop new guidelines in this regard. Therefore, here we identify and discuss both strengths and limitations of the approach we adopted.

To begin with, among strengths, we can note the use of a relatively complex and collaborative approach to guideline development. Specifically, our approach included developing the portions of the guidelines in the subgroups drawn based on experience in particular areas, reaching a consensus of the full team on the content of the guidelines, and collating thus working out the initial draft of the guidelines with the current state of knowledge on psychedelic integration based on the literature review, as well as undergoing a peer-review process of scholarly journal publication. However, future developments of such guidelines might benefit from adopting other procedures that proved to be effective in decision-making or guidelines development (i.e., expert panels, Delphi technique, or multi-criteria decision analysis).

Further, we believe that the collaboration of a diverse team of practitioners and researchers working with clients having psychedelic experiences in different settings was a strength of our approach. However, the backgrounds, expertise, and work experience of our team certainly influenced the content of the final guidelines (e.g., the range of selected psychotherapeutic approaches and methods). Thus, future attempts to develop guidelines for psychedelic integration practice would benefit from extending the scope of approaches and methods recommended for implementation in psychedelic integration practice. This might include, in particular, somatic-based approaches, systemic approaches, specific contemplative or imaginative approaches, approaches utilizing new technologies (e.g., virtual reality), as well as cognitive-behavioral approaches. Though, examples of the latter were included in our guidelines due to relatively extensive literature in this regard. Moreover, our team could also potentially benefit from including individuals that are experienced in training mental health specialists, as well as individuals who were previously involved in the development of other guidelines for this population.

We also want to acknowledge our impression that psychedelic integration is a relatively young field undergoing dynamic development, which makes it very difficult, if possible, to provide a truly comprehensive list of therapeutic approaches and methods that might be potentially useful in this regard. Importantly, while most of the currently available models and methods of psychedelic integration are based on long-standing practices of indigenous cultures or on relatively well-elaborated and theory-driven psychotherapeutic approaches (Bathje et al., 2022; Yaden et al., 2022b), this moment none of currently existing models (or, in fact, methods) of psychedelic integration is supported empirically. This is due to a lack of studies focused on testing the efficacy of psychedelic integration models/methods. Thus, we encourage future research to be conducted with the aim of examining and evaluating psychedelic integration practice, which would also serve future developments of guidelines in this regard.

Conclusion

The need for psychedelic integration is compounded by the growing interest in and prevalence of psychedelic use in various contexts, as well as the lack of preparation of a cadre of mental health professionals to provide support in this area. The purpose of this paper was to describe our attempt to develop theoretical and practical guidelines on psychedelic integration for mental health specialists who may meet clients in need of such support. This concerns both the need of minimizing adverse consequences and maximizing potential benefits associated with psychedelic experiences. Presented guidelines were developed based on a series of roundtable discussions among an international group of psychotherapists, psychiatrists, and researchers working in the field, as well as on a review of the current scientific literature in this regard. Although psychedelics have been used by humans for millennia, and then became the subject of Western science more than a century ago, the field of psychedelic integration has only recently gained its dynamic momentum. We hope that this paper will play a valuable role in providing a clinician-friendly synthesis of current knowledge considering psychedelic integration, in order to help navigate both the promises and dangers of the "renaissance" and ongoing "mainstreamization" of these mind-manifesting substances.

Author contributions

JG, ML, CK, and FT participated in initial developments of the guidelines during dedicated round-table discussions. JG conducted the review of current literature. JG and FT incorporated literature review results into the guidelines and prepared the manuscript. All authors contributed to the article and approved the submitted version.

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Conflict of interest

FT declares to have shares in "Psyon s.r.o" and is involved in Compass Pathways trials with psilocybin and MAPS clinical trial with MDMA outside the submitted work.

The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

Aday, J. S., Mitzkovitz, C. M., Bloesch, E. K., Davoli, C. C., and Davis, A. K. (2020). Long-term effects of psychedelic drugs: a systematic review. *Neurosci. Biobehav. Rev.* 113, 179–189. doi: 10.1016/j.neubiorev.2020.03.017

Aixalà, B. M. (2022). *Psychedelic integration: Psychotherapy for non-ordinary states of consciousness*. United States: Synergetic Press

Allen, J. G., Romate, J., and Rajkumar, E. (2021). Mindfulness-based positive psychology interventions: a systematic review. *BMC Psychol.* 9, 1–18. doi: 10.1186/s40359-021-00618-2

Andersen, K. A., Carhart-Harris, R., Nutt, D. J., and Erritzoe, D. (2021). Therapeutic effects of classic serotonergic psychedelics: a systematic review of modern-era clinical studies. *Acta Psychiatr. Scand.* 143, 101–118. doi: 10.1111/acps.13249

Badour, C. L., and Feldner, M. T. (2013). Trauma-related reactivity and regulation of emotion: associations with posttraumatic stress symptoms. *J. Behav. Ther. Exp. Psychiatry* 44, 69–76. doi: 10.1016/j.jbtep.2012.07.007

Baer, R. A. (2015). *Mindfulness-based treatment approaches: clinician's guide to evidence base and applications*. Amsterdam, Netherlands: Elsevier.

Barrett, F. S., Johnson, M. W., and Griffiths, R. R. (2017). Neuroticism is associated with challenging experiences with psilocybin mushrooms. *Personal. Individ. Differ.* 117, 155–160. doi: 10.1016/j.paid.2017.06.004

Bathje, G. J., Majeski, E., and Kudowor, M. (2022). Psychedelic integration: an analysis of the concept and its practice. *Front. Psychol.* 13:824077. doi: 10.3389/fpsyg.2022.824077

Bourzat, F., and Hunter, K. (2019). *Consciousness medicine: indigenous wisdom, entheogens, and expanded. States of consciousness for healing healing and growth*. Berkeley, CA: North Atlantic Books.

Bouso, J. C., Palhano-Fontes, F., Rodríguez-Fornells, A., Ribeiro, S., Sanches, R., Crippa, J. A. S., et al. (2015). Long-term use of psychedelic drugs is associated with differences in brain structure and personality in humans. *Eur. Neuropsychopharmacol.* 25, 483–492. doi: 10.1016/j.euroneuro.2015.01.008

Brennan, W., and Belser, A. B. (2022). Models of psychedelic-assisted psychotherapy: a contemporary assessment and an introduction to EMBARK, a Transdiagnostic, trans-drug model. *Front. Psychol.* 13:866018. doi: 10.3389/fpsyg.2022.866018

Brown, K. W., and Ryan, R. M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *J. Pers. Soc. Psychol.* 84, 822–848. doi: 10.1037/0022-3514.84.4.822

Bryant, R. A. (2017). Acute stress disorder. *Curr. Opin. Psychol.* 14, 127–131. doi: 10.1016/j.copsyc.2017.01.005

Buller, K., and Moore, J. (2019). *Integration workbook: Planting seeds for growth and change*. Scotts Valley, CA: CreateSpace Independent Publishing Platform.

Carbonaro, T. M., Bradstreet, M. P., Barrett, F. S., MacLean, K. A., Jesse, R., Johnson, M. W., et al. (2016). Survey study of challenging experiences after ingesting psilocybin mushrooms: acute and enduring positive and negative consequences. *J. Psychopharmacol.* 30, 1268–1278. doi: 10.1177/0269881116662634

Carhart-Harris, R. L., and Friston, K. (2019). REBUS and the anarchic brain: toward a unified model of the brain action of psychedelics. *Pharmacol. Rev.* 71, 316–344. doi: 10.1124/pr.118.017160

Carhart-Harris, R. L., Leech, R., Erritzoe, D., Williams, T. M., Stone, J. M., Evans, J., et al. (2013). Functional connectivity measures after psilocybin inform a novel hypothesis of early psychosis. *Schizophr. Bull.* 39, 1343–1351. doi: 10.1093/schbul/sbs117

Carhart-Harris, R. L., Leech, R., Hellyer, P. J., Shanahan, M., Feilding, A., Tagliazucchi, E., et al. (2014). The entropic brain: a theory of conscious states informed by neuroimaging research with psychedelic drugs. *Front. Hum. Neurosci.* 8:20. doi: 10.3389/fnhum.2014.00020

Carhart-Harris, R. L., Roseman, L., Haijen, E., Erritzoe, D., Watts, R., Branchi, I., et al. (2018). Psychedelics and the essential importance of context. *J. Psychopharmacol.* 32, 725–731. doi: 10.1177/0269881118754710

Carmo Carvalho, M., Pinto de Sousa, M., Frango, P., Dias, P., Carvalho, J., Rodrigues, M., et al. (2014). Crisis intervention related to the use of psychoactive substances in recreational settings-evaluating the Kosmicare project at boom festival. *Curr. Drug Abuse Rev.* 7, 81–100. doi: 10.2174/1874473708666150107115515

Coden, K. E. (2017). *After the ceremony ends: A companion guide to help you integrate visionary plant medicine experiences*. Baltimore, Maryland: Shine Mojo, LLC.

Cohen, I. (2017). *Re-turning to wholeness: The psycho-spiritual integration process of Ayahuasca ceremonies in Western participants from a Jungian Perspctive*. San Francisco, CA: California Institute of Integral Studies.

Cox, P. D., Vinogradov, S., and Yalom, I. D. (2008). "Group therapy" in *The American Psychiatric Publishing textbook of psychiatry*. eds. R. E. Hales, S. C. Yudofsky and G. O. Gabbard (United States: American Psychiatric Publishing, Inc.), 1329–1373.

Dakic, V., Minardi Nascimento, J., Costa Sartore, R., Maciel, R. D. M., de Araujo, D. B., Ribeiro, S., et al. (2017). Short term changes in the proteome of human cerebral organoids induced by 5-MeO-DMT. *Sci. Rep.* 7, 1–13. doi: 10.1038/s41598-017-12779-5

Davis, A. K., Barrett, F. S., and Griffiths, R. R. (2020). Psychological flexibility mediates the relations between acute psychedelic effects and subjective decreases in depression and anxiety. *J. Contextual Behav. Sci.* 15, 39–45. doi: 10.1016/j.jcbs.2019.11.004

Earleywine, M., Low, F., Lau, C., and De Leo, J. (2022). Integration in psychedelic-assisted treatments: recurring themes in current providers' definitions, challenges, and concerns. *J. Humanist. Psychol.* 2022:858. doi: 10.1177/00221678221085800

Fadiman, J. (2011). *The psychedelic explorer's guide: Safe, therapeutic, and sacred journeys*. Noida: Simon and Schuster.

Gandy, S., Forstmann, M., Carhart-Harris, R. L., Timmermann, C., Luke, D., and Watts, R. (2020). The potential synergistic effects between psychedelic administration and nature contact for the improvement of mental health. *Health Psychol. Open* 7:978123. doi: 10.1177/2055102920978123

Garcia-Romeu, A., and Richards, W. A. (2018). Current perspectives on psychedelic therapy: use of serotonergic hallucinogens in clinical interventions. *Int. Rev. Psychiatry* 30, 291–316. doi: 10.1080/09540261.2018.1486289

Gorman, I., Nielson, E. M., Molinar, A., Cassidy, K., and Sabbagh, J. (2021). Psychedelic harm reduction and integration: a transtheoretical model for clinical practice. *Front. Psychol.* 12:645246. doi: 10.3389/fpsyg.2021.645246

Griffiths, R. R., Richards, W. A., McCann, U., and Jesse, R. (2006). Psilocybin can occasion mystical-type experiences having substantial and sustained personal meaning and spiritual significance. *Psychopharmacology* 187, 268–283. doi: 10.1007/s00213-006-0457-5

Grof, S. (1976). *Realms of the human unconsciousness: observations from LSD research Dutton*. New York: Viking Press.

Grof, S. (2014). Holotropic breathwork: a new experiential method of psychotherapy and self-exploration. *J. Transpers. Res.* 6, 7–24.

Grossman, P., Niemann, L., Schmidt, S., and Walach, H. (2004). Mindfulness-based stress reduction and health benefits: a meta-analysis. *J. Psychosom. Res.* 57, 35–43. doi: 10.1016/S0022-3999(03)00573-7

Guss, J., Krause, R., and Sloshower, J. (2020). *The Yale manual for psilocybin-assisted therapy of depression (using acceptance and commitment therapy as a therapeutic frame)*. PsyArXiv.

Halpern, J. H., Lerner, A. G., and Passie, T. (2016). A review of hallucinogen persisting perception disorder (HPPD) and an exploratory study of subjects claiming symptoms of HPPD. *Behav. Neurobiol. Psychedelic Drugs* 36, 333–360. doi: 10.1007/7854_2016_457

Hendricks, P. S., Clark, C. B., Johnson, M. W., Fontaine, K. R., and Cropsey, K. L. (2014). Hallucinogen use predicts reduced recidivism among substance-involved offenders under community corrections supervision. *J. Psychopharmacol.* 28, 62–66. doi: 10.1177/0269881113513851

Hendricks, P. S., Thorne, C. B., Clark, C. B., Coombs, D. W., and Johnson, M. W. (2015). Classic psychedelic use is associated with reduced psychological distress and suicidality in the United States adult population. *J. Psychopharmacol.* 29, 280–288. doi: 10.1177/0269881114565653

Hendy, K. (2022). What can the chemical hold?: the politics of efficacy in the psychedelic renaissance. *Cult. Med. Psychiatry* 46, 322–343. doi: 10.1007/s11013-021-09708-7

Holden, C. (1980). Arguments heard for psychedelics probe. *Science* 209, 256–257. doi: 10.1126/science.7384800

Inserra, A., De Gregorio, D., and Gobbi, G. (2021). Psychedelics in psychiatry: neuroplastic, immunomodulatory, and neurotransmitter mechanisms. *Pharmacol. Rev.* 73, 202–277. doi: 10.1124/pharmrev.120.000056

Johnson, M. W., Richards, W. A., and Griffiths, R. R. (2008). Human hallucinogen research: guidelines for safety. *J. Psychopharmacol.* 22, 603–620. doi: 10.1177/0269881108093587

Jones, K. A., Srivastava, D. P., Allen, J. A., Strachan, R. T., Roth, B. L., and Penzes, P. (2009). Rapid modulation of spine morphology by the 5-HT2A serotonin receptor through kalirin-7 signaling. *Proc. Natl. Acad. Sci.* 106, 19575–19580. doi: 10.1073/pnas.0905884106

Killion, B., Hai, A. H., Alsolami, A., Vaughn, M. G., Oh, P. S., and Salas-Wright, C. P. (2021). LSD use in the United States: trends, correlates, and a typology of us. *Drug Alcohol Depend.* 223:108715. doi: 10.1016/j.drugalcdep.2021.108715

Lutkajtis, A., and Evans, J. (2023). Psychedelic integration challenges: participant experiences after a psilocybin truffle retreat in the Netherlands. *J. Psychedelic Stud.* 6, 211–221. doi: 10.1556/2054.2022.00232

Ly, C., Greb, A. C., Cameron, L. P., Wong, J. M., Barragan, E. V., Wilson, P. C., et al. (2018). Psychedelics promote structural and functional neural plasticity. *Cell Rep.* 23, 3170–3182. doi: 10.1016/j.celrep.2018.05.022

Majić, T., Schmidt, T. T., and Gallinat, J. (2015). Peak experiences and the afterglow phenomenon: when and how do therapeutic effects of hallucinogens depend on psychedelic experiences? *J. Psychopharmacol.* 29, 241–253. doi: 10.1177/0269881114568040

McWilliams, N. (2011). The psychodynamic diagnostic manual: an effort to compensate for the limitations of descriptive psychiatric diagnosis. *J. Pers. Assess.* 93, 112–122. doi: 10.1080/00223891.2011.542709

Millière, R. (2017). Looking for the self: phenomenology, neurophysiology and philosophical significance of drug-induced ego dissolution. *Front. Hum. Neurosci.* 11:245. doi: 10.3389/fnhum.2017.00245

Mindell, A. (1985). *Working with the dreaming body*. London: Routledge and Kegan Paul.

Mindell, A. S. (1991). *Moon in the water: The metaskills of process-oriented psychology as seen through the psychotherapeutic work of Arnold Mindell*. New Delhi: The Union Institute.

Mitchell, J. M., Bogenschutz, M., Lilienstein, A., Harrison, C., Kleiman, S., Parker-Guilbert, K., et al. (2021). MDMA-assisted therapy for severe PTSD: a randomized, double-blind, placebo-controlled phase 3 study. *Nat. Med.* 27, 1025–1033. doi: 10.1038/s41591-021-01336-3

Morgan, N. L. (2020). Integrating psychedelic experiences utilizing the internal family systems therapeutic model. *Int. J. Soc. Sci. Manage. Rev* 3, 257–264. doi: 10.37602/IJSSMR.2020.3417

Mørkved, N., Hartmann, K., Aarsheim, L. M., Holen, D., Milde, A. M., Bomyea, J., et al. (2014). A comparison of narrative exposure therapy and prolonged exposure therapy for PTSD. *Clin. Psychol. Rev.* 34, 453–467. doi: 10.1016/j.cpr.2014.06.005

Nichols, D. E. (2016). Psychedelics. *Pharmacol. Rev.* 68, 264–355. doi: 10.1124/pr.115.011478

Nielson, E. M., and Guss, J. (2018). The influence of therapists' first-hand experience with psychedelics on psychedelic-assisted psychotherapy research and therapist training. *J. Psychedelic Stud.* 2, 64–73. doi: 10.1556/2054.2018.009

Noorani, T., Bedi, G., and Muthukumaraswamy, S. (2023). Dark loops: contagion effects, consistency and chemosocial matrices in psychedelic-assisted therapy trials. *Psychol. Med.* 2023, 1–10. doi: 10.1017/S0033291723001289

Olson, J. A., Suissa-Rocheleau, L., Lifshitz, M., Raz, A., and Veissière, S. P. (2020). Tripping on nothing: placebo psychedelics and contextual factors. *Psychopharmacology* 237, 1371–1382. doi: 10.1007/s00213-020-05464-5

Ona, G. (2018). Inside bad trips: exploring extra-pharmacological factors. *J. Psychedelic Stud.* 2, 53–60. doi: 10.1556/2054.2018.001

Ortigo, K. (2021). *Beyond the narrow life: a guide for psychedelic integration and existential exploration*. Santa Fe, NM: Synergetic Press.

