

Feminist fabulations in algorithmic empires

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Published in

Frontiers in Communication



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ISSN 1664-8714
ISBN 978-2-8325-6686-2
DOI 10.3389/978-2-8325-6686-2

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Feminist fabulations in algorithmic empires

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Citation

Naji, J., Kettioui, A., Fox, I., eds. (2025). *Feminist fabulations in algorithmic empires*. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-8325-6686-2

This project has been funded by the UKRI-AHRC and the Irish Research Council under the 'UK-Ireland Collaboration in the Digital Humanities Research Grants Call' (grant numbers AH/W001667/1 and IRC/W001667/1). We hereby state publicly that neither the UKRI-AHRC nor the Irish Research Council has had any editorial input on the articles included in the Research Topic, thus ensuring that all aspects of the project are evaluated objectively, unbiased by any specific policy or opinion of either the UKRI-AHRC or the Irish Research Council.

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RECEIVED 27 June 2025
ACCEPTED 08 July 2025
PUBLISHED 24 July 2025

CITATION
Naji J, Kettoui A and Fox I (2025) Editorial:
Feminist fabulations in algorithmic empires.
Front. Commun. 10:1655359.
doi: 10.3389/fcomm.2025.1655359

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Editorial: Feminist fabulations in algorithmic empires

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KEYWORDS

feminist, colonialism, algorithm, empires, digital landscape, fabulations

Editorial on the Research Topic Feminist fabulations in algorithmic empires

The prevalence of digital and algorithmic systems in everyday human subjectivities prompts an urgent critical analysis of these systems that considers not only their sociotechnical aspects, but also their influence on cultural and communicative factors. This is because contemporary digital and algorithmic systems reinforce the offline world's white supremacist, ableist, cisnormative and heteropatriarchal hierarchies, reflecting historical empire-building, while also sustaining the coloniality of modernity (see [Mignolo, 2007](#)). In online spaces, borders have formed that reflect traditional offline biases and normative categorizations that oftentimes only serve a narrow and already privileged demographic. Furthermore, techno-solutionism and digitization are widely employed in border policing, war, and migration, with states justifying their deployment of these surveillance and violent technologies through claims that they increase efficiency and accuracy, despite widespread evidence to the contrary ([McGregor and Molnar, 2023](#); [Broeders, 2007](#)). Contemporary techno-social digital systems and algorithms commonly foregrounded do not reflect the diversity of human existence; however, digital practitioners are appropriating digital tools and technologies in increasingly innovative ways, discovering creative and unique methods of digital resistance, examples of which are outlined in this Research Topic. This Research Topic draws on the existing groundwork of the Full Stack Feminism in Digital Humanities (FSFDH) research project (<https://fullstackfeminismdh.pubpub.org/>), funded by UKRI-AHRC and the Irish Research Council under the “UK-Ireland Collaboration in the Digital Humanities Research Grants Call” (grant numbers AH/W001667/1 and IRC/W001667/1).

The Research Topic *Feminist fabulations in algorithmic empires* seeks to recognize and explore cultural methods of survival and resistance within existing biased, market-driven digital empires. Most notably, [Hartman \(2008\)](#) offered the term “critical fabulation” in her article “Venus in Two Acts” with reference to a critical reading of the archive that seeks “to tell an impossible story and to amplify the impossibility of its telling” ([Hartman, 2008](#)). Fabulation refers to the way we tell stories and it has recently re-emerged as a useful concept with which to re-emphasize and recenter human multiplicities within contemporary technocentric digital systems. Prioritizing storytelling and embodiment helps to disrupt dominant perspectives, histories, technologies, and practices. For example, the term “provenancial fabulation” serves to “decenter ‘the archival gaze,’” which is understood to be white, cis, powerful, and male ([Lapp, 2021](#), p. 120), challenging notions of “singular, central creator bodies—to instead account for difference, contention, and the entangled nature of feminist lives and histories” (*ibid.*). This kind of pluralistic and fluid framing cultivates positions that focus on the ways in which digitally-mediated storytelling can be a mode of challenging biases that manifest at all levels of the development and

data life cycle of digital technologies—from design to implementation, from processes of datafication to dissemination, and from the machine code right to the infrastructure layers above—and that are reflective of wider societal injustices and inequalities.

For example, the study by Hill, *Speculative Black Feminist Epistemologies of Worlding Building for XR* looks beyond Cartesian models and understandings of space for XR to invoke methods of storytelling. Hill suggests unrestricted modes of world mapping for Black female bodies that would not be possible in real life. Here we see the virtual realm offering us potential for more freeing virtual embodiments, which have previously only been explored in linear stories.

In “Feminist HCI and narratives of design semantics in DIY music hardware,” Jawad and Xambó Sedó examine DIY musical instruments created by women builders. Jawad and Xambó Sedó’s explorations uncover a unique mode of storytelling that emerges in the process of instrument building when incorporating a Feminist HCI approach.

In the article entitled “Algorithmic Agency and Instagram Content Moderation: #IWantToSeeNyome,” Willcox examines how human and algorithmic content moderation conspire to limit the agency of Instagram content creators, particularly those with non-normative body types, such as Black, fat or queer. Willcox’s article uses the social media campaign, #IWantToSeeNymone, as a case study to explore affective responses to the moderation of the content created by such marginalized online influencers.

Shukla explores the interplay of power and politics in AI systems and argues for the use of hermeneutic reverse engineering as a framework for critical analysis in her article, “Investigating AI Systems: Examining Data and Algorithmic Bias Through Hermeneutic Reverse Engineering.”

In the study “I’d rather be a cyborg than a celebrity: Black feminism in the digital music industry” Carmichael-Murphy elucidates, through Haraway’s (1991) cyborg concept, how Black feminist artists appeal to technological embodiment in order to untangle the idea of celebrity. The limits therein offer possibilities for the creation of both assuming and subverting the notion of celebrity in response to “intersecting oppressions.”

The contribution by Putnam “On (not) becoming machine: countering algorithmic thinking through digital performance art” is an auto-ethnographic reflection on her artwork, *Ghost Work* (2023) and *Friction* (2023). She sets the algorithm in motion to unravel its poetic affordances for the creation of “feminist fabulations.” In her piece, Putnam unpacks “data colonialism” and works toward “alternative logics” that encourage maintaining rather than solving conflicting affective responses at the receiving end.

In “Reanimating Feminist Archives: Ethics and Praxis at the interstices of ethics” Webb et al.’s work at the intersection of ethics, “rematriation” and language, addresses the ethics of care and risk involved in reanimating feminist archives. For these feminist scholars, reanimation is not a mere quick technical exercise for preserving the past. Rather, it involves a “slowing down” that brings to life buried voices, knowledge, and ontologies, enabling them to speak to us and with us.

In “DIY academic archiving: mischievous disruptions of a new counter-movement,” Karels et al. challenge the unproductive curatorial practices in research governance and the norms of either destroying data or making it “open,” which is “often not open enough.” What Karels et al. call “DIY archiving” calls for a productive “politics of refusal” in which coding is exploited as a subversive, mischievous and playful mechanism that ensures the “care-full risk” of curating qualitative social science research.

In “Feminist Fabulations as ‘Fighting Back,’” Hickey-Moody and Wilcox position digital feminist fabulation as radical creativity for collective transformation. They look at the work of Christine Yahya (@pink_bits), a bisexual, feminist artist and graphic designer living and working in Sydney, Australia. Christine Yaha’s work offers diverse perspectives on the non-normative world and can be seen as a practice of feminist digital fabulation. In Yaha’s work, shadowbanning and content removal have led to a process of feminist fabulation, as they take content reduction as a call to create images that trouble regulatory boundaries.