Osmond, H. (1957). A review of the clinical effects of psychotomimetic agents. *Ann. N. Y. Acad. Sci.* 66, 418–434. doi: 10.1111/j.1749-6632.1957.tb40738.x

Passie, T., Guss, J., and Krähenmann, R. (2022). Lower-dose psycholytic therapy–a neglected approach. *Front. Psych.* 13. doi: 10.3389/fpsyt.2022.1020505

Pavlovič, I. (2020). Integration of altered states of consciousness according to the process oriented psychology. *Soc Health Horiz* 7:30.

Payne, J. E., Chambers, R., and Liknaitzky, P. (2021). Combining psychedelic and mindfulness interventions: synergies to inform clinical practice. *ACS Pharmacol. Transl. Sci.* 4, 416–423. doi: 10.1021/acsptsci.1c00034

Phelps, J. (2017). Developing guidelines and competencies for the training of psychedelic therapists. *J. Humanist. Psychol.* 57, 450–487. doi: 10.1177/0022167817711304

Pilecki, B., Luoma, J. B., Bathje, G. J., Rhea, J., and Narloch, V. F. (2021). Ethical and legal issues in psychedelic harm reduction and integration therapy. *Harm Reduct. J.* 18, 1–14. doi: 10.1186/s12954-021-00489-1

Priebe, S., Omer, S., Giacco, D., and Slade, M. (2014). Resource-oriented therapeutic models in psychiatry: conceptual review. *Br. J. Psychiatry* 204, 256–261. doi: 10.1192/bjp.bp.113.135038

Razvi, S., and Elfrink, S. (2020). The PSIP model. An introduction to a novel method of therapy: psychedelic somatic interactional psychotherapy. *J. Psychedelic Psychiatry* 2, 1–24.

Resick, P. A., Monson, C. M., and Chard, K. M. (2016). *Cognitive processing therapy for PTSD: A comprehensive manual*. New York: Guilford Publications.

Richards, W. (2015). *Sacred knowledge*. New York: Columbia University Press.

Roseman, L., Ron, Y., Saca, A., Ginsberg, N., Luan, L., Karkabi, N., et al. (2021). Relational processes in ayahuasca groups of Palestinians and Israelis. *Front. Pharmacol.* 12:607529. doi: 10.3389/fphar.2021.607529

Rucker, J. J., Iliff, J., and Nutt, D. J. (2018). Psychiatry and the psychedelic drugs. Past, present and future. *Neuropharmacology* 142, 200–218. doi: 10.1016/j.neuropharm.2017.12.040

Schlag, A. K., Aday, J., Salam, I., Neill, J. C., and Nutt, D. J. (2022). Adverse effects of psychedelics: from anecdotes and misinformation to systematic science. *J. Psychopharmacol.* 36, 258–272. doi: 10.1177/02698811211069100

Sessa, B. (2012). *The psychedelic renaissance: Reassessing the role of psychedelic drugs in 21st century psychiatry and society*. London: Muswell Hill Press.

Sexton, J. D., Crawford, M. S., Sweat, N. W., Varley, A., Green, E. E., and Hendricks, P. S. (2019). Prevalence and epidemiological associates of novel psychedelic use in the United States adult population. *J. Psychopharmacol.* 33, 1058–1067. doi: 10.1177/0269881119827796

Shapiro, F. (2017). *Eye movement desensitization and reprocessing (EMDR) therapy: basic principles, protocols, and procedures*. New York: Guilford Publications.

Sloshower, J., Guss, J., Krause, R., Wallace, R. M., Williams, M. T., Reed, S., et al. (2020). Psilocybin-assisted therapy of major depressive disorder using acceptance and commitment therapy as a therapeutic frame. *J. Contextual Behav. Sci.* 15, 12–19. doi: 10.1016/j.jcbs.2019.11.002

Swanson, L. R. (2018). Unifying theories of psychedelic drug effects. *Front. Pharmacol.* 9:172. doi: 10.3389/fphar.2018.00172

Szabo, A., Kovacs, A., Riba, J., Djurovic, S., Rajnavolgyi, E., and Frecska, E. (2016). The endogenous hallucinogen and trace amine N, N-dimethyltryptamine (DMT) displays potent protective effects against hypoxia via sigma-1 receptor activation in human primary iPSC-derived cortical neurons and microglia-like immune cells. *Front. Neurosci.* 10:423. doi: 10.3389/fnins.2016.00423

Tatarsky, A. (2003). Harm reduction psychotherapy: extending the reach of traditional substance use treatment. *J. Subst. Abus. Treat.* 25, 249–256. doi: 10.1016/S0740-5472(03)00085-0

Trope, A., Anderson, B. T., Hooker, A. R., Glick, G., Stauffer, C., and Woolley, J. D. (2019). Psychedelic-assisted group therapy: a systematic review. *J. Psychoactive Drugs* 51, 174–188. doi: 10.1080/02791072.2019.1593559

Tylš, F., Páleníček, T., and Horáček, J. (2014). Psilocybin–summary of knowledge and new perspectives. *Eur. Neuropsychopharmacol.* 24, 342–356. doi: 10.1016/j.euroneuro.2013.12.006

Van Elk, M., and Yaden, D. B. (2022). Pharmacological, neural, and psychological mechanisms underlying psychedelics: a critical review. *Neurosci. Biobehav. Rev.* 2022:104793. doi: 10.1016/j.neubiorev.2022.104793

Vedfelt, O. (2002). *The dimensions of dreams: The nature, function, and interpretation of dreams*. London: Jessica Kingsley Publishers.

Watts, R., and Luoma, J. B. (2020). The use of the psychological flexibility model to support psychedelic assisted therapy. *J. Contextual Behav. Sci.* 15, 92–102. doi: 10.1016/j.jcbs.2019.12.004

Westrum, R., and Dufrechou, J. (2019). *The psychedelics integration handbook*. United States: Westrum and Derecho

Wolfson, E. (2023). Psychedelic-supportive psychotherapy: a psychotherapeutic model for, before and beyond the medicine experience. *J. Psychedelic Stud.* 6, 191–202. doi: 10.1556/2054.2022.00192

Yaden, D. B., Earp, D., Graziosi, M., Friedman-Wheeler, D., Luoma, J. B., and Johnson, M. W. (2022b). Psychedelics and psychotherapy: cognitive-behavioral approaches as default. *Front. Psychol.* 13:1604. doi: 10.3389/fpsyg.2022.873279

Yaden, D. B., Le Nguyen, K. D., Kern, M. L., Wintering, N. A., Eichstaedt, J. C., Schwartz, H. A., et al. (2017). The noetic quality: a multimethod exploratory study. *Psychol. Conscious. Theory Res. Pract.* 4, 54–62. doi: 10.1037/cns0000098

Yaden, D. B., Potash, J. B., and Griffiths, R. R. (2022a). Preparing for the bursting of the psychedelic hype bubble. *JAMA Psychiatry* 79, 943–944. doi: 10.1001/jamapsychiatry.2022.2546

Zinberg, N. E. (1984). *Drug, set and setting: the basis for controlled heroin use*. New Haven, CT: Yale University Press.

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Looking for Ted: black trips, "psychedelic" humanism, and silence

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I look for Ted. A black existence in an archive that has failed him. However, I read not only for failure, but I read for Ted. To meet him, even in all this failure, I wonder if I will fail him. This article focuses on blackness within the psychedelic archive, particularly Grof and Halifax's (1978) *The Human Encounter with Death*. Published in 1977, this book was a product of Grof's research in the early 1970s at Spring Grove Clinic. His work was centered on the emergent scientific inquiry into the effects of psychedelics on "human" test subjects. Grof and Halifax (1978) sought to understand how psychedelics could overcome terminally ill patients' anxiety regarding death. The cultural production of death became critical to their argument, while little cultural scrutiny was given to race, ability, or class. However, the historicity and cultural contextualization of death ran central to their alternative model of engaging what mortality was through psychedelics. My article thus sits with the cultural specificity afforded to psychedelics in conversation with death and imagines the limitations of said specificity when blackness and Otherness are brought into the conversation. I ask the question, "how may we read subjectivity within the psychedelic archive when it comes to a black psychedelic subject?" To answer this question, I examine the implicit anthropological models that ground patient biographies and dissect what I term the "psychedelic humanist model." Furthermore, in mapping the ways that Grof and Halifax (1978) narrativize Ted, I ponder how an archival engagement with Ted might push against the objectifying trends of psychedelic science. Finally, I piece together what my search for Ted sought to recuperate, but, instead, I found the destabilizing residue of the black trip within the psychedelic archive.

To understand the subject of the text, we must first establish the framework within which the text operates. In particular, what do Grof and Halifax (1978) mean by the titular "human encounter with death"? Who is the human we are reading about? In posing such questions, I take Halifax's training as an anthropologist as a critical point of departure: how is a subject historically rendered in anthropology? Who, then, is afforded this human subjectivity? How does anthropology valorize these normative models through its anthropological subject? As Wynter (2003) notes, the very crux of the political and scientific emergence of Man (which as a term stands for the normative mode of being human) was predicated on the concept's construction by scholars "including centrally those of anthropology" who would force "non-Europeans" to be the "physical referent" (in the episteme of Man) of the "irrational or subrational Human Other" (266). This Man would evolve through what Wynter (2003) calls the "Darwinian Leap," described in purely secular terms. In these "biologized terms, it was to be the peoples of Black African descent who would be constructed as the ultimate referent of the "racially inferior" Human Other" to Man (266). This is to say that the normative script that Halifax's anthropological methods are working through is sutured to a disciplinary history that can only represent this normative model of humans unless they grapple with and deconstruct the racialized history of humanity as it is normatively known. Halifax and Grof fail to do so, instead abiding by the unquestioned script of Man. Thus, the desired anthropological subject is one that can approach the normative discourse of humanity.

In order to have their subjects occupy this normative humanity, Grof and Halifax's (1978) study neglected elements of blackness and Otherness that are inseparable from their anthropological subject. As a test subject, Ted, then, is afforded his humanity (from which he is normatively excluded) on the terms that a psychedelic experience grants him entry into the position. Thus, the washing away of blackness and Otherness is important to their study, for it pieces together their universalist model as the humanity of Ted seemingly emerges from psychedelic use. This is to say, a new universal model of thought comes into being once blackness and similarly Otherized positions are seemingly erased from the ontological model. We can see this in the way that Ted is "cured" of his Otherness and, through this "cure," shifts into the cured position of the psychedelic subject. However, the architecture of this racially sanitized and seemingly curative subjectivity is built upon a shaky foundation of a universalizable engagement with death.

This desire to undo the normative, empirical prescriptions of death is hinged on the fabrication of our current empirical mappings of death. For Grof and Halifax (1978), death is a problem because of the way it is normatively presumed to be an endpoint of the state of being in the West. This illuminates why their reading is interested in "compar[ing] the situation of a person facing death in contemporary Western civilization with that of individuals in ancient cultures or from preindustrial countries… [since m]ost non-Western cultures have religious and philosophical systems, cosmologies, ritual practices, and certain elements of social organization that make it easier for their members to accept and experience death" (2). Though an arguably reductionary comparison, they seek to mobilize disparate cultural definitions of death to challenge the normative prescription of death in the West. This, according to Grof and Halifax (1978), would aid in overcoming the anxiety around death, which is arguably a product of Western empiricism that offers no answer to what death is. This gap then leaves their work as a means of rethinking what death is through non-normative means: psychedelics. "Psychedelic drugs," they maintain, "have made it possible to develop a new understanding of the symbolic death-rebirth process that occurs in shamanic initiation, rites of passage, temple mysteries, and some schizophrenia episodes. Deeper phenomenological analysis shows that the extended map of the human unconscious derived from LSD research is indeed applicable to all these situations" (Grof, p. 175). However, in a tenuous line, Grof and Halifax (1978) are theorizing that psychedelic science might provide the empirical foundation for a cosmology beyond our normative empiricist life-death order. In other words, death is not the end but merely an entryway into another way of being human—a seemingly better way due to its curative qualities. Yet, their work suggests that these "ancient" claims must be "reformulated in modern terms" through the empiricism of phenomenological analysis of psychedelic experiences (175).

Thus, the terminally ill patient becomes the psychedelic subject that will (re)map these potential cosmologies that speak toward a hereafter. Importantly, this mapping process also appears to redefine the concept of the human, as observed in Grof and Halifax's (1978) rigorous contestation of the purely secular model of Man that defines the present human within their work. Instead, they turn toward empiricism (or, better termed, reason)[1] yet yearn to sit with the spiritual as well, hence their common collapsing of "non-normative spiritual experiments" by patients into Buddhist or Hindu readings (67, 79, 83, 93, 101). Though this common practice in their work did not limit their test subjects to a particularly Buddhist or Hindu narrative, it did foreclose their non-normative spiritual explorations—as seemingly arrived at through psychedelic experiences—entirely into Grof and Halifax's (1978) "new" humanism. In effect, this "new" human model they yearned for was a reasoned yet spiritual model of the human—a psychedelic humanism. A movement of the human away from the normative precepts of contemporary Western, purely materialist empiricism toward an apparently unstable humanism that dared to accept not just a material way of being but also a spiritual way of being human, which became accessible through psychedelic experiences.

For all its seeming opposition to normative Western narratives, this model essentially replicates the secular-religious framework of Man that underpins liberal humanism. As Wynter (2003) would describe it, this is a "hybrid religio-secular" (277) conception of Man, whose "choice [was] that of either growing downwards into the lower natures of brutes or responding to the Creator's call to grow "upward" to "higher" and "divine" natures" (287). Though not an exact model, the similar model speaks to psychedelic humanism's curative yearning for a metaphysical frontier found through the material plane of being. This is to say, psychedelic humanism reflects the Wynterian "hybridly religio-secular" in its use of psychedelic subjects to map out a spiritual being while simultaneously instrumentalizing the material plane as a tool for accessing this spiritual elsewhere. This elsewhere becomes central to Grof and Halifax's (1978) project, for this is where marginalized subjects (particularly disabled patients) serve their use-value for the benefit of science, especially Ted. Thus, their apparently human condition afforded through psychedelic use continues the practice of the Other, becoming the defining lack for the human of the text. Their entry into "humanity" is a mere ploy to map out the limits of the psychedelic experience and thus prove that psychedelics can be an empirically viable cure for anxiety around death.

With this humanist-defining mechanism in place, we must understand the archival position that this research occupies, for it speaks toward a genealogical necessity in the research of psychedelic science. I must acknowledge that Grof and Halifax's (1978) work is not at the forefront of psychedelic science and its present discourse. Nevertheless, the very discipline, as it is known today, is built off of the research done at Spring Grove Clinic, just as it is built off the backs of so many other psychedelic science institutions and projects. In their discussion about the Spring Grove Clinic, Yensen and Dryer (1992) argue that psychedelic scientists "must use the insights available from past efforts in this culture and others to develop" contemporary research efforts (21). The research at Spring Grove Clinic's cultural influence carries sway since Rick

1 For a more thorough engagement with antiblackness, empiricism, and reason, please see Bruce's (2020) *How to Go Mad Without Losing Your Mind: Madness and Black Radical Creativity*. Bruce (2020) maps out the rampant epistemic violence that empiricist and reasoned epistemologies sustain, especially through their intentioned exclusion of black and otherized existences (p. 4).

Doblin was trained and influenced by Grof (Endwell Project, 2021). Notably, the Multidisciplinary Association of Psychedelic Studies (MAPS), where Doblin is the executive director and its founder, doled out $12 million in the 2019–2020 fiscal year for psychedelic research (Christiansen et al., 2020). However, this is small compared to the companies investing hundreds of millions into the research and development of psychedelic drugs (Psychedelic Alpha, 2022). MAPS has been a cultural attaché for psychedelic research and therapist training. In thinking through these terms, it is critical to view the work done in *The Human Encounter with Death* not in a vacuum but as a lived cultural artifact imbricated in the ongoing discourse of psychedelic science/therapy. This can be easily noticed in contemporary studies that have inherited the same central questions on the influence psychedelic experiences can have on anxiety toward death that Grof and Halifax (1978) originally focused on.[2] Moreton et al. (2019) even acknowledge a direct line as they state how their work "echoes the claims of many early psychedelic researchers such as Pahnke" (28). Pahnke et al. (1970) directed the Spring Grove Clinic from 1967 to 1971 and worked alongside Grof on studies related to anxiety toward death.[3] Subsequently, while Grof and Halifax's (1978) text is not contemporary psychedelic science, it speaks to the discursive focus of a particularized time that continues to influence the field, and it manages to explicitly fold blackness (through the figure of Ted) into the complex conversation of psychedelics. Thus, in acknowledging the psychedelic archive, we are not viewing these texts as the end all be all but rather as emergent conversations that establish and set foundational discursive norms. As such, the archive provides us a mode of thinking with these emergent discourses without acting as if they came out of thin air. Moreover, we are provided the space to think with particular ruptures and movements that give rise to approaches or the lack of approaches that have been inherited over time.