The *Frontiers in Communication Feminist fabulations in algorithmic empires* Research Topic serves as a minor intervention to the growing body of timely and vital scholarship in the fields of intersectional feminist digital humanities; critical DH, AI and data studies, and decolonial digital and archival practices, along with movements and projects such as the Distributed AI Institute (DAIR), the Design Justice network, Tech for Palestine, the Algorithmic Justice League, and Data Feminism, among others. This Research Topic will form part of the Full Stack Feminism in Digital Humanities toolkit of digital resources, which also includes other critical reflections, frameworks for analysis, and an archive, in addition to practical guides for employing intersectional feminist research and methods in DH.

Author contributions

JN: Project administration, Resources, Methodology, Formal analysis, Investigation, Writing – review & editing, Funding acquisition, Conceptualization, Writing – original draft. AK: Writing – original draft, Conceptualization, Methodology, Investigation, Writing – review & editing. IF: Writing – review & editing, Writing – original draft.

Funding

The author(s) declare that financial support was received for the research and/or publication of this article. This work was funded by UKRI-AHRC and the Irish Research Council under the “UK-Ireland Collaboration in the Digital Humanities Research Grants Call” (grant numbers AH/W001667/1 and IRC/W001667/1).

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The author(s) declared that they were an editorial board member of Frontiers, at the time of submission. This had no impact on the peer review process and the final decision.

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OPEN ACCESS

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RECEIVED 27 November 2023
ACCEPTED 19 December 2023
PUBLISHED 09 January 2024

CITATION
Jawad K and Xambó Sedó A (2024) Feminist
HCI and narratives of design semantics in DIY
music hardware. *Front. Commun.* 8:1345124.
doi: 10.3389/fcomm.2023.1345124

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Feminist HCI and narratives of design semantics in DIY music hardware

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Feminist Human-Computer Interaction (HCI) integrates gender, diversity, equity, and social justice into technology research and design, fostering a more inclusive and socially aware technology landscape. This article explores the design semantics of ten Do-it-Yourself (DIY) musical instruments created by women builders. Design semantics refers to the associations conveyed by designed objects so as to identity, emotions, performance or the environment and their sensory qualities such as shape, size, touch or vision. Together these associations and qualities can establish design narratives that influence the way meaning is ascribed. We conduct an analysis of these instruments to answer the question of how fabulations of design semantics, through the lens of feminist HCI principles, can reshape our understanding of gender bias in object design within the realm of DIY musical instruments constructed by women builders. Our investigation uncovers a feminist narrative taking shape as we found out that DIY instruments design contributes to the fabulation of alternative futures that challenge prevalent current gender expectations associated with commercial music hardware. DIY instruments provide a platform for questioning established gender norms, enabling the development of technologies that embrace diverse perspectives and maintain a technical identity.

KEYWORDS

Feminist Human-Computer Interaction, music technology, design, fabulations, women, Do-it-Yourself, instruments

1 Introduction

Gender stereotypes can be promoted through various artifacts (Livingstone, 1992; van Oost, 2003) and have also been observed in commercial music hardware (Jawad, 2020), potentially reinforcing gender biases and leading to unequal representation. This problem is in line with the principles of Feminist Human-Computer Interaction (HCI), which stresses the importance of considering gender, diversity, equity, and social justice in technology design (Bardzell, 2010).

In contrast to the commercial music hardware, the Do-it-Yourself (DIY) approaches in developing new instruments, showcased in events like New Interfaces for Musical Expression (NIME), the Guthman competition, and the MoogFest, offer alternative ways for exploring music technology. We analyzed 10 instruments from these venues built by women. Through this exploration, alternative narratives have been uncovered that challenge the dominant top-down narratives associated with commercial music hardware. For instance, the promotion of predominantly male gender roles within the music technology industry while overlooking women's contributions as technical experts and producers (Mathew et al., 2016). This opens up space for fabulation.

Fabulations are seen as alternative social relations (Søndergaard et al., 2023, p. 1693) that re-imagine norms, power structures, and relationships in line with feminist approaches. Through this investigation, we sought to address the research question of how fabulations of design semantics (Demirbilek and Sener, 2003), through the lens of feminist HCI principles, can reshape our understanding of gender bias in object design within the realm of DIY musical instruments constructed by women builders.

Feminist HCI counterbalances masculine approaches to and values in technology production, which tend to promote efficiency, individualism, competitiveness, industrial production, and male-dominated sociocultural values. Design semantics refers to the associations conveyed by designed objects so as to identity, emotions, performance or the environment. The objects' materials (Tholander et al., 2012) and sensory qualities such as shape, size, touch or vision can establish design narratives that influence the way of ascribing meaning (Demirbilek and Sener, 2003) to these objects and their agency. By considering the semantics of design, emerging narratives can be examined which can form fabulations. In the search for alternative futures and desirable ways of living, which is also on the agenda of feminist HCI, fabulations can play a crucial role. Cultivating the capacity to envision alternative futures and desirable ways of living is a crucial facet of design (Søndergaard et al., 2023). By engaging in fabulations, existing norms can be reimagined through alternative design semantics, and foster more inclusive and equitable music technology practices.

2 Materials and methods

In our analysis, we utilized the article "Feminist HCI: Taking Stock and Outlining an Agenda for Design" by Bardzell (2010) as a foundation. Bardzell's work was seminal in explicitly focusing on feminist perspectives in HCI. Later work has also investigated gender and its implications for HCI (Stumpf et al., 2020). The article explores the state of feminism in HCI and suggests ways to incorporate feminist perspectives into design practices. A key aspect of the article is Bardzell's development of feminist interaction design qualities, which serve as a framework for characterizing design artifacts. By applying these feminist interaction design qualities to DIY musical instruments, alternative narratives on music technology practices are expected to be revealed. These qualities, namely pluralism, participation, advocacy, ecology, embodiment, and self-disclosure, align with feminist principles and values. Applying this framework, we examined various instruments to understand their significance in relation to these qualities. Among the qualities, pluralism, ecology, and embodiment emerged as particularly meaningful in terms of their outputs. These qualities highlight the importance of inclusivity, environmental awareness, and the embodiment of diverse experiences in the design of new musical interface hardware. By analyzing the instruments through this lens, we aimed to gain insights into how they may contribute to feminist fabulations and semantic design.

Inspired by Reid et al. (2018)'s research on women who build things, we selected 5 of the featured works and added 5 more instruments from NIME, the Guthman competition and MoogFest. The first criterion was that the instruments should be created

by one woman-identified author. Also, they should be in a DIY status that they can be performed with but are not commercially available. Furthermore, we looked for a balance between recycled, newly manufactured and augmented instruments. Augmented instruments refer to acoustic musical instruments or devices that integrate technological enhancements or modifications, which expand their sonic capabilities or create novel modes of interaction. The chronological range mostly spans from 2012 to 2020 (9 instruments), plus an instrument built in 1996. Here we introduce the 10 instruments in alphabetical order. For the analysis we used existing publications and specific performances (see the Appendix for the list of videos used).

We strive for diversity in selecting instrument makers, in line with intersectional feminism, considering multicultural, geographical, and generational factors. We acknowledge, as Bassett et al. (2019) do, the multifaceted intersections of identity, social circumstances, geopolitics, economics, and the environment. Next, we describe each of the ten instruments (see Figure 1 for a graphical representation).

Bell Controller,¹ developed by Stephanie Cheng Smith in 2015, is an Arduino motor-controlled interface for 15 vibration motors and LEDs attached to muted jingle bells. It can be played in installation and performance modes from a mixing desk.

Electronic_Khipu (Cadavid, 2020) is an instrument created by weaving knots with conductive rubber cords to encode sound compositions. It is based on the Andean khipu, an ancient textile computer used for information processing and transmission.

Lori Napoleon's collection called **The Exchange**,² created in 2012, consists of analog synths and sequencers made from old telephone switchboards. The analysis focuses on a comb filter/oscillator module of tabletop size.

GramFX,³ designed by Jassie Rios in 2018, is an augmented gramophone that combines commercial and open-source tools. It utilizes Leap Motion technology for motion capture and Pure Data for effects.

Laser Koto⁴ (Masaoka, 2007), developed by Miya Masaoka in 1996, connects a 21-string Japanese koto to a computer through an Arduino interface with laser beams and sensors.

Ni (2021) created **Mermmy**⁵ in 2020, which is a self-made ceramic pot with embedded contact microphones for sound amplification and processing.

Prism Bell⁶ (Mice and McPherson, 2020), created by Lia Mice in 2019, is a standalone system consisting of pipes with embedded Bela Mini units for sound modeling and synthesis.

1 Stephanie Cheng Smith's Bell Controller webpage: <https://music.stephiescastle.com/works/bell-controller>.

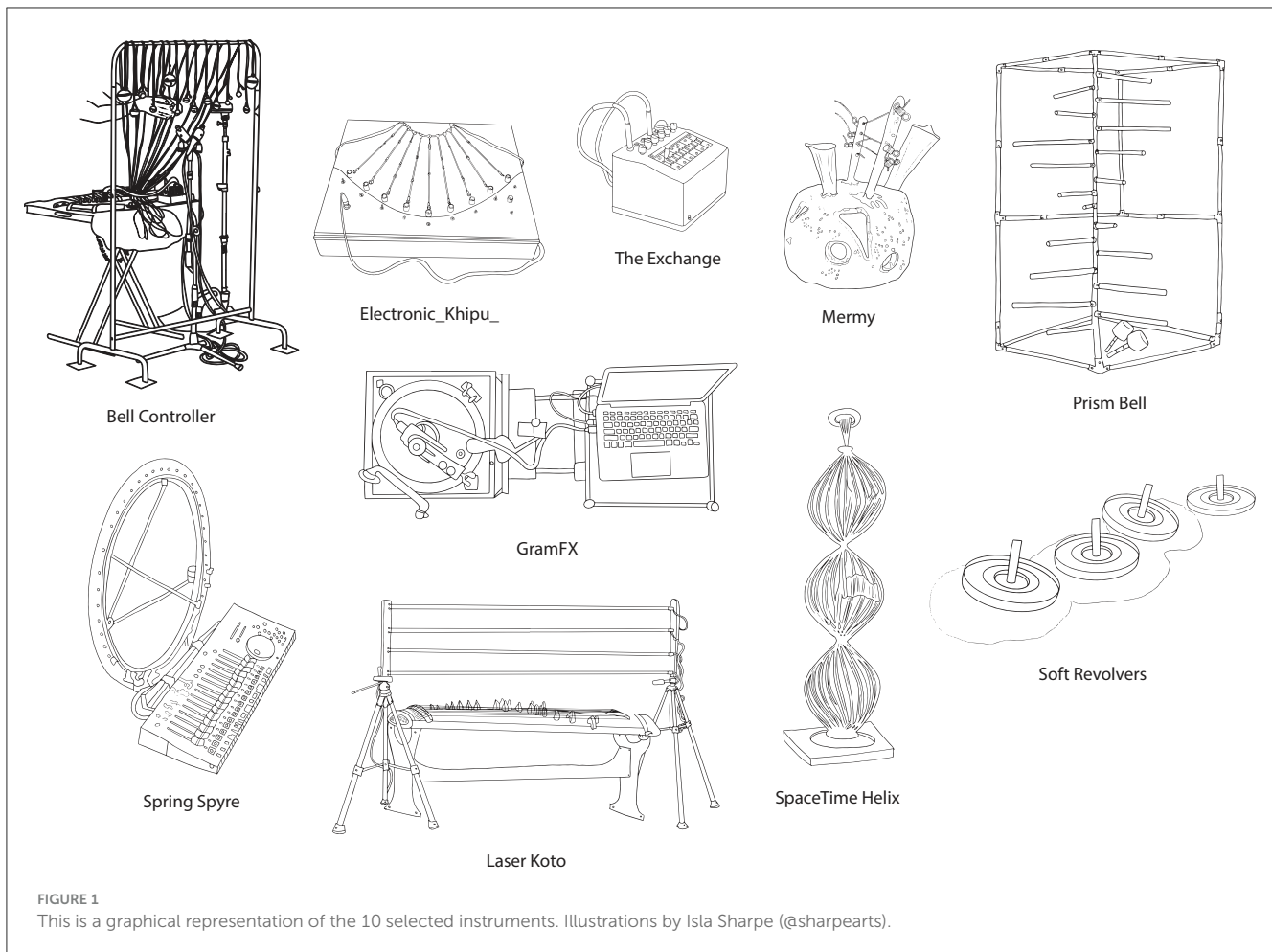
2 Webpage of Lori Napoleon's Instruments: <http://www.meridian7.net/ME7/instruments.htm>.

3 Jassie Rios' GramFX on the Guthman Musical Instrument Competition webpage—2018 Winners: <https://guthman.gatech.edu/history>.

4 Miya Masaoka's webpage: <http://miyamasaka.com>.

5 Video demo of Ni Shan's Mermmy: <https://youtu.be/RgSbQdJMoRo>.

6 Lia Mice's webpage on Prism Bell: <https://www.liamice.com/prismbell>.



Soft Revolvers,⁷ created by Myriam Bleau in 2014, are spinning tops with embedded sensors that trigger sound samples.

SpaceTime Helix,⁸ a kinetic light sculpture by Michela Pelusio created in 2012, features a rotating string attached to a motorized plate, producing sound and controlling additional textile surfaces with MaxMSP.

Laetitia Sonami's **Spring Spyre**⁹ (Fiebrink and Sonami, 2020), developed in 2013, incorporates a metal wheel, three strings, and audio pickups controlled by a Roland PC1600 MIDI controller, with feature extraction and machine learning done using MaxMSP and Wekinator software.

3 Results

In this section, we present the results of our analysis of the instruments across three selected feminist HCI qualities, providing

a detailed account of our findings and highlighting the three patterns that emerged.

3.1 Pluralism

We interpreted the quality of pluralism as emphasizing and recognizing diverse perspectives, experiences, and voices. It encourages the design of instruments that represent the multiplicity of identities, cultures, and backgrounds. Each instrument has a unique approach.

Bell Controller creates a soundscape that evokes the imagery of visual fireflies and the sound of crickets in both performance and installation mode, capturing the essence of a Biosphere. **Electronic_Khipu_** incorporates elements from different cultural traditions, referring to the practices of the former Inca Empire and Andean societies. There is a hybridity that brings together both worlds, western electronic music and ancient traditions. **The Exchange** is the repurposing and upgrading of old telephone switchboards that have enabled the utilization of a popular object for a new function. **GramFX** is an augmented gramophone, a reproduction of a sound device with gestures that produce sound which manipulate tangible objects (e.g., cranking the gramophone) and intangible objects (e.g., activating the effects by moving the

⁷ Myriam Bleau's webpage on Soft Revolvers: <https://www.myriambleau.com/softrevolvers>.

⁸ Michela Pelusio's webpage on SpaceTime Helix: <https://michelapelusio.org/SpaceTimeHelix>.

⁹ Laetitia Sonami's webpage on Spring Spyre: <https://sonami.net/portfolio/items/spring-spyre>.

hands in the air). The instrument has been repurposed so that the device has different ages and musical variations through different types of vinyl play. **Laser Koto** has a hybridity and different ages, as it incorporates elements from different cultural traditions, such as the koto and its cultural heritage in Japan, where it has been played for centuries. This is also found at a technological level, in terms of the invocation of digital play. **Mermmy** is an instrument that incorporates elements inspired by mythology, specifically drawing on the form of a female sea creature, and combines them with advanced technology to create a performer's avatar. **Prism Bell** is a digital instrument with physical qualities, designed so that the timbre of the instrument changes with each piece. The instrument's chromatic scale provides pluralism. **Soft Revolvers** embraces the integration of playfulness in its design, transforming a simple toy into an instrument through the concept of hybridity, merging the act of play with the process of shaping and manipulating sound. **SpaceTime Helix** is an opto-acoustic instrument that constantly changes shape, combining artistic and scientific elements into one experience, as plural time and space are considered. **Spring Spyre** harnesses the power of machine learning to analyse Sonami's performance data, dynamically altering the synthesis process for transition between predictable and unpredictable outputs. The essence of pluralism emerges from the ongoing dialogue between the artist and the algorithm, fostering a rich interaction with the AI system.