With this archival acknowledgment in mind, I turn to Ted to examine his influence on our psychedelic conversation. What we come to find is that Ted occupies a particularized role that "functions to index the limit of science" due to his "blackness" (Warren, 2018, p. 110–111). According to Warren (2018), it is through nothingness that science can even function, but it is by avoiding/overcoming nothingness (thus blackness) that science fundamentally works (110). As the very "function of black(ness) is to give form to a terrifying formlessness (nothing)" (5), the very idea of nothing within our epistemic structure, as organized through humanism, requires a lacking position to structure what it means to be and who is afforded being. Arguably, Warren's (2018) nothing is the space of the Other that Wynter (2003) discusses. It is a lacking space that is not being (human). Through these theoretical frameworks, we find that Ted is not himself but the narrative scripts of his seeming inhumanity and the reparative ground that psychedelics offered him to become human. This tale is curated through the careful mediation of Grof and Halifax (1978) as scientific and anthropological facilitators.

Ted was "a twenty-six-year-old Afro-American suffering from an inoperable cancer of the colon" (69). Grof and Halifax (1978) described him as having limited education and "fairly open to a religious worldview. Communication in his family was disoriented and complicated and required much psychological work" (63–64). He had a wife named Lilly and three kids.

> His entire childhood was characterized by severe emotional deprivation and outright physical abuse. He lost both parents at the age of 3 and spent several years in various orphanages. Finally, he ended up in the house of his uncle and aunt, who became his foster parents. In their home, he suffered much rejection and cruel emotional and physical abuse. During his childhood and adolescence, Ted was involved in minor antisocial activities, had frequent fistfights with individuals in the framework of street gang skirmishes, and liked rough entertainment. Later, he enjoyed his involvement in the war, where his aggressive tendencies found a socially approved channel. While being married to Lilly, he was extremely jealous of her but had strong tendencies toward extramarital affairs himself (71).

This is Grof and Halifax's humanizing description of Ted which implicitly sutures him to blackness through his violence, broken home, hypersexuality, and vulnerability. It is an exclusionary description that posits his inhumanity as an anthropological subject of study, but it will be through psychedelics that his humanity can emerge and reimagine death.

Ted becomes a site of excess for Grof and Halifax (1978), for if he can be brought into humanity, then perhaps these curative and exploratory models they are formulating have a use. In this article, Grof and Halifax's (1978) descriptions of other patients begin to paint the "Chain of Being" (Wynter, 2003, p.300). Ted is compared to the "full aware[ness]" of other text subjects such as Matthew, who was "a physician," or Susanne, the "attractive, sensitive, and intelligent woman… [who] was involved in the study of psychology," or Joan who "was a forty-year-old housewife and mother of four children" (63, 83, 93). Respectively, each of these people abides by the same narrative scripts that bind Ted. Each of these patients who are not Ted displays a site that can be returned to, as their lives were seemingly success stories until stifled by disability and mortality. Their narratives speak to the overrepresented chain of humanity that defines this text. Each biography is interlinked with the other to imagine the potential ways psychedelics can cure anxiety about death. This chain thus places Ted at the very bottom ring. It is also important to note that none of the other patients are denoted as "white" or "European-American" or any other racialized group, for this is the expected normative position they would occupy. Ted is also described as "in many respects on the opposite side of the spectrum" when compared to Matthew (63). Though a seemingly insignificant fact, these omissions perpetuate the greater script that the text is working toward. If Ted can be cured, then everyone else can be cured, for he is the bottom ring of the chain of humanity.

Interestingly, another test subject, Jesse, is mobilized in close approximation to Ted. Jesse's presence speaks to a criticism of class; he is described as an "almost illiterate" (64) man

2 See Griffiths et al. (2016), Sweeney et al. (2022). Griffiths also cites Grof's 1973 qualitative study on psychedelics and anxiety toward death, continuing to validate the influence of this research to contemporary psychedelic science (Grof et al., 1973).

3 See Pahnke et al. (1970), Kurland et al. (1972).

who "changed jobs several times, and because of his limited education, did not reach high positions in any of them" (80). To read Ted also requires us to sit with Jesse and read him as an object of class analysis that psychedelic science, in this instance, intends to cure. Thus the precarious racial and/or class conversation in Grof and Halifax's (1978) text reflects an ontic presumption of inability, which is further perpetuated by the embodied disability of inoperable cancers. The terminal conditions that these psychedelic subjects occupy speak to the precarity of this exploration, in which only expendable bodies are put into the position of explorer within the emergent scientific discourses of the time. While many folks used psychedelics in the 1970s, the scientific model was constructed as curative toward madness, addiction, and anxiety, eventually leading to death (as seen in Spring Grove). Thus, these structurally negated people on the ontological margin, with Ted's blackness situated as this margin's limit, and structure the project in the space of the Other. Through careful tabulation, deciphering, and integration, this map of death can be set into an abstract model of humanism that Grof and Halifax (1978) work through. Thus, this emphasizes the potential for an utter abstraction from materiality, which these psychedelic biographies ground.

The narrative structure in Grof and Halifax's (1978) text cared for nothing more than the use value that Ted afforded through his blackness, but what of my search? Ultimately, I ran up short, not because Ted never existed, but because the search for Ted was the search for nothing [as Warren (2018) would argue]. Thus, the normative options when faced with this archival lack (or nothingness), according to Nyong'o (2019), often push critics to piece together the "exploitation" that defines the text or toward the hope of "restor[ing]" the subject of the text to some form of being (48–49). In other words, these models postulate totalizing narratives that, within themselves, seemingly foreclose the frame as utterly denying the subject, but what if the subject within the framework is not denied? What is the eruptive capacity of what might rest within the framework itself? As Macharia (2016) warns, "Recovery and representation can never be easy: minefields abound, and one attempts to minimize the damage one will cause" (p. 501). This incessant desire to either move past the violated subject or romanticize them is a dangerous game, for we run the risk of unthinking the damage done and instantiating foreclosure on new, seemingly ethical terms. Instead, as Macharia (2016) suggests, even in the violent potentials of careful analysis, an attempt must be made to piece together a relationship through the incommensurability and ineffability of the archive. Thus, in my reading of Ted, I tarry with the very real potential of my own mode of objectification. As the desire for restoration only makes another object out of a supposedly restored subject, "Instead of the search for an object that leads to a subject, the scholar's search should be for a subject effect: a ghostly afterlife or a space of absence that is not empty but filled" (Young, 2017, p. 3). Working in the vein of Anjali Arondekar's archival theorizations, Young (2017) argues for an opaque model of reading that moves against reinventing violence toward a model that can grapple with "the disjunctures, chasms, and nodes of connection between different historically located fields of knowledge that can help us more fully flesh out the afterlife of black diasporic subjects" (3–4). This extension leads to a broader conversation within psychedelic science, which focuses on blackness, Otherness, and structural violence. In this context, we must move away from merely removing or adding these devalued narratives. The former is the psychedelic humanist model that Grof and Halifax (1978) employed, while the latter serves as the recent impetus in psychedelic scholarship toward inclusion[4], which has inherited a similar valence of violence to the former, as argued by Macharia (2016), Nyong'o (2019), and Young (2017). An opaque reading mode moves against these subject-restoring projects, instead engaging silence for what it offers. It challenges researchers to meet blackness within the object position, which is normatively avoided due to the messy history of colonial violence that has long defined modernity. Within this meeting space, we can witness how Ted's blackness is a mere afterthought. His Otherness is a useful tool for psychedelic research. His humanity is wholly predicated on faulty universalism. If we begin here, we begin to realize the violent model of reading the trip that is normative for blackness as it simultaneously erases blackness. A model that bars this existence and merely uses it like one might be a psychedelic substance.[5]

In reading against this normative trip, I offer up the black trip as a reparative alternative within the psychedelic archive: a model that dares to sit with nothingness, difference, incommensurability, excess, and all the other forms that we might read blackness through. However, this particular model, situated within the psychedelic archive, positions blackness not as a thing to be overcome, as Grof and Halifax (1978) implicitly argue, but instead as a position to be sat with and reimagined even in its violated place within the archive. The black trip destabilizes the normative terrain it occupies through its devalued presence. In effect, via the denied position in which Ted is placed, we cannot necessarily reread him into being in the way that suits us. Instead, our readers

4 See George et al. (2019), Williams and Labate (2019), Morales et al. (2022) for recent discursive examples of inclusivity within the psychedelic science archive. To note, this article is not arguing against treating black patients with psychedelic drugs, but rather the article is suggesting that normative methodological approaches within psychedelic science should expand past recuperative models of inclusion toward engaging the structural history of silence that black patients have and will continue to endure. It is in reckoning with this silence that we can come to remap the normative methodological terrain that defines the meeting of blackness with the psychedelic.

5 This argument of blackness as being consumed like a psychedelic substance is in direct lineage to Walter's (2021) notion of 'ontological envelopment. Walter (2021) particularly focuses on the role of addiction, narcotics, and blackness through his formulation of "Intoxicated blackness." Central to his thesis is that "[the] intoxicated black being in turn becomes toxin, where the addict takes on the role of the drug" (9). Further on, he argues, through his notion of intoxication, that blackness, due to its ontologically enveloped position, "is both intoxicated and… an intoxicating agent" (19). Thinking through this double-bind is key to my argument on the black trip, because blackness structurally occupies an object position of foreclosure—Ted showing this. Yet simultaneously this object position sustains a means of being read/engaged with in a way that can speak toward the material measure of violence that sustains coloniality, humanism, and the West. Thus the black trip is in line with Walter's (2021) arguments on intoxication and addiction, but refitted toward a psychedelic context.

must accept this violence and move with it. It must accept the gap of his being and position nothingness as a generative site of thought. Thus the black trip puts into question the very normative framing of psychedelic science through its humanist model and examines the limits of its uses for all patients. In effect, the black trip is a destabilizing model of rereading the psychedelic archive, as it dares to sit with the violence rather than merely acknowledge it. It yearns to know how, within the history of science and psychedelics, it emerges the way it does and affects its discursive productions. To this end, the black trip sits with the residue of people like Ted, Jesse, and all the marginalized psychedelic subjects and does not recover them but merely acknowledges the violence that will never be totally known. Once carefully deconstructed, these violences begin not just to remap but to undo the normative methods. The black trip then dares us, as researchers, to acknowledge our limitations yet continue to work toward and with the violated. The black trip does not offer a solution, but it offers a mode of thinking through the ineffable violations and continual reimaginings that psychedelic science mobilizes. I may not have found Ted, nor will I truly ever, but I sit with him now. He is nothing, but we must not fear nothing, it is a scarily generative way to exist within humanism's violent epistemology.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

Bruce, L. M. J. (2020). *How to Go Mad Without Losing Your Mind: Madness and Black Radical Creativity*. Durham, NC: Duke University Press.

Christiansen, M., Doblin, R., and Shelley, T. M. (2020). *FY 2019-2020 Financial Report*. California, CA: Multidisciplinary Association for Psychedelic Studies.

Endwell Project (2021). *Rick Doblin's Vision for the Future of Psychedelic Therapies*. Endwell. Available online at: https://endwellproject.org/watch/rick-doblin-rick-doblin-s-vision-for-the-future-of-psychedelic-therapies/

George, J. R., Michaels, T. I., Sevelius, J., and Williams, M. T. (2019). The psychedelic renaissance and the limitations of a white-dominant medical framework: a call for indigenous and ethnic minority inclusion. *J Psychedelic Stud* 4, 1–12. doi: 10.1556/2054.2019.015

Griffiths, R. R., Johnson, M. M., Carducci, M. A., Umbricht, A., Richards, W. A., Richards, B. D., et al. (2016). Psilocybin produces substantial and sustained decreases in depression and anxiety in patients with life-threatening cancer: a randomized double-blind trial. *J Psychopharmacol* 30, 1181–1197. doi: 10.1177/0269881116675513

Grof, S., Goodman, L. E., Richards, W. A., and Kurland, A. A. (1973). LSD-assisted psychotherapy in patients with terminal cancer. *Int. Pharmacopsy.* 8, 129–144. doi: 10.1159/000467984

Grof, S., and Halifax, J. (1978). *The Human Encounter with Death.* Boston, MA: E.P. Dutton.

Kurland, A. A., Grof, S., Pahnke, W. N., and Goodman, L. E. (1972). Psychedelic drug assisted psychotherapy in patients with terminal cancer. *J. Thanatol.* 2, 644–691.

Macharia, K. (2016). 5 Reflections on Trans* and Taxonomy (with Neo Musangi). *Critical Arts* 30, 495–506. doi: 10.1080/02560046.2016.1232773

Morales, J., Quan, E., Arshed, A., and Jordan, A. (2022). Racial disparities in access to psychedelic treatments and inclusion in research trials. *Psychiatric Annals* 52, 494–499. doi: 10.3928/00485713-2022 1123-01

Moreton, S. G., Szalla, L., Menzies, R. E., and Arena, A. F. (2019). Embedding existential psychology within psychedelic science: reduced death anxiety as a mediator of the therapeutic effects of psychedelics. *Psychopharmacology* 237, 2019. doi: 10.1007/s00213-019-05391-0

Nyong'o, T. (2019). *Afro-Fabulations: The Queer Drama of Black Life*. New York, NY: New York University Press.

Pahnke, W. N., Kurland, A. A., Unger, S., Savage, C., and Grof, S. (1970). The experimental use of psychedelic (LSD) psychotherapy. *JAMA J Am Med Assoc* 212, 1856–1863. doi: 10.1001/jama.1970.03170240060010

Psychedelic Alpha (2022). *Psychedelic Bulletin: Following the Money - How Much Do Psychedelics Companies Spend on RandD?*. Available online at: psychedelicalpha.com/news/psychedelic-bulletin-following-the-money-how-much-do-psychedelics-companies-spend-on-rd (accessed March 30, 2023).

Sweeney, M. M., Nayak, S., Hurwitz, E. S., Mitchell, L. N., Swift, T. C., and Griffiths, R. R. (2022). Comparison of psychedelic and near-death or other non-ordinary experiences in changing attitudes about death and dying. *PLoS ONE* 17, 0271926. doi: 10.1371/journal.pone.0271926

Walter, P. F. (2021). Intoxicating blackness: addiction and ambivalent sounds of fugitive life in James Baldwin's 'Sonny's Blues'. *MELUS Multi-Ethnic Lit. U.S.* 46, 44–64. doi: 10.1093/melus/mlab025

Warren, C. L. (2018). *Ontological Terror: Blackness Nihilism and Emancipation*. Durham, NC: Duke University Press.

Williams, M. T., and Labate, B. C. (2019). Diversity, equity, and access in psychedelic medicine. *J. Psychedelic Stud.* 4, 1–3. doi: 10.1556/2054.2019.032

Wynter, S. (2003). Unsettling the coloniality of being/power/truth/freedom: toward the human, after man, its overrepresentation–an argument. *New Cent. Rev.* 3, 257–337. doi: 10.1353/ncr.2004.0015

Yensen, R., and Dryer, D. (1992). *Thirty Years of Psychedelic Research: The Spring Grove Clinic and Its Sequels. Yearbook of the European College for the Study of Consciousness*. Berlin: Publishing House for Science and Education.

Young, H. B. (2017). *Illegible Will: Coercive Spectacles of Labor in South Africa and the Diaspora*. Durham, NC: Duke University Press.

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Naturalism and the hard problem of mysticism in psychedelic science

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Psychedelic substances are known to facilitate mystical-type experiences which can include metaphysical beliefs about the fundamental nature of reality. Such insights have been criticized as being incompatible with naturalism and therefore false. This leads to two problems. The easy problem is to elaborate on what is meant by the "fundamental nature of reality," and whether mystical-type conceptions of it are compatible with naturalism. The hard problem is to show how mystical-type insights, which from the naturalistic perspective are brain processes, could afford insight into the nature of reality beyond the brain. I argue that naturalism is less restrictive than commonly assumed, allowing that reality can be more than what science can convey. I propose that what the mystic refers to as the ultimate nature of reality can be considered as its representation- and observation-independent nature, and that mystical-type conceptions of it can be compatible with science. However, showing why the claims of the mystic would be true requires answering the hard problem. I argue that we can in fact directly know the fundamental nature of one specific part of reality, namely our own consciousness. Psychedelics may amplify our awareness of what consciousness is in itself, beyond our conceptual models about it. Moreover, psychedelics may aid us to become aware of the limits of our models of reality. However, it is far from clear how mystical-type experience could afford access to the fundamental nature of reality at large, beyond one's individual consciousness. I conclude that mystical-type conceptions about reality may be compatible with naturalism, but not verifiable.

KEYWORDS

psychedelics, mystical experience, naturalism, physicalism, hard problem of consciousness, metaphysics

1 Introduction

Psychedelic substances[1] are known to facilitate mystical-type experiences, which may include metaphysical insights about the fundamental nature of reality, not attainable by the

1 Psychedelics are substances that can produce a specific kind of altered state of consciousness. They include so-called classical psychedelics such as lysergic acid diethylamide (LSD), psilocybin, and dimethyltryptamine (DMT) which act as agonists on the serotonin 5HT2A-receptor. Non-classical psychedelics, in turn, are a wide class of substances with varied neuropharmacological mechanisms and include, for example, cannabis, ketamine, ibogaine, and nitrous oxide. It could be argued that what makes a substance psychedelic is what kind of experience it facilitates, not *how* it does this.

senses or intellect[2]. Such insights could be expressed by saying that "All is One," or that the fundamental nature of reality is, as Ram Dass puts it, "loving awareness," or even something that could be referred to as "God." Typically, such insights are considered to reveal the nature of reality at large, not just one's own individual consciousness. Some naturalistically oriented scientists and philosophers might consider the insights as unscientific and therefore false. For example, a prominent philosopher of psychedelics, Letheby (2021), considers mystical-type metaphysical insights as inconsistent with naturalism and sees them as *negative side-effects* of psychedelic experiences, or metaphysical hallucinations. In a recent commentary paper, Sanders and Zijlmans (2021) considered the mystical experience as the "elephant in the living room of psychedelic science" (p. 1253) and call for the demystification of the field. Carhart-Harris and Friston (2019), following Masters (2010), refer to spiritual-type features of psychedelic experiences as *spiritual bypassing*, where one uses spiritual beliefs to avoid painful feelings, or "what really matters." While this may be true in some cases, it certainly is not always.

In contrast to the naturalistic researchers cited above, the advocates of the *mystical approach* would hold that, at least some types of psychedelically facilitated metaphysical insights can be true. For example, a prominent developer of psychedelic-assisted therapy, psychologist Bill Richards holds that psychedelics can yield "sacred knowledge" not afforded by the typical means of perception and rational thinking, and which can have therapeutic potential (Richards, 2016). The eminent religious scholar Huston Smith holds that "the basic message of the entheogens [is] that there is another Reality that puts this one in the shade" (Smith, 2000, p. 133). Several contemporary philosophers are taking the mystical experiences seriously and aim to give them consistent conceptualizations. For example, Peter Sjöstedt-Hughes has interpreted experiences facilitated by the psychedelic substance 5-MeO-DMT, characterized by an experience of unitary white light that underlies the perceptual reality, in terms of Spinoza's philosophy, where it could be considered to reveal the ultimate nature of reality, which for Spinoza is equal to God (Sjöstedt-H, 2022). Likewise, Steve Odin, a philosopher who specializes in Buddhist philosophy, argues that LSD-induced experiences may promote a *satori* experience where one can be considered to become acquainted with the *dharmakāya*, or the Buddha-nature of reality (Odin, 2022). I have also argued previously that unitary experiences, which can be facilitated by psychedelics, enable us to know what consciousness is in itself, thereby yielding *unitary knowledge* which is unlike *relational knowledge* afforded by perception and other modes of representation (Jylkkä, 2022). These authors continue a long tradition in perennialistic psychedelic science, defended by key figures like James (1902), Huxley (1954), and Watts (1962) where mystical experiences are taken to reflect a culture-independent common core, which can reveal us the "Reality of the Unseen" (to borrow a phrase from James).

From the neuroscientific perspective, a mystical-type experience is just like any other experience, that is, a biochemical process in the brain inside the skull. The subject undergoing a psychedelic experience in a functional magnetic resonance imaging device (fMRI) during a scientific experiment does not become dissolved in their environment, or at least so it appears. What the mystic considers as an ineffable revelation of the fundamental nature of reality, the neuroscientist considers as a brain process. The problem is, then: why should the brain process tell the mystic anything of reality outside the skull? Mystical experience is, after all, unlike sense perception where the perceiver is causally linked with the perceived, external object. In mystical experience, the mystic is directed inwards and is not, at least so it seems, basing their insight on any reliable causal interaction with the reality at large. The mystic's insight is not verifiable in the same sense as empirical observation. Thus, how could the mystical experience yield knowledge of reality at large, instead of just their own individual consciousness? This can be considered as the *hard problem* of mysticism. Another problem pertains to the *compatibility* between the mystic's claims about reality. For example, when the mystic claims that God is the fundamental nature of reality, is this compatible with what we know about the world through science? (In this paper, by "science" I refer to natural science, unless states otherwise.) Answering this question requires elaborating on what is meant by the "ultimate nature of reality," and whether that notion is compatible with naturalism. We may call this the *easy problem* of mysticism.[3] I will argue that the easy problem may be solvable: it could be compatible with naturalism to hold that there is an ultimate nature of reality unknown to science, and some mystical-type claims about that ultimate nature may be compatible with naturalism. However, this compatibility does not entail that the mystical-type claims about reality would be *true*. This leads to the hard problem: What could be the epistemic mechanism that renders the mystical-type claims about reality true?

I will first focus on the easy problem about the compatibility between mysticism and naturalism. I examine Letheby's (2021) argument that mystical-type metaphysical insights (or, more specifically, their conceptualizations) are incompatible with naturalism, focusing on the concept of naturalism. I argue that naturalism is more liberal than Letheby assumes, and that naturalism is not very restrictive about what can be considered as "natural"; this can be considered as an *a posteriori* question. Moreover, I argue that naturalism allows there to be more ways of knowing nature than just science, unless naturalism is conflated with scientism. In other words, there can be more to knowledge than science can confer. The limits of science are illustrated with the case of consciousness, which can for good reasons be considered as a physical process, but which nevertheless cannot be fully conveyed by science: from science we cannot infer what it is like to be a bat, to experience colors, or to undergo a psychedelic experience. I propose that science cannot fully

2 Psychedelics can facilitate a broad range of experiences and insights, not just mystical-type. Here I focus on mystical-type experiences because of their centrality in modern psychedelic research: for example, the intensity of mystical-type experience is a strong predictor of treatment outcomes in psychedelic-assisted therapy (Ko et al., 2022). Mystical-type experiences are typically conceptualized based on Stace's (1961) work, which is the basis for the Mystical Experience Questionnaire (MEQ) (Barrett et al., 2015), commonly used in empirical psychedelic research. In this article, I focus on metaphysical insights, which are a central subcomponent of mystical-type experiences, but have been criticized by some authors as being delusional.

3 I am borrowing the easy/hard problem dichotomy from the context of consciousness studies, as introduced by Chalmers (1995).

capture the intrinsic nature of consciousness, because it cannot fully capture the intrinsic nature of *anything* – this is a general, categorical limit of science. Science is limited to modeling the world based on observations and "pointer readings" but cannot convey what is the model-independent nature of the modeled, that is, the nature of the world beyond our representations of it. This representation-independent nature of reality can be considered as its "ultimate nature," which can be represented in several ways. This opens up the possibility that mystical-type claims about reality could be true, or at least not ruled out by the scientific worldview. The scientific worldview is, after all, just a *view* of reality, and there can be several ways to represent reality. I will then turn to the hard problem, arguing that there is a case where we can directly know the ultimate nature of reality, and that is the case of our own consciousness. I know my consciousness directly through *being* it, not merely through representing it. This type of knowledge can be called *unitary*, in contrast to representational or observational knowledge, which is *relational*. Consciousness can be argued to directly reveal the ultimate nature of one specific form of the physical reality, namely that of those physical processes that constitute human consciousness. This, however, leaves open the hard problem: how could the mystic know the nature of reality at large through their own, subjective experience? What is it about the mystical-type experience that could afford the mystic insight into the nature of reality at large? I will conclude by examining some possible approaches to the hard problem.

2 Metaphysical insights in mystical-type experiences

To evaluate whether metaphysical insights involved in mystical experiences are compatible with naturalism, we must first examine how they are typically conceptualized. Current research on mystical-type experiences in the psychedelic context is largely based on the work of the philosopher Stace (1961). In the empirical context, mystical-type experiences are commonly assessed with the Mystical Experience Questionnaire (MEQ) (Barrett et al., 2015), which is probably the single most important predictor of treatment outcomes in psychedelic-assisted therapy (Ko et al., 2022; but see Letheby, 2021). The MEQ is based on Stace's work, that is, it aims to assess mystical-type experience as originally defined by Stace. This motivates focusing on Stace's theoretical work in the present philosophical discussion of mystical-type experiences and their metaphysical features.

Drawing from historical mystics across epochs and cultures, Stace identifies the following universal core features of the mystical experience: (1) The experience includes a strong sense of unity with the environment or the sense that "All is One," and at least in some varieties (the so-called internal unitary experience) it has no sensory content. (2) The experience is perceived as non-spatial and nontemporal and may thus be experienced as infinite or outside time. (3) It has a sense of objectivity or reality, or what William James called "noetic quality," meaning that it is felt as true or as revealing something that is true. (4) It involves feelings of blessedness and joy, which may be considered as not merely subjective experiences, but rather as stemming from contact with the ultimate nature of reality. (5) The experiencer senses that they have met something divine or sacred. (6) The experience involves paradoxical aspects, such as perceiving unity in individual objects and the many in One, yielding a logical contradiction. Finally, (7) the experience is alleged by the experiencer to be ineffable or impossible to capture in words (Stace, 1961, 110–111).

Stace's original list of the features of mystical experiences contains at least two clear metaphysical insights: that of unity, and that of being outside time and space.[4] Depending on the case, the sense of blessedness and joy could also count as metaphysical insights if the person experiences them to reflect the fundamental nature of reality (e.g., that the fundamental nature of reality is somehow sacred or divine, or otherwise intrinsically positively valued). Also, the notions of paradoxicality and ineffability could be counted as metaphysical insights to the extent that they imply that the fundamental nature of reality cannot be captured in language. Noetic quality might appear as metaphysical, but it is mainly a second-order feature that pertains to the epistemic status of the insight (i.e., it is felt as true), not its content. Nevertheless, possessing noetic quality is arguably a necessary condition for an experience to count as "metaphysical insight" – the experience cannot be a metaphysical insight unless it is perceived as true.

Unity is considered by Stace to be the most central feature of the mystical-type experience. He divides the experience of unity into internal and external. The former means an empty consciousness void of any sensory contents that may nevertheless be characterized as "light" or "consciousness," as is done by Jan van Ruysbroeck here:

> The God-seeing man … can always enter, naked and unencumbered with images, into the inmost part of his spirit. There he finds revealed an Eternal Light … It [his spirit] is undifferentiated and without distinction, and therefore it feels nothing but the unity (Quoted in Stace, 1961, p. 94).

A similar insight was experienced by the theologist-physician-psychiatrist Walter Pahnke, renowned for his contributions in the early stages of psychedelic science, during his first LSD trip:

> The most impressive and intensive part of this experience was the *white light* of absolute purity and cleanness … The associated feelings were those of absolute *awe*, *reverence* and *sacredness* … The white light experience was of *supreme importance* – absolutely self validating and something worth staking your life on and putting your trust in (Pahnke, 1964).[5]

It is obvious from the quote that Pahnke did not consider the experience as *just* an experience, but rather as something truly existing that one can "put their trust in"; thus, it had noetic quality and can be considered as a metaphysical insight. The absoluteness and

4 Being outside time and space is a central aspect of the psychedelic experience, but unfortunately, I cannot go into it in the present article due to space limits. However, the illusoriness of space and time can be considered as compatible with, or even following from, certain accounts in physics (Rovelli, 2021).

5 The quote can be found on several webpages, also in its alleged original form, scanned from a paper written with typewriter. Here I cite the Erowid site, on the assumption that the link is relatively stable.

all-encompassing reality of such "illumination" is also emphasized in, for example, the teaching of the Zen master Huangbo, who calls it the "One Mind" or simply "Buddha":

> All the Buddhas and all sentient beings are nothing but the One Mind, beside which nothing exists. The One Mind alone is the Buddha, and there is no distinction between the Buddha and sentient beings (Quoted in Blofeld, 1958).

External unity, in turn, means an experience where the subject experiences the unity in the multiplicity of external objects. For example, St Teresa expresses her experience as follows:

> One day being in orison it was granted to me to perceive in one instant how all things are seen and contained in God. I did not perceive them in their proper form, and nevertheless the view I had of them was of a sovereign clearness, and has remained vividly impressed upon my soul (Quoted in Stace, 1961, p. 68).

In experiences of external unity, one typically sees every single object as an instance of one single underlying reality, which supersedes that which can be perceived with the senses. St Teresa calls it "God," and Meister Eckhart calls it the "One":

> Here all blades of grass, wood, and stone, all things are One. This is the deepest depth (Quoted in Stace, 1961, p. 63).

How is it that the mystic knows these things? The mystical insight pertains to the nature of reality that cannot be known through the senses or the intellect (i.e., conceptual-rational thinking), but rather which can only be directly intuited, or known through becoming one with it. This is prominent in typical definition of "mystical," as for example in the Merriam-Webster dictionary:

> Having a spiritual meaning or reality that is neither apparent to the senses nor obvious to the intelligence (Merriam-Webster, n.d.)

Or as:

> Involving or having the nature of an individual's direct subjective communion with God or ultimate reality. (*Ibid.*)

Here the first definition pertains to what the mystical *is*, while the latter definition is about how a subject can *know* the mystical: through direct communion or becoming one with it. Importantly, the definitions do not make positive characterizations about the nature of that something that one has encountered in a mystical experience (although it is often referred to by mystics as "God" or "ultimate reality"). This could be taken to reflect the intrinsic ineffability or non-conceptual nature of the insight, to which all conceptualizations are subordinate (Stace, 1961).

To sum up, we can characterize the metaphysical-epistemological Core of the mystical experience as follows:

> (Core) There is a fundamental, unitary nature of reality that is beyond the sensory world and that one can know directly.

Note that the Core contains both a metaphysical element that refers to the ultimate nature of reality, and an epistemological element implying that we can know that nature directly. The Core does not imply what the fundamental nature of reality *is*, and arguably different people can have different conceptions about it, although in both classical mystics and psychedelic reports notions like "Light" or "Mind" occur repeatedly. The easy problem mainly pertains to the metaphysical part of the thesis and includes the following questions:

> (EP1) Can we reconcile with science the notion that there is a unitary, fundamental nature of reality that is beyond the scope of observation-based science?
>
> (EP2) To what extent are different mystical-type theses of this alleged "fundamental nature" compatible with science?[6]

I will mainly focus on the first question, since answering it is a prerequisite for answering the second one. The hard problem, in turn, pertains mainly to the epistemic part of the Core and can be summarized as follows:

> (HP) How could the mystical-type insight give access to the unitary, fundamental nature of reality in a direct, non-sensory and non-intellectual sense?

The hard problem involves showing what is the relationship between the mystical-type insight and the nature of reality at large, beyond the mystic's own consciousness. Moreover, there is a more specific problem pertaining to the relationship between mystical-type *conceptions* of reality (e.g., that the ultimate nature of reality is God, love, or a cosmic consciousness) and the mystical-type *insight*, which is arguably non-conceptual and non-representative. The mystical-type insight is often considered as ineffable and direct, leading to the question of how it can justify or ground conceptual representations of reality. In sum, the hard problem involves showing how the mystical-type insight could directly reveal the ultimate nature of reality, as well as how it could justify specific mystical-type theses of reality. Here I am mainly concerned with the first part of the hard problem, that is, how the insight could reveal reality at large.

Next, I will focus on the easy part by examining what is meant by naturalism. I will argue that naturalism, as commonly conceived, is compatible with the existence of non-scientific knowledge, and with the idea that there is an ultimate nature of reality beyond the scope of science.

3 Naturalism

Naturalism has no agreed meaning and only few contemporary philosophers would consider themselves as non-naturalists (Papineau, 2020). Nevertheless, it is commonly accepted that naturalism consists of two main components, ontological and epistemological. The ontological component is

6 The mystical-type "theses" are conceptual representations of reality (e.g., the claim that the ultimate nature of reality is some type of sacred light), which are hypothetically based on, or facilitated by, the mystical-type insight. The insight itself, in turn, may be non-conceptual.

commonly equated with physicalism, the metaphysical thesis that only physical entities or processes exist (Papineau, 2020). I will follow this tradition. The epistemological component, in turn, is more difficult to pinpoint. It is commonly taken to imply that our primary means of knowing reality are scientific, or that philosophy should in some sense be continuous with the sciences.

For example, in *The Concise Encyclopedia of Western Philosophy and Philosophers*, edited by Urmson and Ree, naturalism is defined as follows:

> A naturalist considers that the totality of all things which we call 'nature' and which are studied in the natural sciences is the totality of all things whatever, and denies the need of any explanations of the natural in terms of the super-natural; such a philosopher will normally hold that any reference to a deity, or to a realm of values, or to mind as something more than a natural phenomenon is illegitimate (Urmson and Ree, 1989, p. 218).