3.2 Ecology

We read this quality as emphasizing the interconnectedness of technology and the environment. Especially, what material solution has been chosen for the physical components and hardware of the instrument.

Bell Controller features various surface textures, with the exception of small round sheet metal bells. These bells, equipped with vibration motors and LEDs, emit buzzing sounds. The technology is partly visible and hidden behind the instrument. **Electronic_Khipu_** consists of conductive rubber strings on a wooden plate, arranged like the original khipu's wool strings. The technology serves a technological purpose and allows for knotting interaction, being partly visible and partly hidden. **The Exchange** is an assembly of upcycled telephone switchboard modules, interconnected like guitar pedals, designed for modular synthesis. Its visible buttons and cables integrate into its aesthetic and functionality. **GramFX** is an upcycled gramophone that blends visible and concealed components that can evoke a sense of nostalgia. The addition of motion sensors and cameras introduces a modern twist. **Laser Koto** enhances the traditional koto with laser beams and infrared sensors, creating an augmented interface. The beams form a distinct pattern above the wooden instrument, enhancing visual, and sonic capabilities. **Mermmy** is a minimalist clay pot whose shape exudes warmth and protection. Its concealed technology allows for easy user interaction. **Prism Bell** is constructed from upcycled PVC pipes arranged in an accessible winding configuration. The technology remains concealed, while emphasis is placed on the bells. **Soft Revolvers** has a circular acrylic structure for smooth play, with integrated sensors, some of which are visible. **SpaceTime Helix** features physical and abstract optical

interfaces, evolving from a bright, transparent arcing helicoid. The technology is operated by a sometimes concealed controller. **Spring Spyre** is a vertically aligned metal disk with taut, pliant springs and a compromised console. Its technology is partially visible in its performance, showcasing a minimalistic use of components.

3.3 Embodiment

The approach undertaken considers quality in the ways in which the instruments can support and enhance embodied experiences, taking into account diverse abilities, gender expressions, and cultural practices.

The **Bell Controller**'s expressivity lies in the micro-movements of acoustic objects. A mediated interaction occurs between the objects and the hidden performer behind the instrument. Through the controller and Arduino switchboard, the performer creates a passive and independent environment. The Bell Controller produces high frequencies and rhythmic pauses, utilizing contact microphones to equalize a rich assortment of high and low frequencies. **Electronic_Khipu_** retains the traditional form and interaction in a new electronic interface, allowing for real-time knotting of strings. This technology brings back ancient traditions of calculating and decrypting. Sample-based music is heard, featuring textural and synthetic algorithmic note-based sounds, with low frequencies and slow rhythmic beats. **The Exchange** filter/oscillator modules are hand-sized and emphasize control, merging layers of low to mid frequencies shaped with digital effects. **GramFX** involves manual cranking of the vinyl while engaging with sensors above it, creating immersive experiences with sound effects and a multifaceted range of musical frequencies. **Laser Koto** combines acoustic and laser instruments, allowing the simultaneous playing of both with the two hands. Laser beams trigger various samples, creating a note-based and polyphonic music range. **Mermmy** is played by stroking, plucking, and blowing into it, producing soft and subtle sounds. **Prism Bell** is played with large gestures, that trigger synthesized percussive tones resembling distorted electric guitar strings and bells. In **Soft Revolver**, spinning tops, spun with both hands, invite playful exploration and are linked to synthetic sounds. **SpaceTime Helix** allows the performer to control light frequencies, colors, speed, and sounds manually. The shape of the light sculpture can be manipulated by hand, creating rhythmic textures that integrate harmoniously with the sonified acoustic sounds. **Spring Spyre** consists of intersecting wire coils that can be gently plucked with the fingers, generating a noisy texture combined with a low, steady drone. This instrument facilitates active listening and contemplation.

3.4 Patterns

We understand patterns as recurring challenges to traditional norms of instrument design and musical interaction. Norms can manifest themselves through marketing, physical design or aesthetic preferences. Regarding the physical design for example, some electronic musical instruments have larger, bulkier designs that may exclude individuals who do not conform to stereotypical body types (Spiel, 2021). By understanding these patterns and

their significance, we can explore the transformative potential they hold in reshaping the relationship between performers and their instruments.

1. Reimagining familiar gestures for new musical interfaces:

By repurposing expected interactions and gestures, creations like the Electronic_Khipu_ GramFX, Soft Revolvers, and Prism Bell emerge, forming a significant pattern of reinvention. By reinventing gestures, designers can challenge and reimagine the relationship between the performer and the instrument. This approach promotes inclusivity and empowers the performer to explore new modes of expression, ultimately reshaping the narrative of musical interaction.

2. Repurposing traditional technologies for new musical interfaces: By converting outdated technologies or acoustic instruments into electronic interfaces and enhancing them with a digital layer, innovations such as the GramFX, The Exchange, Electronic_Khipu_, and Laser Koto show how digital augmentation has the capabilities of merging old and new technology. By repurposing traditional technologies, the dominant narrative of technological progress can be challenged and alternative futures explored. This approach promotes sustainable practices and encourages a reevaluation of our relationship with technology, emphasizing values such as cultural preservation and the coexistence of old and new.

3. Promoting round and soft elements: Pattern 3 displays, in the context of new musical interface hardware, a preference for circular and round shapes. It is evident in various creations, including the Spring Spyre, Mermy, Bell Controller, SpaceTime Helix, Soft Revolvers, and GramFX. The preference for round and soft elements can contribute to the envisioning of alternative design aesthetics and narratives. By breaking away from rigid and angular forms, a harmonious association between humans and musical interfaces can be fostered.

4 Discussion

We examined the implications of the feminist HCI qualities, in terms of their design semantics, for potential new narratives that foster fabulations on DIY music hardware made by women builders. We have identified three main patterns that subsequently have revealed a series of observations when reflecting within the scholarship of design semantics and feminist fabulations.

The first pattern was the reimagining of familiar gestures. Amidst fabulations, as “one way of imagining alternative futures that helps foreground critical feminist technoscience” (Søndergaard et al., 2023, p. 3), this approach reshapes the narrative of musical interaction by challenging traditional notions of control and authority. It promotes inclusivity by opening up opportunities for diverse performers with varying backgrounds and abilities to engage with music in their own unique ways. Traditionally, musical instruments have often been designed with a predefined set of gestures and interactions, which can limit the creative expression and agency of the performer.

The second pattern, the repurposing of traditional technologies for new musical interfaces, provides an alternative narrative to the dominant portrayal of technological progress as a linear path. It challenges the assumption that innovation can only be achieved through the constant development of new technologies.

An unquestioned logic of novelty and innovation would often under-scrutinize the impact on environmental sustainability (Masu et al., 2023). Many of these practices shift from the production of new artifacts to the reuse of existing resources.

In the third pattern, overall, rounded and soft lines are more common than sharp lines in seven of the ten selected objects. The use of the circle as the most prominent shape suggests the use of a universal symbol with multiple meanings, including wholeness, infinity, timelessness and cyclical movement, as well as warmth and protection (Dondis, 1974), which has traditionally been connoted as a feminine symbol. In commercial products, although there is a general tendency to favor curved artifacts over angular ones (Westerman et al., 2012), in musical interfaces we find mainly angular shapes (Jensenius and Voldsund, 2012). The preference for round and soft elements can contribute to the envisioning of alternative design aesthetics and narratives that echo circular, sustainable principles.

DIY design constantly challenges binary expectations and disrupts traditional gender narratives (Stewart et al., 2018; Kori and Novak, 2020). According to Rode, in the concept of technology as a male-dominated culture, with its historical bias toward men in design and technological development, “there is a need for technologies that allow for the demonstration of Technical Femininity” (Rode, 2011, p. 379). The design space created by these female builders can maintain a technical identity, as well as their status as technical devices (Rode, 2011). Their practice intersects with computer science, hardware design and instrument making, and thus DIY instrument makers challenge and reshape traditional gender narratives within these fields. It is likely that DIY design faces less pressure to conform to standards and norms. It leaves room for intersecting identities (D’Ignazio and Klein, 2023), like marginalized individuals and communities, to reclaim their voices, access resources and take ownership of their creative processes, challenging traditional hierarchies by empowering their own musical expressions. Hence, the places where music technology is made, whether in companies, cultural institutions or universities, can be challenged (Jawad and Xambó, 2020; Pardue and Bin, 2022).

Applying Bardzell’s (2010) HCI framework to our research on DIY instrument making has revealed a feminist narrative emerging. DIY practices bring fabulation to life, as instrument makers challenge dominant gendered expectations associated with commercial music hardware. This approach offers avenues for reimagining norms, power structures, and relationships. Moreover, it provides a forum to question gendered assumptions, allowing for the creation of technologies that incorporate varied viewpoints and defy conventional gender preconceptions via alternative design semantics.

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

KJ: Conceptualization, Investigation, Methodology, Writing – original draft, Writing – review & editing. AX: Conceptualization,

Methodology, Supervision, Visualization, Writing – original draft, Writing – review & editing.

Funding

The author(s) declare financial support was received for the research, authorship, and/or publication of this article. This research was supported by the project funded by the UKRI-AHRC and the Irish Research Council under the “UK-Ireland Collaboration in the Digital Humanities Research Grants Call” (grant numbers AH/W001667/1 and IRC/W001667/1).

Acknowledgments

We would like to express our sincere gratitude to the following individuals and organizations for their valuable contributions to this research: Izzy Fox for helping us in the submission and editorial process, Dan Morley and William Wright for helping us recruiting an illustrator, and Isla Sharpe for the illustrations.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fcomm.2023.1345124/full#supplementary-material>



OPEN ACCESS

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RECEIVED 03 November 2023

ACCEPTED 19 December 2023

PUBLISHED 11 January 2024

CITATION

Carmichael-Murphy P (2024) I'd rather be a
cyborg than a celebrity: Black feminism in the
digital music industry.
Front. Commun. 8:1332643.
doi: 10.3389/fcomm.2023.1332643

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I'd rather be a cyborg than a celebrity: Black feminism in the digital music industry

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This essay argues that Black feminist artists in the digital music industry embrace cyborg politics to disrupt celebrity conventions in ways that draw attention to the complexity of identity and oppression. I draw attention to Black feminism as a movement for challenging intersecting oppressions, particularly for Black women, as well as a drive to celebrate Black women's contributions to the music industry. Donna Haraway's conceptualization of the "cyborg" can offer significant insight into how artists in the digital music industry transcend boundaries of identity to renegotiate the ideas of celebrity and fame. The cyborg is a fluid being that embraces the interconnectedness and interplay between technology and the body. By embracing cyborg politics, those who occupy space in the music industry and online can resist the commodification of their bodies to machinery alone and retain their humanity in the celebrity machine.

KEYWORDS

cyborg politics, Black feminism, digital music industry, celebrity identity, algorithmic bias

This essay argues that Black feminist artists in the digital music industry embrace cyborg politics to disrupt celebrity conventions in ways that draw attention to the complexity of identity and oppression. Black feminism has been a driving force for resisting intersecting oppressions and celebrating Black women's contributions to the music industry. Haraway's (2000) cyborg concept and politics are beneficial for illustrating the limitations of socially imposed identity categories. By exploring Black feminism in the digital music industry through the lens of the cyborg, how Black feminist artists both occupy and disturb the boundaries of "celebrity" can be critically understood.

Black feminism in the music industry

Black feminism, as a movement challenging intersecting oppression, is deeply rooted in the experiences of Black women. Black feminism has had a significant impact on wider Feminism and Civil Rights movements, by advocating for greater recognition of the ways that Black women experience the intersection of race and gender oppressions, as well as what role factors such as sexuality, class and disability play in sustaining privilege and oppression. Davis' (1999) book *Blues Legacies and Black Feminism* celebrates the works of blues singers Gertrude "Ma" Rainey, Bessie Smith and Billie Holiday for transcending the boundaries of respectability imposed on them by popular culture of the early twentieth century. Davis (1999) outlines music as a foundation for Black feminist thought, encouraging greater appreciation of the ways that performance and lyrics offer insight into historical, social and political

contexts. Events in the mid-1990s significantly influenced the trajectory of Black feminist activism in the music industry. The Civil Right Movement across the 1950s and 1960s, saw artists like Nina Simone and Aretha Franklin use their platform through music, to address issues of racism and racial segregation in their songs and during their performances. During the late 1990s, artists like Queen Latifah, Lauryn Hill, and Missy Elliott began to speak on issues of gender more explicitly in the music industry. Today, Black feminism continues to shape the music industry, with artists such as Beyoncé and Janelle Monáe using their visibility online and in digital spaces to speak on identities and the intersecting oppressions of race, gender and sexuality in popular culture.

Black feminism remains a powerful force for challenging intersecting oppressions, particularly for Black women. Black feminist artists navigate the complexities of representation and exploitation through self-expression. Black feminist artists often confront one-dimensional or race, gender, sexuality, and class stereotypes that the media and popular culture have perpetuated. Black feminism has significantly influenced popular culture, with music artists, literary writers, and film and television directors engaging with social issues pertaining to womanhood and identity at the intersection of race, gender, sexuality, and class. In the music industry, Black feminism has provided a platform for Black women to navigate the complexities of their representation and exploitation, through self-expression and self-definition. Black women's music has long served as a powerful medium for expressing the complexities of identity (Davis, 1999). Black feminists artists such as Nina Simone, Billie Holiday, Aretha Franklin, Queen Latifah, Missy Elliott, Erykah Badu, Lauryn Hill, Janelle Monáe, Little Simz, and many others have embraced music as a means for documenting their experiences and narrative (Brooks, 2021), disseminating alternative narratives about Black womanhood (Chepp, 2015), and contributing to Black feminist collective theory (Hines, 2020).

Cyborg politics and hybrid identity

Haraway's (2000) conceptualization of the "cyborg" can offer significant insight into how artists in the digital music industry transcend boundaries of identity to renegotiate the ideas of celebrity and fame. The cyborg is a fluid being that embraces the interconnectedness and interplay between technology and the body. Embracing cyborg politics empowers those occupying spaces in the music industry to resist the reduction of their bodies to mere machinery. In the digital music industry, the cyborg can be more readily equipped to navigate algorithm empires and embrace technology to redefine their own narratives. Cyborgs in the music industry embrace fluidity and hybridity to occupy a state of constant transformation. In this state, artists are empowered to develop and disseminate multifaceted identities that challenge the technologies of "gender" and "race," as well as the rigid construction of "celebrity." This resistance is important for pushing back against the commodification and objectification inherent to celebrity culture and the digital music industry.