This definition makes the ontological implication that there is only what we call "nature" and what the sciences study. But what is it that we denote by the word "nature"? The definition does not make any positive statement as to its character. Thus, the definition is compatible with the existence of deities, values, or minds, *if* these are considered as natural (or part of what we call "natural"). For example, a pantheistic theory where God is considered as identical with nature is compatible with naturalism thusly defined (*cf.* Spinoza's pantheism; see also Sjöstedt-H, 2022). However, commonly naturalism is taken to imply physicalism, and it is unclear whether, or in what sense, entities like deities could belong to the extension of the term "physical." This is a question that we will turn to in due course.

The *Cambridge Dictionary of Philosophy* (edited by Robert Audi), distinguishes between the methodological and metaphysical component of naturalism:

> Naturalism, the twofold view that (1) everything is composed of natural entities – those studied in the sciences (or in some versions the natural sciences) – whose properties determine all the properties of things, persons included … and (2) acceptable methods of justification and explanation are commensurable, in some sense, with those in science. Component (1) is metaphysical or ontological, component (2) methodological and/or epistemological (Audi, 1995, p. 517–518).

Like the first definition, this one defines the ontological nature of the natural as *that something* – whatever it is – that the sciences study. The methodological component is, by contrast, weakly defined as "commensurable" with the methods of science. This is a very liberal definition and could mean every method that is *not incompatible* with the findings and methods of mature science. This can be taken to entail both that our *methods* of knowing nature should be compatible with science, and that the *theses* or *theories* that we form based on these methods should be consistent with mature scientific theories.

The ontological part of naturalism does not rule out that there could be facts about nature that are not strictly scientific[7], as long as our formulation of these facts does not contradict physicalism or the contents of mature scientific theories. Using the terminology of Orr (2006), we can say that there could be facts that are *non*scientific (i.e., outside the scope of science), but not *un*scientific (i.e., incompatible with science). Such facts could pertain to God, morality or consciousness, on the premise that science alone does not entail whether God exists or not (and in what sense), what is right or wrong (*cf.* Hume's guillotine which states that it is not valid to infer from how things are to how things ought be), or what it is like to be subjectively conscious (Chalmers, 1995). Such facts would be outside the domain of what can be studied in science. They need not conflict with the ontological part of naturalism, unless we consider God, morality, or consciousness to be something nonphysical or supernatural. There are viable philosophical arguments to the conclusion that such facts can be considered as natural [*cf.* (Rosen, 2017) regarding moral naturalism, or (Strawson, 2003, 2006) concerning naturalism about consciousness, or (Stone, 2012) on spiritual naturalism]. In contrast, the epistemological aspect is less clear: is our way of *knowing* such nonscientific facts compatible with science? This depends on how the epistemological access to such facts is elaborated. As we will see, the epistemological problem becomes central when we turn to mysticism. In any case, it can be argued that it is at least *possible* that there is knowledge that is extra-scientific.

It would be a logical fallacy to infer that if something (e.g., the existence of God, morality, or consciousness) does not follow from science, then it cannot exist. Such a conclusion does not follow from naturalism, the scientific method, or scientific theories, without the extra premise that there are no facts beyond those described by science. This premise is closely related to scientism, that is, the epistemological thesis that science, usually equated with natural science, is the best or only way to attain truths about reality.

Scientism can be divided into *weak scientism*, which holds that science is the best way to know reality, and *strong scientism*, holding that science is the *only* way to know reality. Further, scientism can be divided into *broad scientism* where science is considered to include fields such as the social sciences and humanities, and to and *narrow scientism* where science is equated with the natural sciences (Hietanen et al., 2020). From the perspective of naturalism, it is plausible to focus on narrow forms of scientism where epistemological priority is given to the natural sciences, on the assumption that all that exists is grounded in fundamental physical processes. Regarding weak and strong versions of scientism, strong scientism categorically denies the possibility of extra-scientific knowledge, whereas the weak version merely prioritizes science. Both the weak and strong theses can be considered to contradict our knowledge of, for example, moral facts, given that what is right or wrong cannot be known through natural science *at all* (unless one endorses naturalistic reductivism about moral facts and our knowledge of them; see Lutz and Lenman, 2018). Science can merely answer what people *consider* as right or wrong, but such observable facts are different from what really *is* right or wrong (if anything) which, in turn, is a philosophical question. Similar reasoning could be applied to aesthetics or religion, but that discussion is beyond the scope of this paper.

7 By "scientific fact" I mean, broadly, a fact that is supported by substantial scientific evidence, or a fact entailed by a mature scientific theory. This does not entail that science could ever *prove* any statement as definitely true. Note that scientific and extra-scientific facts or theses are sometimes closely related. For example, it is an empirical question what is the neural correlate of consciousness, but an extra-scientific (or metaphysical) claim to say that the neural correlate is *identical* with consciousness.

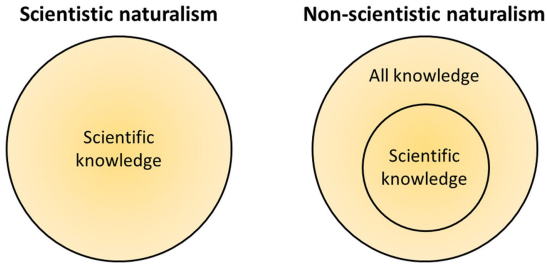

FIGURE 1
Scientistic naturalism holds that science can capture all there is to know about nature. Non-scientistic naturalism implies that there can be more facts of nature than what science can convey, as well as, potentially, more knowledge of nature than just scientific knowledge. (Note that there could also be facts that are not knowable at all, in which case no type of knowledge could capture all facts of reality.)

To illustrate the limits of scientism, we may focus on the case of consciousness. It seems plausible that I know my own consciousness – to take a trivial example, what coffee tastes like – without any resort to science, natural or humanistic. It can be argued that science is not the only way nor even the best way to know what coffee tastes like, given that from science alone we cannot infer that subjective, phenomenal consciousness exists at all (Nagel, 1974; Jackson, 1986; Chalmers, 1995). This yields a contradiction even with weak and broad forms of scientism, since not even humanistic or social sciences could convey the taste of coffee to someone who has never tasted it. And still, the taster knows the taste, even if they had never known of any form of science. In short, the case of consciousness demonstrates that there can be more knowledge and facts than what is implied by science (Figure 1).

4 Consciousness and the limits of science

Non-scientistic naturalism implies that there can be facts of nature that are not captured by science alone, but which can be known in other ways; that is, there can be extra-scientific knowledge. The domain of facts is broader than the domain of scientific facts, and the domain of knowledge is broader than the domain of scientific knowledge (Figure 1). If we assume, following the ontological component of naturalism, that everything is physical, then the extra-scientific facts would nevertheless be *physical* facts. This implies that there is more to the physical than what physics, or science generally, can capture. This is a central thesis in Galen Strawson's version of physicalism (Strawson, 2003, 2006). In his view, consciousness is a real and concrete phenomenon, which is physical on the premise that all concrete and real entities are physical. Strawson calls this thesis *realistic physicalism*, that is, physicalism that is realistic about consciousness, and contrasts it with *physicSalism*, the thesis (or *faith*, as he calls it) that physics and (natural) science can capture all aspects of the physical. He argues that physicSalism is undermined by the case of subjective consciousness, whose nature science cannot fully capture. This is known as the explanatory gap in philosophy of mind (Levine, 1983), also known as the epistemic gap. Here I use the term "epistemic," as it can be considered as broader, on the assumption that there is more knowledge than explanatory or conceptual knowledge.

Innumerous arguments throughout history of philosophy demonstrate the epistemic gap. For example, Bertrand Russell wrote as follows:

> It is obvious that a man who can see knows things which a blind man cannot know; but a blind man can know the whole of physics. Thus the knowledge which other men have and he has not is not part of physics (Russell, 1927, p. 389).

I assume that the reader is familiar with other, more detailed arguments for this conclusion, and it suffices to mention them here without going into the details. For example, Thomas Nagel argued influentially that even if we knew every scientific fact about bats, we could nevertheless not know what it is like to *be* a bat (Nagel, 1974). Thus, there is a massive range of facts of subjective phenomenal consciousness that science cannot capture. Likewise, Frank Jackson made an argument regarding the neuroscientist Mary, captured in a black-and-white room (Jackson, 1986). To convey Jackson's point without facing some problems specific to that thought experiment (e.g., Mary could see her own blood), we may imagine a completely color-blind neuroscientist Mary who knows all there is to scientifically know about color perception: the visual system in the brain, neural correlates of consciousness, neurophysiology, and even physics in general. Arguably, if she were to somehow acquire color vision (say, in a surgical operation), it seems evident that when she for the first time *sees colors*, she learns something new: what colors look like. If she learns something new, then that something was not captured by her previous scientific knowledge. By the same token, a psychedelically naïve scientist, knowing all scientific facts of psychedelic experiences in the brain, nevertheless learns something new when she personally undergoes a psychedelic experience (Jylkkä, 2022). Finally, Chalmers (1996) argues that it is possible to conceive of physical duplicates of actual humans or "zombies" which lack phenomenal consciousness, such that there is nothing it is like to be a zombie. Chalmers takes this to show that phenomenal facts are not determined by physical facts alone.[8]

Chalmers and Jackson take their arguments to show that consciousness cannot be physical, but this conclusion is widely disputed. However, a less controversial claim is that all the above thought experiments demonstrate the *epistemological point* that subjective consciousness cannot be known through science alone. This is a widely accepted notion. The only position in philosophy of mind that denies that we have knowledge of what experiences feel like is eliminativism or illusionism, which deny the existence of subjective, phenomenal consciousness altogether (Dennett, 1991; Frankish, 2017). Discussing that position is beyond the scope of this paper, and I will assume it as a trivial fact that we do know what experiences feel like: they feel like *this*. *This* is what it feels like to philosophize and

8 One might respond to these arguments that even if current science cannot capture the nature of phenomenal consciousness, it is possible that future science could. Such arguments are discussed and rejected in Chalmers (1996) and are not in the scope of the present article. In what follows, I argue that the gap is unbridgeable, because it is the difference between things in themselves and our representations of them.

listen to John Coltrane. But what is *this*, and what does it tell us about the nature of reality?

4.1 Physicalism with a Kantian twist

Suppose that consciousness is indeed physical as the naturalist claims. Consciousness can be considered as a concrete and real physical phenomenon – indeed, of all the physical phenomena, for us it is the most real and its existence is beyond doubt. There is extensive empirical evidence for this position from neuroscience: conscious experience can be altered through manipulating the brain, and there is no evidence that changes in consciousness could take place without corresponding changes in the brain (or some other physical substratum[9]). It is plausible that eventually neuroscientists will discover the *constitutive mechanisms of consciousness* (CMC) such that they directly correspond to experiences, the two being perfectly structurally isomorphic (Revonsuo, 2006; Jylkkä and Railo, 2019). The integrated information theory can be considered as a step into this direction, arguing that every experience is perfectly isomorphic to an information structure, described as a maximally integrated conceptual structure, which in turn corresponds to a process in a physical system such as the brain (Tononi et al., 2016). It must be granted that we do not yet know how consciousness should be described in (neuro) scientific terms but based on the current evidence it is highly plausible that consciousness is physical. After all, if consciousness was not physical, it could not interact with the physical reality due to the causal closure of the physical (and I assume that consciousness does have causal properties, e.g., my thirst causes me to seek something to drink). It can also be argued *a priori* that consciousness must be physical on the premise that all concrete and real phenomena in the world are physical (Strawson, 2006).

The naturalistic thesis that consciousness is physical is more radical than commonly perceived. In fact, it is nothing short of *miraculous*. How could subjective consciousness – the taste of coffee right now and these thoughts flowing in my consciousness – be *physical*, that is, forms of the same substance as the stars, this planet, and the coffee itself? This claim is made even more miraculous by the fact that science alone cannot convey to any other person how coffee tastes like for me, or what it is like to entertain these thoughts. Consciousness demonstrates that the physical is more than what the sciences can convey. In the light of the epistemic gap and on the premise of physicalism, it can be argued as follows:

> P1. Consciousness is physical
>
> P2. We know what consciousness feels like
>
> P3. Science cannot convey what consciousness feels like
>
> C. Thus, there are facts about the physical that cannot be captured by science alone.

In other words, science is epistemically limited: there is at least one kind of knowledge that is outside its scope, or that is nonscientific. This leads to the question of what kind of physical phenomenon subjective consciousness is, and why science cannot capture it. Answering this question leads to vast metaphysical landscapes where the paths are many and one easily gets lost. However, even if there is no definite answer to *why* science cannot capture the nature of consciousness, we may start from the premise that this epistemic limit of science is *real*: there are physical facts that science cannot convey, even if we do not know exactly why that is. Next, my aim is to briefly illustrate some answers to this problem, although I cannot go into them in much detail. I take it that the case of consciousness reveals the limits of science and that nature is more than what science alone implies. The relevance for the case of mysticism is this: reality can, in some sense, be taken to have a "fundamental nature" that is beyond the scope of science, and this nature includes consciousness (*cf.* the easy problem, EP1). Moreover, we have direct access to this part of the fundamental nature of reality through being conscious (*cf.* the hard problem, HP). Now the task is to elaborate what this means.

4.2 Russellian monism

Russellian Monism (RM) is one way to elaborate how consciousness is beyond the scope of science. It is noteworthy that RM is often contrasted with physicalism (e.g., Goff, 2017) but it can also be given a physicalistic interpretation, as Strawson does (Strawson, 2003, 2006, see also Montero, 2015). According to RM, science is limited to modeling *extrinsic properties* which are generally considered as relational or structural. For example, the Newtonian equation $F = ma$ specifies the interrelations between the variables of force (F), mass (m) and acceleration (a), or Einstein's equation $E = mc^2$ defines how energy (E) and mass are related, and so on. However, none of these equations can tell, according to RM, what entities such as force or energy are intrinsically, that is, beyond their relations to other entities. It is intuitive to suppose that an entity like an electron has some nature or essence in and of itself, which is the way it is considered apart from its relations to other entities. For example, we can observe how electrons behave in electromagnetic fields – how their acceleration and direction change, as happens in old-fashioned CRT-televisions – but it seems intuitive that electrons have some nature independently of how they are disposed to behave in electromagnetic fields, or independently of how they are disposed to interact with *anything*. RM holds that such relational or dispositional properties of an entity are grounded in the categorical or intrinsic nature of the entity. The logic is that if objects A and B are disposed to interact in a specific way, this must be grounded in the way A and B are in themselves, independently of the relation they have to each other. Thus, scientific observation and modeling can only capture the extrinsic properties of matter, but not their intrinsic bases. As Goff has crystallized the point, science can only tell us what matter *does*, not

9 We may assume that organisms without brains can be phenomenally conscious. Some might even argue that computers could be conscious, but then again, *all* forms of reality can be considered as forms of consciousness. I strongly doubt that computers, being deeply different in physical layout than biological organisms, could manifest consciousness in any similar form as living organisms do. This claim rests on the premise that consciousness is *identical* with its physical correlate (the correlate *is* the experience seen "from the outside"), which implies that any two systems differing in physical layout cannot be strictly phenomenally identical (Jylkkä and Railo, 2019).

what it *is*. In sum, RM holds that consciousness is an intrinsic property and therefore beyond the scope of science.

If the intrinsic properties postulated by RM are physical, then RM can be considered as compatible with naturalism. It could, however, be argued that RM is in some respects incompatible with the *spirit* of naturalism. It postulates the existence of two distinct types of properties, roughly mental (intrinsic) and non-mental (extrinsic), leading to a kind of property dualism (Kind, 2015; Chalmers, 2019). This leads to several dualistic problems, such as how do the intrinsics have any causal power or how "mental causation" is possible (Howell, 2015), or how the intrinsic and extrinsic properties are related (Hiddleston, 2019). In my view, the most serious problem of RM is that it is ontologically heavy: based on *a priori* reasoning, it essentially doubles the number of properties in the world, postulating an intrinsic categorical property in addition to each extrinsic property, whereas for scientific explanation the extrinsic properties would suffice. RM ties us to a very specific kind of substance ontology with static intrinsic properties and is incompatible with process metaphysics where happenings and interactions are prior to objects and properties (Jylkkä and Railo, 2019). It could be argued that modern quantum mechanics, claiming that the fundamental nature of reality is best described as a wave function, is best compatible with, or even leads to, a process ontology, where there are no definite particles or things which could have purely "internal" properties (Rovelli, 2021). Indeed, many naturalistically-minded philosophers reject the notion of intrinsic properties and endorse ontic structural realism instead, where the relations described by science are considered as ontologically fundamental (Ladyman, 2023). An extensive discussion of the problems of RM and its compatibility with modern physics and naturalism is beyond the scope of this paper. However, it can be argued that RM is based on a more general, Kantian idea about the limits of observation, which need not be coupled with categoricalism or the existence of intrinsic properties.