Black feminist music offers insight into cyborg politics in action, as a means for expressing the complexity of gendered and racialized identities. James (2008) suggested that some Black female

artists present themselves as "non-human," embracing cyborg theory to challenge aesthetic norms by pulling together discourses of race, gender, and technology to challenge stereotypes of sexuality and femininity (James, 2008). This is also important for contesting with the music industry as a site of both empowerment and exploitation for Black women, which engages beyond essentialist debates on whether Black women are subjugated or liberated by music videos and celebrated or denigrated by song lyrics. Scholars have credited Missy Elliot for disturbing the boundaries of propriety (Lane, 2011) and performing on the frontiers of "self" to construct new identities (Sellen, 2005). Evident in both her music videos and song lyrics, Missy Elliott challenges language and stereotypes about Black women. The lyrics on her 1999 *She's a Bitch* reclaimed a pejorative term ascribed to assertive women in the music industry. Missy is also well-known for her distorted music videos that represent her body and face in surreal ways, for example, by distorting her lips in the 1997 Hype Williams directed music video for *The Rain (Supa Dupa Fly)*. Lillvis (2023) writes about music video distortion as "technogenesis" and a meeting of technology and post-human identity, which can offer insight into the transformation of self in the sociopolitical environment. Through cyborg politics that challenge essentialist constructions, Black women who occupy space in the music industry can experience and encounter facets of oppression and privilege at the same time.

Black feminist artists and digital spaces

Technology now plays an integral role in the production, distribution, and consumption of music. Black feminist artists have embraced technology to subvert power in the digital music industry, through independent promotion and instantaneous dialogue on social media. Social media and digital platforms have been a particularly significant space for Black feminism in the twenty-first century, providing opportunities to amplify Black women's voices, and issues of discrimination and inequality experienced by those who are racialized and gendered. Through these digital spaces, artists can directly communicate with their audience, presenting multifaceted identities that go beyond the one-dimensional personas often imposed by the media and industry. Artists can confront issues of race, gender, and sexuality, and engage in meaningful dialogues with the public. However, the inherently racialized dynamics of online consumption often require Black women to navigate racial discrimination in online public spaces. For Black women and Black feminist artists, they can occupy spaces of both oppression and expression in the online (Miller et al., 2020).

Although the digital music industry offers potential for democratization and decentralized entrepreneurialism for independent artists, technological advances in the music industry are not necessarily innately "good." Social media plays a significant role in the myths of celebrity identity and expectations to embody experiences relative to race, gender, class and sexuality (Sobande, 2019). Social media, as a technological platform, empowers Black feminist artists to amplify their voices, control their narratives, and connect with the public. This can be helpful for challenging intersecting oppressions in public spaces, and

resisting cultural stereotypes that work to control Black women's image. Historically, stereotypical representations of Black women have been disseminated by print, media, and television, but the Internet means that the dissemination of such images and narrative enables celebrities to have greater control over how their image is disseminated (Nicholson, 2014). Nicholson, 2014 argues that social media sites offer opportunities for Black women to be seen beyond stereotypes.

In the twenty-first century, the intricate relationship between social media and the construction of celebrity identity cannot be easily separated. Through social media, artists have unprecedented access to their audiences, affording an opportunity to shape and control their narratives. For example, as a video-sharing platform, YouTube can make artists more engaging and accessible for their audience (Jennings, 2020). This empowerment is conducive to cyborg politics, as artists can use technology to amplify their voices, challenge stereotypes, and subvert the dominant narratives perpetuated by the industry. While social media empowers artists, it is crucial to acknowledge the dual nature of digital spaces for both challenging and reinforcing cultural stereotypes. Ultimately, access to music through digital spaces is not inherently progressive, as it is intertwined with the capital that underpins the infrastructure of the internet. It is important not to disregard what role the internet has played in the distribution of Black women's image and sound in ways that reinforce cultural stereotypes.

Although celebrities may present alternative imagery of Black women, reworking images does not alone dismantle the harmful stereotypes (hooks, 2016). Campt (2017) argues that it is necessary to consider what happens to images after the initial event of sharing, and from this, we can learn more about what happens to the distribution of images and who profits from their circulation. In this sense, it is important to recognize how GIFS have contributed to the "memeification" of Black women's pain through digital caricatures (Stravens, 2021), or how virality leads to "digital fatigue" in ways that exhaust the meaning of the content (Goldschmitt, 2022). Capitalist algorithms on music streaming platforms often determine visibility and representation in ways that sustain cultural stereotypes (Werner, 2020a,b). Interrogating the internet's role in the movement of capital is important for identifying ways to resist bias in online spaces (Noble, 2016). This is necessary for working to ensure that the digital music industry does not become another "intersectional empire" (Lovato, 2021).

Musser (2020, online) writes that "the virtual allows us to connect flesh to labor to landscape," which makes the online an important site for understanding how digital spaces can sustain oppression. Scholars have highlighted what role digital streaming services have played in reinforcing gender inequality in the music industry by typically privileging those who are identified as "white" and "male." For example, by privileging "traditional" music types, overrepresenting male artists and reinforcing stereotypes of masculinity to listeners (Eriksson and Johansson, 2017; Chodos, 2019; Werner, 2020a,b). How users respond to algorithms varies, but it could be argued that digital music streaming can reinforce oppression in both material and discursive ways. For example, Freeman et al. (2022) found that Spotify listeners developed

a relationship with the system, expressing trust or reliance in algorithms. As a video streaming platform, Meyerend (2023) found that Black Netflix users felt that algorithms sustained racial identities for users and that this restricted their agency on the platform by presenting them with constructions of Blackness.

Challenging the celebrity machine

The concept of the cyborg can enrich the understanding of celebrity identity in the music industry and the hybridity of occupying spaces of privilege and oppression. In recent years, intersectional scholarship has focused on ways that Black women resist oppression in online spaces and digital media (Bailey and Trudy, 2018; Noble, 2018). Yet, while intersectionality has documented the complexities of identity, discrimination and privilege, it is less well-utilized for interrogation of the political economy (Taylor and Johnson, 2020) which is necessary for understanding how Black women's labor in the digital music industry comes to be commodified and appropriated. However, the notion of the cyborg can bring depth to intersectional discourse by encouraging closer consideration of what role technology plays in the processes of identity and identification. This has been evident in the works of Janelle Monáe, whose embodiment of the cyborg throughout their musical outputs with titles such as *The ArchAndroid* (2010), *Electric Lady* (2013), and *Dirty Computer* (2018). Yates-Richard (2021) outlines Monáe's commitment to embodying the cyborg to destabilize the category of "human" for the promise of virtual transcendence. Yates-Richard (2021, p. 35) describes Monáe's praxis as "black sonic cyberfeminist aesthetics."

There has been recurrent debate on whether Black women are empowered or objectified when they access or gain capital through the music industry. But it is well-documented, that Black women in the music industry encounter systemic racism, industry exploitation, and pressure to conform to narrow beauty standards. In particular, pay disparity and exploitative contracts that enable record labels and management companies to profit from Black women's labor cannot be separated from the historical exploitation of Black women as "economic producers." This necessitates greater emphasis on economic factors as a significant organizer of Black women's lives (King, 1988). By documenting their labor struggles in the music industry, Black feminist artists grapple with the hybridity of privilege and oppression, to deconstruct and reconstruct celebrity identity. In doing so, Black feminist artists resist "divine, mechanical, and biological terror" in search of freedom (James, 2013, p. 63).

Many scholars have engaged with and offered a constructive critique of Haraway's (2000) presentation of the cyborg. Tilton (2006) argues that a limitation of the cyborg is its fixity on the materiality of machines and the internet. Given the historical construction and exploitation of Black women as economic producers (King, 1988) and money-making machines, there is the risk that the notion of the cyborg reinforces cultural traditions that portray Black women's labor as inevitably profitable. As an alternative, Tilton (2006) presents the idea of the "cybergoddess," as a wireless being that can engage with humanity in both on and offline spaces. Puar's (2020) article, draws attention to the potential

for those who may embrace the intersectional assemblage of the “cyborgian-goddesses”; that is to reclaim both ungended and gendered narratives at once. For Puar, the cyborgian-goddess has political potential for destabilizing attempts to categorize the body into discreet and essentialist categories. Gunn (2019) views the cyborg identity as an opportunity to embrace “being built, shaped, taken apart, and re-imagined in the face of oppression” (The Centre for Black Brown Queer Studies, 2021). It could therefore be considered that the cyborg concept is conducive to recognizing the idea of “celebrity” as in flux, and the transformative potential of digital spaces for deconstructing the celebrity identity.

Scholars have highlighted that the very notion of celebrity is rooted in an oppressive entertainment industry that profits off stereotypes and anti-Blackness (Allen and Miles, 2020). Black women celebrities are often portrayed by cultural critics as a “threat” to feminism (Gay, 2014). Yet, focusing interrogation on what and how privileges are afforded to those who are identified by the public as “celebrity” or for engaging in “celebrity feminism” may offer greater insight into the ways that celebdom sustains anti-Blackness in public spaces. It is essential to adopt a more nuanced perspective on celebrity feminism, one that challenges the boundaries of identity. To do so, we must examine the ways that Black feminist artists challenge the constraints imposed by traditional celebrity structures. For example, Nikki Lane celebrates the ways that Missy Elliott employs language to shift the boundaries of what is considered socially “acceptable” in music culture. Lane (2011, p. 776) writes that Missy Elliott occupies space beyond the “boundaries of propriety in order to exist outside of the racist-sexist narratives that define Black womanhood.” To do so, cyborgs occupy ontological spaces that destabilize constructions of race and gender in the public sphere (Bey, 2016). In this transformative space, generated through cyborg politics, Black feminist artists disrupt celeb-dom and the imposition of identity boundaries. This requires a more nuanced reading of celebrity feminism that works to disturb the boundaries of humanity (Yates-Richard, 2021).

Black feminism and cyborg performance

Black feminism and cyborg politics in the digital music industry offer the potential to destabilize notions of celebrity and fame to grapple with humanity in both online and offline spaces. Recognizing identity as a *doing* rather than a *being* enables a greater appreciation of the transformative potential of machines for disrupting the categorization of humans (Lu et al., 2022). The cyborg’s willingness to embrace the hybridity of technology and humanity challenges the conventional of “fame” by blurring the boundaries between public persona and private self. For example, during online performances, Black women can disrupt the celebrity industry machine by enacting privacy in public spaces. Leikeli47’s commitment to conceal her face during performance is a clear example of enacting privacy in the music industry (Carmichael-Murphy, 2023). By doing so, artists challenge issues of representation to illustrate the dynamic nature of oppression. The intersectional nature of Black women’s experiences necessitates

engagement with the complexities of identity and historical constructions of the body as material culture. By doing and undoing race, gender, sexuality, and class in the public sphere, Black feminist artists disturb the essentialist categorization of humans, to reveal the limitations of celebrity as well as the politics of representation. Black feminist artists challenge representations of identity that “both duplicate and displace the human” (McMillan, 2015, p. 226). This doing and undoing of identity can render the documentation and dissemination of Black women’s experiences to the public a “double-edged sword” (Reynolds, 2002).

In summary, this essay has delved into the intersection of Black feminism, the cyborg concept, and celebrity identity within the music industry. The argument is that for Black feminist artists, celebdom is not necessarily a space from which they seek identification, but rather an arena where they can interrogate the processes of identification. Through the lens of Haraway’s (2000) cyborg concept, this essay illustrates how Black feminist artists in the music industry embrace technology to disturb the boundaries of identity in ways that engage with the hybridity of both occupying and subverting the notion of “celebrity.” Cyborg politics offer insight into the lived and virtual realities of representation in the digital music industry.

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

PC-M: Writing – original draft.

Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

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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OPEN ACCESS

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RECEIVED 08 December 2023
ACCEPTED 10 January 2024
PUBLISHED 23 January 2024

CITATION
Putnam EL (2024) On (not) becoming
machine: countering algorithmic thinking
through digital performance art.
Front. Commun. 9:1352628.
doi: 10.3389/fcomm.2024.1352628

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On (not) becoming machine: countering algorithmic thinking through digital performance art

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Regular engagement with technologies through habit enables these to infiltrate our lives as we are constituted through our machines. This provocation underpins the digital performance art works *Ghost Work* and *Friction*, which involve creative repurposing of everyday digital technologies as poetic operations, presenting an embodiment of algorithms that engages with their performativity. The execution of these performance algorithms are interventions into data collection, crafting feminist fabulations in the algorithmic empire of what Couldry and Mejias refer to as data colonialism. Using methods of data feminism in conjunction with Hui's philosophy of technology, these performances cultivate aesthetic experiences that are multifaceted instances of data visceralization. *Ghost work* and *Friction* use artistic idioms thick with meaning, reflexively engaging with processes of contingency and recursivity present in human-technological relations. The resulting digital performances are aesthetic experiences that are affective and ambivalent, introducing alternative logics to hegemonic algorithmic thinking that emphasizes extraction and optimization.

KEYWORDS

digital performance art, algorithmic thinking, poetic operations, data feminism, data visceralization

1 Introduction

Media theorist Wendy Chun describes how “through habits users become their machines” (Chun, 2016, p. 1). This provocation underpins my approach to technical systems in the performance artworks *Ghost Work* (2023) and *Friction* (2023). As a performance and digital artist, I engage human and technological relations with the human body as interface. The body functions as creator of an artwork as well as existing as medium. I develop a score of performance actions—an algorithm—that is implemented as a creative repurposing of everyday digital technologies, presenting an embodiment of algorithms that engages with their performativity. This process instigates interventions into data collection, crafting feminist fabulations in the algorithmic empire of what Nick Couldry and Ulises Ali Mejias refer to as data colonialism, or “an emerging order for the appropriation of human life so that data can be continuously extracted from it for profit” (Couldry and Mejias, 2019, p. xiii). In this paper, I present analyses of these performances, bringing together principles of data feminism (D'Ignazio and Klein, 2020) with Hui's (2019, p. 114) philosophy of technology, specifically his notion of algorithmic thinking, or the realization of

“general recursive thinking” with the rise of digital technological systems. The resulting works are aesthetic experiences that are affective and ambivalent, engaging with the recursion and contingency of human-technological relations through idiosyncratic, alternative logics.

2 Algorithms of/as performance

I use the term algorithm to describe the series of steps followed in the execution of a performance. An algorithm is commonly understood as a set of instructions that lead to a particular outcome. However, Gillespie (2016) describes how the term algorithm evokes different meanings within different contexts. While in computing, the concept of algorithm takes on literal meaning related to problem solving in software development, within the social sciences, the term becomes nuanced, challenging the seeming objectivity of the term. For instance, social scientist and African American studies scholar Benjamin (2019) argues how even determining what problems get addressed encompasses a range of judgements rooted in human preference and bias. Bucher (2018) emphasizes how the significance of algorithms comes through their enactment, which is material, relational, and cultural, shaping how people engage with the world. Algorithms are not simply a set of instructions, but define operational logic: a way of thinking.

The algorithms of my performances set forth the steps to be followed presented in pseudocode (see [Supplementary material](#)). The outcomes of the described actions are not known in advance, with each performance functioning as a unique iteration of the algorithm’s execution (Chun, 2011). This type of creative and critical engagement with computation through practice-based research is what cardenas (2022, p. 29) refers to as poetic operations, or when “algorithmic poetics use the performativity of digital code to bring multiple layers of meaning to life in networks of signification.” Instead of just critiquing algorithmic operations, digital code becomes the means of producing alternative engagement.

My approach to artistic production and this subsequent analysis engages with methods of data feminism. Catherine D’Ignazio and Klein (2020) define data feminism as an approach to data science and ethics informed by intersectional feminism. Their method provides an alternative to the current dominant approach to data analysis that emphasizes large-scale data collection, objective presentations, and an unquestioning faith in statistical analysis devoid of context. They propose seven core principles of data feminism, of which I engage with several in the discussed performances: elevation of embodiment and emotion, consider context, and make labor visible. I also engage in methods of data visceralization, which are a means of extending beyond the visual as “representations of data that the whole body can experience, emotionally as well as physically” (D’Ignazio and Klein, 2020, p. 84–85).