4.3 Naturalistic monism

According to Naturalistic Monism (NM), consciousness is identical with its neural correlate or constitutive mechanism, and the epistemic gap between the two reflects the distinctness between the scientific model (e.g., the "neural correlate") and the modeled itself (i.e., consciousness) (Jylkkä and Railo, 2019). The epistemic gap is thus not specific to consciousness but reflects a *general* limit of science: its limitedness to modeling reality based on observations. This Kantian intuition is vividly captured by the 19th century astrophysicist Arthur S. Eddington, who writes as follows:

> The atom is, like everything else in physics, a schedule of pointer readings. The schedule is, we agree, attached to some unknown background. Why not then attach it to something of a spiritual [i.e., mental] nature of which a prominent characteristic is thought. It seems rather silly to prefer to attach it to something of a so-called 'concrete' nature inconsistent with thought, and then to wonder where the thought comes from. We have dismissed all preconceptions as to the background of our pointer readings, and for the most part we can discover nothing as to its nature. But in one case – namely, for the pointer readings of my own brain – I have an insight which is not limited to the evidence of the pointer readings. That insight shows that they are attached to a background of consciousness. I may expect that the background of other pointer readings in physics is of a nature continuous with that revealed to me in this way (Eddington, 1929, pp. 258–260).

Importantly, Eddington does not postulate the existence of any separate class of intrinsic properties that consciousness is part of, but rather emphasizes how science is limited to *modeling based on observations*. According to NM, there do not exist ontologically distinct intrinsic and extrinsic properties, but rather there is only the *epistemic* difference between how things appear to us in observation and thought, versus the way things are independently of being observed and modeled. Like all human beings, scientists cannot but represent the external world in their minds; they cannot step outside their consciousness to see how things are independently of their own consciousness. Thus, NM is compatible even with ontic structural realism or process ontology where no intrinsic properties are implied.

The main idea underlying NM can be illustrated with the classical example of a tree falling in forest when there is no one there to hear it. Does it make a sound? The naturalist might say that it does make a sound, in the sense of there being specific kind of vibration of air molecules, but there is no sound as sensation or brain process. However, what is the vibration of molecules when there is no one to model it as "vibration of molecules"? The scientific account of sound is merely a representation in our minds, and our "vibration of molecules" -theory is something distinct from what it is about. The vibration of molecules as a process independent of the human mind is the *object*[10] of the scientific representation, distinct from the representation. What is the representation-independent nature of that object? That is, what is the nature of the object independently of being conceived of as "vibration of molecules"? This is a mystery; it is *logically impossible* to know the answer through representation. The moment I try to understand the mind-independent nature of an object, I bring it to my consciousness. In short, the scientific model is distinct from the modeled and does not afford us access to its nature in itself, independently of being modeled and observed in a specific way. Our ignorance of things in themselves can be called "Kantian humility" (Langton, 2001).

Kantian humility can be elaborated in several ways. For example, the Kant scholar Lucy Allais writes that "the way the object is presented in consciousness is *something more* than the object alone, as it is outside of this relation" (Allais, 2015, p. 113, emphasis added). On this approach, perception of an object is constituted by the interaction between the perceiver and the object. That is, when a scientist observes, say, an atom, the way the atom appears to them is constituted by the way they and their measuring devices interact with the atom itself, that is, that something "out there" that exists independently of being observed (although not necessarily independent of how it is related to *other* entities besides the observer[11]). This idea is illustrated by the

10 Here I use the term "object" in an ontologically innocent sense, not implying anything about its nature: whether it is a thing, process, or something else.

11 It can be argued that objects have no intrinsic nature that is independent of their relational and dispositional properties, but instead that the nature of an object is exhausted by its relational properties; the view is known as ontic

measurement problem in quantum mechanics (QM). In QM, an elementary particle is modeled by a wave-function whose mechanics (e.g., spatial position, temporal development of different properties) are described by the Schrödinger equation. The Schrödinger equation merely specifies the probability of making certain *observations* but cannot tell anything of what underlies the observations, when it is not observed. There is no way of knowing what the wave function is "in itself," that is, beyond our observations and models of it. The act of measurement can be considered to render the observed and the observer parts of a new composite system, constituted by the "observer" and the "observed" causally interacting with each other.

Another way to illustrate the notion that we cannot know what underlies our observations and models, even in science, can be framed in terms of the predictive coding theory in neuroscience (Friston, 2010; Hohwy, 2013). This account implies that our consciousness is a model of reality, generated by the brain to predict observations and thereby to increase the organism's fitness. This happens in a Bayesian inference process where the brain aims to minimize surprise or free energy (roughly equivalent to informational entropy) through making best guesses about the *hidden causes* of observations. The hidden causes are the external objects that affect our senses, but which we have no direct access to. This account appears to corroborate the Kantian notion of our ignorance of things-in-themselves, even when it comes to science (Swanson, 2016). If our scientific conceptions of atoms and quarks are brain-generated models, how can we know whether they correctly or exhaustively describe reality? As philosopher Dan Zahavi writes:

> It is not altogether clear how [a scientific realist] so confidently can declare that whereas the world of experience is a brain-generated illusion, the world as described by physics, the world of electromagnetic radiation, is the world as it truly is (Zahavi, 2018, p. 53).

Zahavi then examines several possible arguments that the scientific (naïve) realist might make to the conclusion that the world really is as science describes it and argues that these do not hold. However, independently of what one thinks about the correctness of scientific models, or their correspondence with reality, a more fundamental point remains: we should acknowledge that even *correct* models of reality are *still just models*, and reality outside the models remains a mystery. Magritte's pipe in *The Treachery of Images* is a correct picture of a pipe, but it still is not a pipe, and even a correct neuroscientific model of pain is not pain. What predictive coding demonstrates is that *all* our conceptions of reality, scientific theories included, are brain-generated models similar to dreams or hallucinations, a map distinct from the territory. The territory in itself, the nature of reality beyond our models of it cannot be known through representation.

What is nature, then? What is it that our words "nature" and "physical" refer to? As Strawson emphasizes, the word "physical" is the "ultimate natural kind term" (Strawson, 2019). According to the causal-historical theory of reference, currently the dominant position in philosophy of language, a natural kind term *t* refers to *that something* that is instantiated by the actual samples that we refer to as *t*, or to which we are causally linked in the act of naming (Kripke, 1980). Thus, "physical" refers to *that something* instantiated by atoms, electrons, water, neural processes, and so on. Importantly, the causal-historical theory of reference implies that a natural kind term refers to that something, and nothing but that something, even if we did not know its fundamental nature. For example, it could turn out that we have dramatically erred about the nature of water, so that it is not after all H_2O, but rather some exotic, unknown compound XYZ (Putnam, 1975). Even in this case, the term "water" would refer to XYZ and nothing but XYZ, despite our erroneous conception of it as H_2O (on Kripke's terminology, natural kind terms are *rigid designators* and not dependent on our conceptions of their referents). Again, even if our conception of water as H_2O were correct, the causal-historical account implies that its fundamental nature or "essence" can be *more* than what science conveys. Indeed, it can be argued that the term "neural correlate of consciousness" is a natural kind term, and that the fundamental nature of what it refers to is, at least partially, constituted by consciousness.[12]

To illustrate, suppose that you were a subject in a neuroscientific experiment on the neural correlates of color vision. You enter the fMRI device and your task is to imagine different colors. When you imagine red, activation pattern X emerges on the neuroscientist's computer screen. When you imagine blue, another activation pattern Y emerges, and so on. What is the "hidden cause" of the neuroscientist's observations? The neuroscientist does not know, but you do: it is your imaging of red, blue, and so forth. It is your *experience* that produces the image of the activation pattern. You can voluntarily produce different images of neural activation at will, a vivid example of mental causation.[13] This can be taken to suggest that the hidden cause of the

structural realism (Ellis, 2001; Ladyman, 2023). This, however, does not imply that an object would not have an observer-independent nature, the observer being just one of all the entities that an object can interact with. On the typical reading, the term "intrinsic" is contrasted with "extrinsic" or "relational," entailing that thoroughly relational entities like processes do not have intrinsic natures. However, "intrinsic nature of x" can also mean the observer- or modeler-independent nature of x, that is, the way x is independently of being observed or modeled by someone. I have previously called these two readings of intrinsic "strong" and "weak," respectively (Jylkkä, preprint). Crucially, an object can lack a strong intrinsic nature (i.e., completely non-relational nature) if it is a process whose essence is exhausted by its relational properties, but it still possesses a weakly intrinsic nature in the sense that the process is the way it is independently of being observed and modeled. For example, water, conceived of as an interaction process between hydrogen and oxygen, could not exist independently of how hydrogen and oxygen interact, but it can exist and has whatever nature it has independently of being related to a modeler/observer who represents it as "water" or "H_2O." Note that this leads to Tarskian regress, although it is not problematic (Jylkkä, preprint).

12 I have previously argued that the zombie-argument against physicalism dissolves once we notice that the term "neural correlate of consciousness" refers rigidly to consciousness (Jylkkä, 2013). Note that it could be disputed whether "consciousness" or "neural correlate of consciousness" are natural kind terms. For example, Rey (1983) and other eliminativist philosophers have presented arguments that "consciousness" refers to a diverse set of processes instead of a natural kind. However, such diversity *per se* need not entail that the referent is not a natural kind; it could be, for example, a homeostatic cluster kind. For more discussion on this topic, see Bayne and Shea (2020).

13 This is illustrated by a dramatic experiment on brain damaged patients, thought to be in a vegetative state, i.e., lacking consciousness. In an experiment,

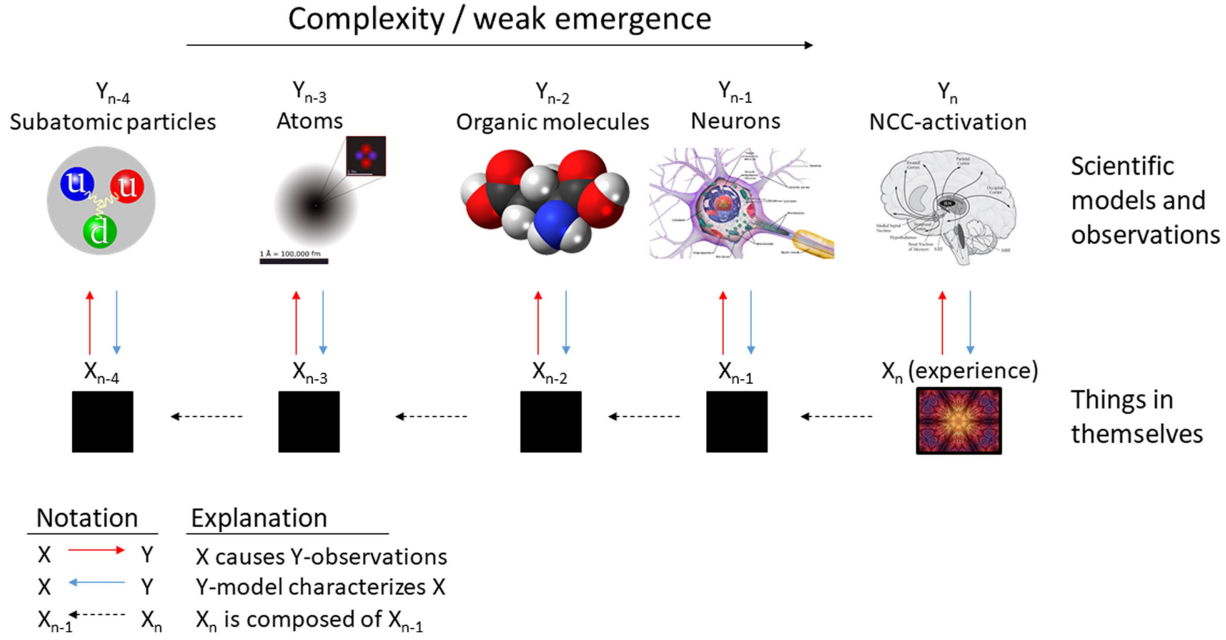

FIGURE 2
Consciousness, depicted here on bottom right as a specific type of experience (X_n), is identical with its neural correlate (NCC on level Y_n) in the sense that the NCC-model represents the experience type. Neuroscientific observations of NCCs are *caused by* the experience X_n and the NCC-models are *about* the experience. However, the scientific observations and models do not yield direct access to the hidden causes of the observations, which in the case of the NCC is the conscious experience. More generally, consciousness (*this*) is the "thing-in-itself" that underlies neuroscientific observations of NCCs. Consciousness can be depicted as a macroscopic process (Y_n) that is based on, or can be reduced to, lower-level processes (Y_{n-x}). These models (Y) are representations of the things in themselves (X). I only have direct access (at least normally) to the single physical process that is my consciousness, hence the black boxes. However, assuming that strong emergence is impossible, there is a continuum between consciousness (X_n) and its constituents (X_{n-x}), implying that the constituents of consciousness, including the ultimate physical entities, are of the same general kind as consciousness. Adapted from Jylkkä and Railo (2019).

fMRI-data *is* your consciousness. Indeed, this is what a materialist identity theory would say: if consciousness is *identical* with its neural correlate, then what we refer to as "neural correlate" from the outside *is* consciousness, when considered from the internal or subjective perspective. What makes the two, the objective and the subjective perspective, appear so different is that the former is a *model* of the latter. It is subjective consciousness that neuroscientific models of its "neural correlates" are *about*; it is subjective consciousness that *produces* scientific observations of its physiological mechanisms (Jylkkä and Railo, 2019).[14] Thus, in the case of consciousness we can have direct access to what underlies the scientific pointer readings, unlike – or so it appears – in the case of any other processes in the universe (Figure 2).

In sum, it can be argued that through representing reality, we are left in ignorance about the representation-independent nature of reality, or what reality is in itself. This representation-transcendent nature of reality can be considered as its "fundamental nature," as referred to in the Core: it is beyond all observation and representation. This presents a tentative answer to the easy problem of mysticism (EP1). Moreover, we can know this fundamental nature of reality directly, at least in the case of our own experience: it is *this* process here and now, happening as I write these words. I know my consciousness through *being* it, not merely through introspectively representing it. This reasoning may pave the way to answering the hard problem (HP), although the problem is still to show how one's own experience could reveal the nature of reality at large, beyond one's own consciousness or brain.

4.4 Unitary vs. relational knowledge

Scientific knowledge, as all representational knowledge, can be considered as *relational* in that the representation is *about* its object, the two being separate (Jylkkä, 2022). For example, my experience that there is a cup on the table is *about the cup itself*, the hidden cause of my observation, to which I have no direct access to, and which I merely represent in my consciousness, or know through interaction with it.[15]

one such patient was asked questions and was instructed to imagine playing tennis if the answer is "yes," and to imagine navigating in their home if the answer was "no." These mental imagings could be detected as distinct activation patterns in fMRI. To the researchers' surprise, the patient could correctly answer the questions (Owen et al., 2006).

14 For example, when a subject X imagines red in fMRI, it is the experience of X that underlies the NCC_{red} observations made by another subject Y, that is, the neuroscientist looking at the fMRI scans.

15 Although I rely on the duality between representation and the represented to make my point, the relationship between the two is complex. For example, in visual perception I directly interact with the perceived object: the photons reflected from the cup affect my retina and visual cortex, and microsaccades in my eyes continually modify the way the cup is reflected on the retina.

As to all entities in the world besides my own consciousness, my access is relational and limited to the "pointer readings," that is, models and observations. What underlies them, considered independently from the human process of observation and modeling, is a mystery; hence the black boxes in Figure 2. However, it can be argued that I can know my own consciousness directly through *being* it, in a unitary way.[16] I am not *related* to my consciousness, I *am* my consciousness. Consciousness is *this*, the sound of Mozart's piano sonata, the sensation of the body, the taste of coffee. Although these experiences are expressed in terms of a subject having the experience ("I" hear the music, "I" sense my body, "I" taste the coffee), the division between subject and object can be considered as artificial. There is merely the experience of music happening in the here and now, it is *this*. Both my conception of myself as a subject, and the music as a distinct "object" are all experiences in a single, unified consciousness, *this*. All my experiences are *in this consciousness* (i.e., parts or modifications of *this*) and thus they cannot be the *objects* of consciousness, when by "consciousness" we mean consciousness in its totality (i.e., what happens here and now, *this*). Notice that this does not preclude the possibility of reflectively or relationally knowing our experiences. In reflection, it can be considered that one part of consciousness (e.g., a higher-order thought) takes another part (lower-order sensation) as its object, as in reflecting on the taste of the coffee. However, in addition to reflectively knowing the taste, we can also know the taste simply through tasting, non-reflectively. Note that we non-reflectively know even the process of reflection taking place. One arguably knows that they are reflecting without the need to reflect on their act of reflection; denying this would lead to infinite regress where one would never know that they are reflecting. I know that reflection is *this* process here. When we attend to consciousness in its totality, we see that subject and object, the reflection and the reflected, are all in one consciousness (*this*), which we know unitarily through *being* it. There is simply the flow of consciousness in the here and now.

Consciousness in its totality is always unitary, however I often do not notice this unity because I am focused on what I perceive as individual objects, distinct from myself. There is the coffee which I can sip and the keyboard which I write on. However, I can also choose to focus on my consciousness as a totality, *this*, and see that this is unitary. When I look at my conception of myself, I notice that it is nothing but an experience in consciousness; when I look at my perception of the cup, I see that it is just a sensation. They are all parts of *this*. From the cognitive perspective it could be said that the self is a generative model produced by the brain to enable functioning of the organism in the environment (Letheby and Gerrans, 2017). When the organism perceives "self" as distinct from "external" objects, it can hunt some objects and reproduce with others, and this could not take place without perceiving subject and object as distinct. However, experiences of the self and other, subject and object, are nothing but brain-generated models, and can be argued to be accidental, not essential to consciousness. Consciousness can also take place without such models, as demonstrated by psychedelic experiences where the models can be considered to dissolve (Carhart-Harris and Friston, 2019). However, it is not necessary for the self-model to dissolve in order to see the unitary character of *this*. In meditation, be it psychedelically assisted or not, we can attend to the totality of what we experience, seeing that it is an undivided whole (and paradoxically, then there is no "I" that sees the totality, but just the totality, *this*). This does not amount to an "ego death," at least not in the radical sense of collapse of the self-model, which is often experienced as deeply frightening. Even when the subject and object do not radically dissolve into each other, one can see that they are both interconnected parts of the same unitary consciousness, *this*.

I have argued previously that this type of unitary knowledge is demonstrated most vividly by cases of unitary consciousness in psychedelic and mystical experiences, where the commonly experienced subject-object division vanishes due to the collapse of the self-model (Jylkkä, 2022). This point is also emphasized by Forman (1993), who uses the concept *knowledge by identity* to refer to how one can know a pure conscious event that lacks all content. However, I take it that unitary knowledge is present in *all* experience, although it is most vivid in unitary experiences (be they internal or external, to follow Stace's terminology). For example, Michael Pollan describes his psilocybin experience as follows:

> [I] lost whatever ability . . . to distinguish subject from object, tell apart what remained of me and what was Bach's music . . . I became a transparent ear, indistinguishable from the stream of sound that flooded my consciousness until there was nothing else in it (Pollan, 2018, p. 254).[17]

Although in this example there is no "subject" that knows the "object," no "Michael Pollan" who experiences the music of Bach, there appears to nevertheless be *knowledge*. Something *happened* in what we refer to as "Michael Pollan" during a specific temporal duration, and this *happening* was knowledge. Pollan could have referred to this knowledge-constituting process as "this" at the moment it took place to somehow ostensively capture its unitary nature (a gesture similar to the facial expression of awe), but in order to know the experience, Pollan need not consider it as "this" or as *anything* (it could be said that the experience is *no-thing*). It is difficult to characterize this process conceptually because the syntax of language operates with subjects, predicates, and objects. In unitary knowledge or *this*, one knows without knowing anything, and without there being anyone who knows. Unitary knowledge is not *about* anything; it is simply the

Moreover, I can grab the cup and take a sip of coffee, which inhibits my adenosine receptors, making me more alert. This is a constant interaction process, and I am part of it; it is *this*. In other words, there is no clear distinction between representation and object. However, the term "representation" can be used to emphasize that the perception of the cup is a brain-dependent process, which is shaped by our nervous system, in addition to the cup.

16 Unitary knowledge is similar to Forman's (1993) "knowledge by identity," but for him the notion applies merely to pure conscious events that lack content. By contrast, I take it that unitary knowledge is present in *all* experience.

17 It could be objected that Pollan's experience is nevertheless *about* the music. However, from the subjective perspective it is not about anything; it is "about" the music only when it is so *modeled* by another subject, or Pollan himself at a later time. It is the subjective perspective which is crucial here, as only first-person experience can constitute unitary knowledge. It makes no difference whether the experience is realized solely inside the brain, or in interaction between the brain and some external processes.

happening of an experience in the here and now; it is pure awareness.[18] Thus, it is different from what Russell called knowledge by acquaintance, which he defines as the most direct *relation* a subject can have to an object (Russell, 1910, p. 108). Although experiences of ego dissolution most clearly demonstrate the notion of unitary knowledge, it is plausible that we *always* know consciousness in this unitary way; as some Zen scholars put it, the everyday mind is already the "enlightened" mind. *This* is knowledge of what experiences feel like. *This* is knowledge that requires no concepts, *this* is not *about* anything (i.e., *this* is non-intentional), *this* is non-reflective.[19]

It is worth noting that unitary knowledge is quite different from knowledge as traditionally conceived. It could be objected that due to its radical differences with conceptual or representational knowledge, it does not deserve to be called "knowledge" at all. However, I take it that unitary knowledge is the most fundamental type of knowledge: it is simply consciousness and can be argued to be a prerequisite for all other types of knowledge (see Forman, 1993). Another possible objection to unitary knowledge is that it is "encapsulated" and private, and therefore cannot inform (conceptual) representations. However, this objection would be based on a misunderstanding of what unitary knowledge is. It is simply consciousness in the here and now, which from the naturalistic perspective can be considered as a causal process in the brain. Thus, it can be causally linked to other processes in the brain, such as the cognitive-representational system. An experience E (i.e., a piece of unitary knowledge) can be the object of a representation R, and while R necessarily fails to capture what E is independently of being represented as R, there can nevertheless exist a causal link between E and R. For example, I can remember my experience of cycling to work, which I unitarily knew as I was cycling, but which now is merely the object of my present cognition.

5 Mystical-type insight and naturalism

I have argued that there is a sense in which reality can be said to have an ultimate nature: it is the nature of reality in itself, beyond our representations and models of it. Thus, it is is non-accessible by science, which is limited to representing objects. This ultimate nature can be considered as unitary in the sense of substance monism: everything that exists are forms of a single type of substance or process, or what we model as the "physical." Science merely represents reality based on "pointer readings" and does not afford us insight into the nature of reality as it is beyond our representations and observations. This idea of Kantian humility can be elaborated in line with naturalism, and one possible way to do that is in terms of Naturalistic Monism. Moreover, I have argued that we can know our own consciousness in a direct, non-representational, non-conceptual, non-intellectual, and unitary way simply through being it: it is *this*, what happens in the here and now every moment.

We have arrived at an important semi-conclusion: *This* can be considered to reveal the ultimate (i.e., representation-independent) nature of reality, but only for the part that is my consciousness, or its neural correlate. In other words, *this* already amounts to mystical-type knowledge where we know the fundamental nature of reality directly, through being one with it – albeit only for the part of reality that is my consciousness (or specific types of neural processes). And by *this* I do not mean any exceptional experience, but simply *experience* in the here and now: this process of writing and reading, thinking, sitting, hearing the music. Now the question is, what is the role of psychedelics in all this? It can be argued that psychedelics facilitate seeing the nature of consciousness in itself, or *this*. Although *this* is present every moment, we often do not notice it, and psychedelics can facilitate becoming aware of *this*, thus facilitating mystical-type knowledge of the fundamental (i.e., representation-independent) nature of reality.

Mystical-type experience and psychedelics may facilitate acknowledging the limits of our models of reality, and to become aware of the intrinsic nature of consciousness. On the neurocognitive level, psychedelics arguably loosen high-level beliefs or "priors," enabling increased bottom-up information flow (Carhart-Harris and Friston, 2019). The loosening of priors could even lead to what can be called *model collapse*, or the bypassing of habitual patterns of thought and perception. This can involve the collapse of our models of consciousness and reality. Psychedelics could thus enable us to better see the ineffable nature of consciousness as it is in itself (*this*), that is, to become aware of the nature of consciousness beyond our reflective models of it. This is most vividly illustrated in unitary experiences, where the subject-object division collapses altogether. Note, however, how language leads us astray here. Strictly speaking, in in a unitary experience there is no "us" who become aware "of" consciousness as it is in itself; rather, there happens what could be conceptualized as the *becoming of this*: entering a state of consciousness where the habitual models do not apply, and only ineffable consciousness remains. Another way to formulate the process would be to say that when there is no longer any model M such that consciousness could be conceived of *as* M, then what remains is simply consciousness in itself as a totality, which we know through *being* it rather than through modeling it. It remains unanswered how exactly everyday consciousness differs from *this* (consciousness in itself), and following some Zen scholars, it could be argued that there is no difference: we cannot help but *being* consciousness in itself every moment, because consciousness in itself simply is the totality of one's experiences. Nevertheless, there seems to exist a difference between *this* and our innumerous representations *of* this – and notice that, strictly speaking, even the representations are part of *this*. How to formulate *this* remains an open question, and answering it is made difficult by the fact that language is necessarily dualistic: there is the word and the referent, and the syntactic structure that differentiates between subject, predicate, and object. However, in direct experience these limitations can arguably be transcended, which enables the becoming of *this*. Psychedelics can facilitate attaining this unitary state of consciousness, or it could also be said that psychedelics "amplify" *this* (Jylkkä, 2022).

It could be argued that the "becoming of this" takes place through becoming aware of the limits of our models. Through model collapse, psychedelic or mystical-type experiences can show the limits of words

18 By "pure awareness" I do not mean consciousness void of sensory contents or "forms," but instead awareness that is not *of* or *about* anything. It is awareness which knows itself without reflection, without duality.

19 For a more extensive discussion of *this*, see Jylkkä, (2022). See also Forman's (1993) discussion of knowledge by identity, which is very similar to my notion of unitary knowledge, although Forman considers knowledge by identity to be present only in pure conscious events.

and representations and show how our models of reality are a map, distinct from the territory. Psychedelic or mystical-type experience can lead us to become aware that our notions of, for example, reality as "physical" or mind as "neural process" or "predictive coding" are all just concepts in our minds, leading to the question: what are the entities referred to by these terms in themselves? It could be said that psychedelics lead to a global *cognitive defusion*,[20] where we see our models of reality for what they are: a map that is distinct from the territory. Another way to formulate this point is that typically our models of reality are *transparent* and act like a lens through which we see reality. In psychedelic experience, by contrast, the models may become more *opaque*, enabling us to become aware of them *as* models. However, being conscious *of* models *as* models is still a dualistic mode of consciousness where we are limited to representing, but it can be a crucial step in the becoming of *this*. Similar to a Zen koan, seeing models *as* models can lead to seeing *all* modeling as futile. Through clearly seeing how mind cannot attain itself, and through realizing that trying to attain the mind by using the mind leads to infinite regress, we can come to notice that there is no point in trying to grasp the nature of the mind. There is no point in attempts to understand *this* because *this* has been present all along. We have always directly known *this* part of reality since we are it.[21]

In sum, psychedelics may facilitate us to see our models *as* models and to acknowledge their limits. This can be considered as a *negative epistemic benefit*: we do not know the nature of reality beyond our models, it is a mystery. Moreover, psychedelics may facilitate the *positive epistemic benefit* through enabling us to become aware of *this*: to know consciousness in a unitary and direct way without modeling it. This can be taken to afford us direct access to the ultimate nature of reality insofar as that reality takes the form of human consciousness.

5.1 Tackling the hard problem

Through model collapse and cognitive defusion, psychedelic experience (or mystical experience generally) can lead us to ask: what *is* the physical? Then we can come to realize that *this* is the physical, or at least one instance or modification of it. Even if this enables a glimpse only to one specific form of the physical as it is in itself, this already entails a major epistemic achievement, as it enables us to unitarily know at least a part of the fundamental nature of reality (i.e., the nature of reality beyond models and conceptions about it). However, even if *this* is the nature of *this* part of reality, why would it yield direct access to the nature of reality at large? This is the hard problem of mysticism. How could it be approached?

At the minimum, it appears that the insight that *this* is part of the fundamental nature of reality allows for the mystical-rational *inference* about the fundamental nature of the rest of reality, based on physicalistic premises. If consciousness is indeed a neural process in the brain, it is smoothly based on lower-level constituents in a process of weak emergence. The neural correlate of consciousness (i.e., consciousness as it is modeled by science) is constituted by the activity of individual neurons and synaptic processes, which are biochemical processes that can be reduced to how individual molecules and atoms interact. Ultimately, the neural correlate (i.e., consciousness) is nothing but a very big cloud of quarks interacting in a specific way, shaped by evolution. Thus, whatever the quarks are in themselves must be of a nature *continuous* with human consciousness (Figure 2). This can be taken to lead to a panpsychist or even idealistic view of the intrinsic nature of fundamental physical reality (Strawson, 2006; Jylkkä, 2016, 2022). This, however, is a rational argument, whereas the mystic claims to gain *direct access* to the fundamental nature. How could this be possible, if at all?

Stace (1961) acknowledges the hard problem (though not by this name) and proposes several possible solutions to it. One he considers as his "strongest argument" (p. 203) and it focuses on empty or pure consciousness that is void of content. For the sake of argument, we may presume that pure consciousness is possible, although this is disputed (see Jones and Gellman, 2022, §4). Stace's argument can be called the *argument from no distinction*:

> [I]f the undifferentiated unity [in a pure conscious event] is the pure unity of the individual self, then there is no *principium individuationis* on which can be based a distinction between one pure self and another. Therefore, we cannot stop at the individual ego, but are logically compelled to pass on to a Universal Self. I regard this as my strongest argument (p. 203).[22]

The argument can be reformulated as follows:

> P1. In empty consciousness there is nothing to distinguish the "subject" from reality at large (i.e., there is no *principium individuationis*, PI)
>
> P2. If nothing distinguishes between the subject and reality at large, then the subject is identical with reality at large (by way of identity of indiscernibles)
>
> C. Thus, in empty consciousness the subject is one with reality at large.

In other words, if a pure conscious event has no PI, then nothing can distinguish it from the rest of reality. To illustrate, it could be held that reality consists of a substance that takes different forms (e.g., that of human consciousness), and when there is no specific form, there is only the underlying substance, which is unitary. The argument appears to be valid, but on closer examination there is a hidden premise between P1 and P2, which can be formulated as follows:

> P1.5. If X is experienced to be empty (i.e., without PI), then X *is* empty (i.e., without PI).

20 *Cf.* Harris (2006, p. 6). Cognitive defusion is a central notion in commitment and acceptance therapy (ACT) but it stems from the wider mindfulness literature and can be applied outside the clinical context.

21 For an excellent introduction to *this* from a Zen perspective, see Watts (1957).

22 The argument appears in different formulations through Stace's book; see, e.g., pp. 110–111.

This premise can be disputed: if an experience is experienced to lack properties, it may not follow that it truly lacks properties. From a naturalistic perspective it can be argued that any experience, even an empty one, is still a brain process and thus distinct from the rest of reality. For example, Metzinger (2020) argues that a pure conscious event is a Bayesian representation of tonic alertness, that is, a brain process clearly distinct from the rest of reality. It is unclear what it could mean, from the naturalistic perspective, for an experience to be truly without individuating properties. Arguably, the mystic would need to literally *become* a fundamental physical process, such as a quantum field. This appears to be quite unlikely, given that the brain is a wet and noisy environment where the quantum processes quickly decohere. On the other hand, this naturalistic objection to P1.5 could be criticized for presupposing the primacy of science in deciding whether a phenomenon has properties or not. If, by contrast to naturalism, it is experience that reveals the ultimate nature of reality, then it could be argued that an experience that lacks all phenomenal content *is* truly empty and, thus, lacks PI. In other words, the mystic might argue that P1.5 is indeed true. The argumentation in this case would become a *status quo* where the question pertains to the fundamental premise: whether to prioritize science or experience in the first place.

Direct insight into the ultimate nature of reality could be considered as the Holy Grail of mystical experience and psychedelic-facilitated mysticism. It may be too ambitious, if by "reality" we mean *all* of reality. However, psychedelics and mystical-type experiences generally could provide more modest, but still substantial, epistemic benefits. Through being conscious, we gain a glimpse of the reality beyond our representations, and psychedelics could be considered to widen this view (Figure 3). Psychedelics literally expand consciousness through increasing the possible shapes it can take, enabling forms of consciousness that radically differ from everyday experience. Given that experiences are forms of reality, psychedelics enable us to unitarily know a wider range of forms of reality than is possible in non-altered consciousness. In other words, psychedelics expand unitary knowledge through enabling more varied forms of consciousness. Of particular interest is the case of empty or pure consciousness, which might be most radically different from everyday consciousness, showing the possibility of consciousness without any content or phenomenal form (assuming that such experiences in fact can take place; see Jones and Gellman, 2022). The possibility of such experience could be taken to show that consciousness does not require complex cognitive processes and could be a fundamental aspect of nature. Again, even if such experience would not reveal the ultimate nature of reality, it reveals how radically exotic forms of consciousness there can exist. This can be considered as a substantial epistemic benefit. The knowledge thusly gained can be considered as mystical-type, as it reveals something about the fundamental nature of reality: through widening the state-space of consciousness, it expands unitary knowledge.

In sum, it can be argued that psychedelic or mystical-type experiences can enable substantial increases unitary or mystical-type knowledge about the fundamental nature of reality, even if they could not reveal the fundamental nature of *all* of reality. Consciousness provides us with a glimpse into the fundamental nature of reality, and psychedelics could widen that view through expanding the forms that consciousness can take. Based on that glimpse, the mystic may intuit that that the ultimate nature of reality at large could be characterized as "some kind of light," "universal love," or even "God." However, as is the case with most metaphysical conceptions of reality, there is no way of proving or disproving such ideas if they are conceptually consistent and compatible with what science tells us about the world. However, even if mystical-type conceptions of reality can be *inspired* by psychedelic or mystical-type experiences, I have argued that it is far from clear how the experience could *justify* any all-encompassing metaphysical views.

It is worth noting that, in addition to specifying how the mystical insight could reveal the nature of reality at large, the hard problem also involves elaborating the relationship between the mystical insight and conceptualizations of the insight. The problem is how a non-conceptual, direct insight can be translated into a conceptual representation. The problem is emphasized by the thesis that the ultimate nature of reality is its representation-independent nature: how could any representation capture the representation-independent nature of reality? Indeed, this is logically impossible. All representations are merely, as it were, images or reflections of reality formed in our minds, distinct from the reality in itself. This emphasizes the ineffability of the mystical insight, and indeed the ineffability of all experience. However, this does not entail that the mystical insight, or any experience for that matter, could not *inform* conceptual representations, or be the *object* of representation: from the naturalistic perspective, all experiences are causal processes that can interact with other processes, such as the cognitive system. The point is simply that when we reflect or represent an experience, the experience becomes "more" than it was prior to reflecting on it, and the representation fails to fully capture its nature as it was prior to reflection. More extensive discussion of this issue is beyond the scope of the present paper.

6 Conclusion

Some naturalist philosophers have argued that psychedelic mystical-type insights are incompatible with naturalism and therefore false. In contrast, I have argued that the Core thesis of mysticism, claiming that there is a unitary nature of reality beyond sense impressions, can be compatible with naturalism and its main component physicalism, when physicalism is conceived of in terms of Naturalistic Monism. Once we become aware of our (scientific) models of nature as merely models, we can see that there are many models of the same underlying reality. Indeed, psychedelics can bring about this insight through cognitive defusion, that is, by enabling us to see our models of reality *as* models, distinct from reality in itself. This can be considered as the main *negative* philosophical lesson of the mystical-type experience. Moreover, psychedelics can help us to see consciousness as it is in itself, through collapsing our reflective models of consciousness and enabling us to simply be aware in the here and now. Psychedelics also enable consciousness to take more varied forms, which broadens the glimpse we have of the fundamental nature of reality, insofar as experiences are part of reality in itself. I have argued that we can at least partially know the ultimate nature of reality through *being* part of nature, by consisting of the same fundamental entities and processes that physics models. It is at least *possible*, something not ruled out by our best knowledge of the world, that the ultimate nature of reality is as the mystic describes it. However, it is far from clear how mystical-type metaphysical conceptions about all of reality could be justified by mystical-type experiences.

In sum, the metaphysical claims of the mystic may be consistent with naturalism (i.e., the easy problem may be solvable), but the

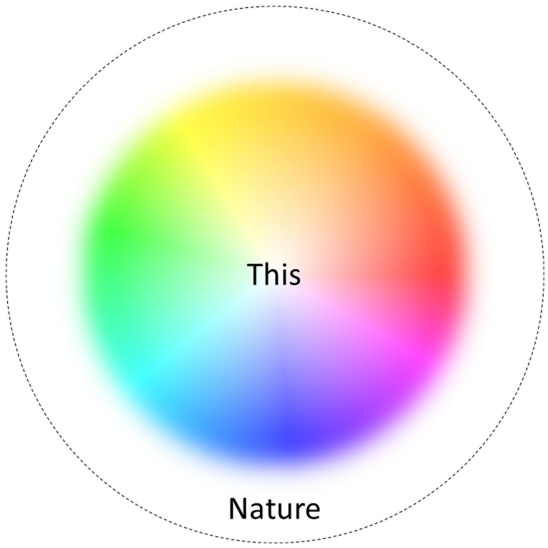

FIGURE 3
The whole of nature is represented as the white sphere, which can take different forms, represented as the colorful sphere. Human consciousness (*this*) is one such form, which we unitarily know through being it. Stace's argument from no distinction entails that in a pure conscious event, the individuating forms of consciousness become dissolved, leading to direct contact with the reality at large: the colorful sphere becomes dissolved into the white one. However, even if such complete dissolution were impossible, psychedelic and mystical-type experiences can enable *this* to take more varied forms than is possible in non-altered consciousness, enabling an expansion of unitary knowledge.

epistemological claims may not be (i.e., the hard problem might be unsolvable). However, even if the hard problem could not be solved, this does not render psychedelic-inspired metaphysical accounts about the ultimate nature of reality pointless. Eventually, *all* metaphysical conceptions of reality are beyond verification, and mystical-type conceptions are not an exception. Mystical-type insights may inspire or facilitate novel ideas about the nature of reality, but it is improbable that they could provide a shortcut to universal metaphysical truths. It is important to note that non-verifiability pertains even to the traditional naturalistic thesis that reality ultimately consists of dead matter that is void of consciousness or value – this thesis cannot be proved or disproved any more than the mystical-type thesis that God or universal consciousness is the ground of being. In any case, mystical-type experiences can constitute an *increase* in knowledge about the fundamental nature of reality, even if they could not *completely* reveal it.

I take it that the negative point of mystical-type insight – namely that we do not know the ultimate nature of reality, at least through observation, science and representation – is *the* most important philosophical implication of the experience, as it demonstrates the limits of our rational knowledge and fosters a sane and epistemically humble attitude toward the world. The realization of our conceptions of reality as *just* conceptions, artifacts of the human mind, can facilitate a more tolerant and less dogmatic attitude, where we do not conflate our words with objects. It is our shared human condition to be limited organisms in an unknown universe, trying to grasp it the best we can. Even if direct communion with the ultimate nature of all of reality were possible, that would be an ineffable, non-conceptual insight that does not vindicate dogmatic faith in any conceptual representations. Psychedelics amplify the importance of distinguishing our conceptions of reality from reality in itself. This point of caution applies to the mystic and naturalist alike – no one can claim that their conceptual representations capture the ultimate nature of reality.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

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Conflict of interest

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References

Allais, L. (2015). *Manifest reality: Kant's idealism and his realism*. New York: Oxford UP.

Audi, R. (1995). *Cambridge dictionary of philosophy*. Cambridge: Cambridge UP.

Barrett, F. S., Johnson, M. W., and Griffiths, R. R. (2015). Validation of the revised mystical experience questionnaire in experimental sessions with psilocybin. *J. Psychopharmacol.* 29, 1182–1190. doi: 10.1177/0269881115609019

Bayne, T., and Shea, N. (2020). Consciousness, concepts, and natural kinds. *Philos. Top.* 48, 65–83. doi: 10.5840/philtopics20204814

Blofeld, J. (1958). *The Zen teachings of Huang Po: On the transmission of mind*. New York: Grove Press.

Carhart-Harris, R. L., and Friston, K. J. (2019). REBUS and the anarchic brain: toward a unified model of the brain action of psychedelics. *Pharmacol. Rev.* 71, 316–344. doi: 10.1124/pr.118.017160

Chalmers, D. (1995). Facing up to the problem of consciousness. *J. Conscious. Stud.* 2, 200–219.

Chalmers, D. (1996). *The conscious mind: In search of a fundamental theory*. Oxford: Oxford UP.

Chalmers, D. (2019). "Idealism and the mind-body problem" in *The Routledge handbook of Panpsychism*. ed. W. Seager (New York: Routledge), 353–373.

Dennett, D. (1991). *Consciousness explained*. Boston: Little, Brown and Co.

Eddington, A. (1929). *The nature of the physical world*. Cambridge: Cambridge UP.

Ellis, B. (2001). *Scientific Essentialism*. Cambridge: Cambridge UP.

Forman, R. K. C. (1993). Mystical knowledge: knowledge by identity. *J. Am. Acad. Relig.* LXI, 705–738. doi: 10.1093/jaarel/LXI.4.705

Frankish, K. (2017). *Illusionism as a theory of consciousness*. Exeter: Imprint Academic.

Friston, K. (2010). The free-energy principle: a unified brain theory? *Nat Rev Neurosci* 11, 127–138. doi: 10.1038/nrn2787

Goff, P. (2017). *Consciousness and fundamental reality*. Oxford: Oxford UP.

Harris, R. (2006). Embracing your demons: An overview of acceptance and commitment therapy. *Psychotherapy Australia* 12, 2–8.

Hiddleston, E. (2019). Dispositional and categorical properties, and Russellian monism. *Philos. Stud.* 176, 65–92. doi: 10.1007/s11098-017-1006-2

Hietanen, J., Turunen, P., Hirvonen, I., Karisto, J., Pättiniemi, I., and Saarinen, H. (2020). How not to criticise scientism. *Metaphilosophy* 51, 522–547. doi: 10.1111/meta.12443

Hohwy, J. (2013). *The predictive mind*. Oxford: Oxford UP

Howell, R. (2015). The Russellian Monist's problems with mental causation. *Philos. Q.* 65, 22–39. doi: 10.1093/pq/pqu058

Huxley, A. (1954). *Doors of perception*. New York: Harper & Row.

Jackson, F. (1986). What Mary Didn't know. *J. Philos.* 83, 291–295. doi: 10.2307/2026143

James, W. (1902). *The varieties of religious experience: A study in human nature*. London: Longmans, Green and Co

Jones, R., and Gellman, J. (2022). Mysticism. Stanford encyclopedia of philosophy. Available at: https://plato.stanford.edu/entries/mysticism/

Jylkkä, J. (2013). Natural concepts, phenomenal concepts, and the conceivability argument. *Erkenntnis* 78, 647–663. doi: 10.1007/s10670-012-9368-5

Jylkkä, J. (2016). Mind as an intrinsic property of matter. *Philos. Investig.* 39, 15–37. doi: 10.1111/phin.12100

Jylkkä, J. (2022). "Mary on acid: experiences of unity and the epistemic gap" in *Philosophy and psychedelics*. eds. C. Hauskeller and P. Sjöstedt-H (London: Bloomsbury Academic)

Jylkkä, J., and Railo, H. (2019). Consciousness as a concrete physical phenomenon. *Conscious. Cogn.* 74:102779. doi: 10.1016/j.concog.2019.102779

Kind, A. (2015). "Pessimism about Russellian monism" in *Consciousness in the physical world: Perspectives on Russellian monism*. eds. T. Alter and Y. Nagasawa (Oxford: Oxford UP), 401–421.

Ko, K., Knight, G., Rucker, J. J., and Cleare, A. J. (2022). Psychedelics, mystical experience, and therapeutic efficacy: a systematic review. *Front Psychiatry* 13:917199. doi: 10.3389/fpsyt.2022.917199

Kripke, S. (1980). *Naming and necessity*. Harvard: Harvard UP.

Ladyman, J. (2023). Structural realism. Stanford encyclopedia of philosophy. Retrieved from https://plato.stanford.edu/entries/structural-realism/

Langton, R. (2001). *Kantian humility: Our ignorance of things in themselves*. Oxford: Oxford UP

Letheby, C. (2021). *Philosophy of psychedelics*. Oxford: Oxford UP

Letheby, C., and Gerrans, P. (2017). Self unbound: ego dissolution in psychedelic experience. *Neurosci. Consciousness*, 1–11. doi: 10.1093/NC/NIX016

Levine, J. (1983). Materialism and qualia: the explanatory gap. *Pac. Philos. Q.* 64, 354–361. doi: 10.1111/j.1468-0114.1983.tb00207.x

Lutz, M., and Lenman, J. (2018). Moral Naturalism. Stanford encyclopedia of philosophy. Available at: https://plato.stanford.edu/entries/naturalism-moral/

Masters, R. A. (2010). *Spiritual bypassing: When spirituality disconnects us from what really matters*. Berkeley, CA: North Atlantic Books.

Merriam-Webster, . (n.d.). Mystical. Available at: https://www.merriam-webster.com/dictionary/mystical

Metzinger, T. (2020). Minimal phenomenal experience: meditation, tonic alertness, and the phenomenology of "pure" consciousness. *Philosophy Mind Sci* 1, 1–44. doi: 10.33735/phimisci.2020.I.46

Montero, B. (2015). "Russellian physicalism" in *Consciousness in the physical world*. eds. T. Alter and Y. Nagasawa (Oxford: Oxford UP), 209–223.

Nagel, T. (1974). What is it like to be a bat?. *Philosophical Review* 4, 435–450. doi: 10.2307/2183914

Odin, S. (2022). "The unconscious in zen and psychedelic experience" in *Philosophy and psychedelics*. eds. C. Hauskeller and P. Sjöstedt-H (London: Bloomsbury Academic)

Orr, M. (2006). What is a scientific world view, and how does it bear on the interplay of science and religion? *Zygon* 41, 435–444. doi: 10.1111/J.1467-9744.2005.00748.X

Owen, A. M., Coleman, M. R., Boly, M., Davis, M. H., Laureys, S., and Pickard, J. D. (2006). Detecting awareness in the vegetative state. *Science* 313:1402. doi: 10.1126/science.1130197

Pahnke, W. N. (1964). First impressions of first LSD experience. Available at: erowid.org/exp/103042

Papineau, D. (2020). Naturalism. Stanford encyclopedia of philosophy. Available at: https://plato.stanford.edu/entries/naturalism/

Pollan, M. (2018). *How to change your mind*. New York: Penguin Books.

Putnam, H. (1975). The meaning of "meaning.". *Minn. Stud. Philos. Sci.* 7, 131–193. doi: 10.1017/CBO9780511625251.014

Revonsuo, A. (2006). *Inner presence: Consciousness as a biological phenomenon*. Massachusetts: MIT Press.

Rey, G. (1983). "A reason for doubting the existence of consciousness" in *Consciousness and self-regulation*. eds. R. Davidson, G. Schwartz and D. Shapiro (New York: Plenum), 1–39.

Richards, W. A. (2016). *Sacred knowledge: Psychedelics and religious experiences*. Columbia: Columbia UP.

Rosen, G. (2017). "Metaphysical relations in metaethics" in *The Routledge Handbook of Metaethics*. eds. T. McPherson and D. Plunkett (New York: Routledge), 151–169.

Rovelli, C. (2021). *Helgoland*. London: Allen Lane.

Russell, B. (1910). Knowledge by acquaintance and knowledge by description. *Proc. Aristot. Soc.* 11, 108–128.

Russell, B. (1927). *The analysis of matter*. London: Kegan Paul.

Sanders, J. W., and Zijlmans, J. (2021). Moving past mysticism in psychedelic science. *ACS Pharmacol. Transl. Sci* 4, 1253–1255. doi: 10.1021/acsptsci.1c00097

Sjöstedt-H, P. (2022). "The white sun of substance: Spinozism and the psychedelic amor Dei intellectualis" in *Philosophy and psychedelics*. eds. C. Hauskeller and P. Sjöstedt-H (London: Bloomsbury Academic)

Smith, H. (2000). *Cleansing the doors of perception: The religious significance of Entheogenic plants and chemicals*. Boulder: Sentient Publications.

Stace, W. T. (1961). *Mysticism and philosophy*. London: MacMillan.

Stone, J. A. (2012). Spirituality for naturalists. *Zygon* 47, 481–500. doi: 10.1111/j.1467-9744.2012.01279.x

Strawson, G. (2003). "Real materialism" in *Chomsky and his critics*. eds. M. A. Louise and N. Hornstein (Malden, MA: Blackwell), 49–88.

Strawson, G. (2006). Realistic monism: why physicalism entails Panpsychism. *J. Conscious. Stud.* 13, 53–74.

Strawson, G. (2019). "The Mary-go-round" in *The knowledge argument*. ed S. Coleman (Cambridge: Cambridge UP), 118–140.

Swanson, L. R. (2016). The predictive processing paradigm has roots in Kant. *Front. Syst. Neurosci.* 10:79. doi: 10.3389/fnsys.2016.00079

Tononi, G., Boly, M., Massimini, M., and Koch, C. (2016). Integrated information theory: from consciousness to its physical substrate. *Nature reviews neuroscience*. 17, 450–461. doi: 10.1038/nrn.2016.44

Urmson, J. O., and Ree, J. (1989). *Concise encyclopedia of Western philosophy and philosophers*. London: Unwin Hyman.

Watts, A. (1957). *The way of Zen*. New York: Pantheon Books.

Watts, A. (1962). *Joyous cosmology*. New York: Pantheon Books.

Zahavi, D. (2018). Brain, mind, world: predictive coding, neo-Kantianism, and transcendental idealism. *Husserl Stud.* 34, 47–61. doi: 10.1007/S10743-017-9218-Z

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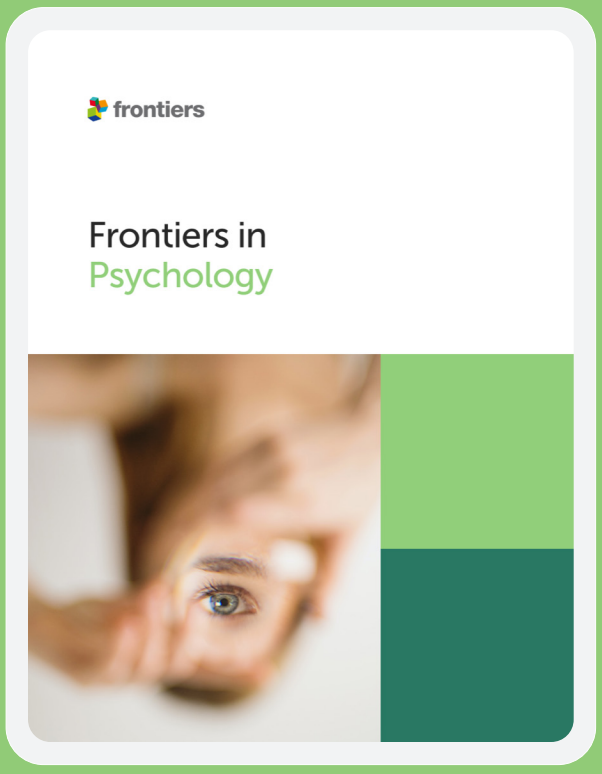

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