I produce art from the position of an artist-philosopher, which Smith (2018) proposes as an artist who does not just reflect on philosophy through art, but acts as a poetic logician, where art becomes the means of practicing philosophy. My method for producing an art work tends to first focus on the medium as means

of inquiry and production, where I act as instrument in arts-based research (Eisner, 1981). When writing about my own work, as in this article, I reflect on the process of production and execution, unpacking theoretical insights that arise, expand ideas and draw explicit connections to the theoretical groundings of the work. My artistic practice is also influenced by my situated experiences and knowledge as a white, non-gender conforming woman and American citizen who has been living in Ireland since 2013. Ireland, while part of the European Union, is a former British colony. As a performance artist whose body functions as both instrument and medium, such qualities of my situated identity are evident within the performances.

3 Ghost work: body as extractable

In *Ghost work*, I act as the interface between two computer systems ([Figure 1](#)).¹ One computer generates a series of five animations that are played on a television monitor. These are created in random order, with each animation running for a random period of time between 1 and 5 min. I have assigned an exercise to four animations and one for rest, and I perform the exercise in accordance to what animation is being generated. I wear a Bluetooth heart rate monitor that connects to a second computer where a slit-scan camera captures my movements. My heart rate controls the color of the video and frequency of sound that this second computer generates. Every time something goes wrong with the technology, I scream “Crash” and fix it. Once resolved, I scream “Override” and return to exercising. The performance ends after 1 hour. This performance was presented twice (23 and 25 January 2023) at Emerson Contemporary Media Gallery in Boston, MA, USA.

The title *Ghost Work* refers to Gray and Suri (2019) description of the hidden labor that powers current digital technologies. Despite hyped-up claims of automation and artificial intelligence, humans are vital to the structure and functioning of computation. Much of this labor is hidden beneath the interface, partitioned as microtasks that are distributed through crowd work platforms, increasingly being carried out in the global south (Gray and Suri, 2019; Crawford, 2021; Perrigo, 2023). *Ghost work* is a performed manifestation of work (both the work of code debugging and physical exercise) that is operationalized through the algorithmic instructions of the performance and the algorithms of the animations.

Within *Ghost work*, there is a series of repeating loops. From the looping computer functions that create the generative animations to the repetitive actions of my exercise, these iterative cycles are not just recurrence of the same, but create potentials for difference in how the performance unfolds. Media philosopher Hui uses the term recursion, which he derives from computation, to describe this process. He emphasizes how recursion is not simply a loop, but is “a function [that] calls itself in each iteration until a halting state is reached, which is either a predefined and executable goal or a proof of being incomputable” (Hui, 2019, p. 114). That is, recursion involves repetition of an action that produces and incorporates

1 For additional images and video documentation, refer to the website: EL Putnam, “Ghost Work,” <http://www.elputnam.com/ghostwork/>.



FIGURE 1

Performance documentation of *Ghost work* (2023) by EL Putnam at Emerson Contemporary. Presented as part of the solo exhibition *PseudoRandom*, curated by Leonie Bradbury. Photo courtesy of the artist.

feedback, like a spiral. Hui defines contingency as a rupture in the functioning of systems. He extends these concepts beyond computation to consider relations between “human and machine, technology and environment, the organic and the inorganic” (Hui, 2021, p. 232–33). Taken together, recursivity and contingency “lead to the emergence and constant improvement of technical systems” (Hui, 2019, p. 1).

While recursivity is present in *Ghost work* through the looping of functions and actions, contingency manifests in the moments of breakdown. Even though I had spent time debugging the software to ensure functionality, different issues arose during each iteration of the performance. I drew attention to software malfunction by screaming and live coding in order to resolve the issues to keep the system functioning. Notably, my screaming “Crash” referred only to technological breakdown and not to my physical state. For instance, during the second iteration of the performance, the input of heart rate value for the audio tone generator was a number outside the designated range of the function, thereby preventing playback of the slit-scan video. It took some time for me to identify this issue, with this process of trouble shooting taking place during a designated rest period from exercise, in accordance with the generated animations. This meant I was unable to physically recover from an extended series of performing burpees and went straight into a sequence of jumping jacks. To let my body recover, I performed these jumping jacks slowly, lifting my arms and spreading my legs without jumping off the ground. While I appeared to do strenuous exercise, my heart rate lowered during this period as I took the time to

rest. I developed a strategy to cope with the demands of the machine, adapting my movements to the algorithmic thinking that was physically exhausting to maintain the functionality of the system.

Hui (2019) refers to modernity as defined by resilience, or the capacity to tolerate contingency. That is, recursivity integrates contingency as feedback to improve systems, resulting in what he describes as a giant or general machinic organism within which we live. As we move toward higher degrees of automation on all levels, dominated by algorithmic thinking, or calculative reason and rationalism, other means of thought, such as speculative reason and techno-diversity, are precluded. Couldry and Mejias (2019) describe how every aspect of human experience and relationality is subjected to profitable extraction. They argue that these processes are a perpetuation of colonization through data, which includes the use of apps and other technical devices to track biometric data, such as the Bluetooth heart rate monitor I engage with in *Ghost work*. While historically colonialism involves the annexation of territories and inhabitants for resources and profit, data colonialism encompasses “the capture and control of human life itself through appropriating the data that can be extracted from it for profit” (Couldry and Mejias, 2019, p. xi). To facilitate such capture, our behaviors and activities are encouraged, nudged, and mediated in ways to be more extractable. The extraction of such “resources” in *Ghost work* include time, labor, and biometric data. Emphasis is placed on the functioning of the technical system at the expense of the physical body and its cognitive labor. Colonialism is not just present in the

extraction of resources, but also in the thinking that underpins this process, or what Mignolo (2011) defines as coloniality: the logic and rationale that underpins colonization. That is, the algorithmic thinking of data colonialism functions as a form of data coloniality.² As such, *Ghost work* offers another way of thinking, where breakdown becomes a means of interrupting the logics of data colonialism. What is at stake is not just processes of extraction, but the algorithmic thinking that motivates such extraction.

4 Friction: snagging information

Friction was developed and performed in collaboration with sound artist and composer David Stalling (Figure 2).³ It was presented at Emerson Contemporary on 22 March 2023. Inspired by machine learning models that scrape the World Wide Web for data to produce generated text, I google the term “friction,” writing my results without source information onto acetate transparencies on an overhead projector while vocalizing my findings. Stalling turns my vocalizations, along with sounds from a contact microphone on the projector, into an improvised electroacoustic composition. In contrast to large language models (Bender et al., 2021), the pace and scale of my resulting data set is slow and small. I decided on what text to transcribe in the order it appeared in the search results, practicing discretion in selecting text based on what was already written. I did not click onto any page, but limited the text I transcribed to what was presented in the search results. I did not provide context or citations, intentionally merging the text into a single document that layered as I added pieces of acetate.

Recursivity occurred through the repetition of performed gestures, with contingency introduced through the difficulties faced in collecting and transcribing information within the context of the performance. I was writing upside down and vocalizing the text at the pace of writing, and the space for writing crowded as acetate sheets accumulated over time. Through the execution of the performance algorithm, recursivity and contingency triggered differences that instigated creative responses. As the performance progressed, my recitations took on a musical quality as I was aware of the improvised soundscape filling the room. In some moments, I picked up my pace, my voice becoming louder. At other times, I paused in the flow and rhythm of the experience, meditating on the output as I slowly moved my hand over the projector's light. This improvised gathering of information was productive due to, not despite, the frictions that emerged, which include the differences that come from working with two people in a context of improvisation; a need to be attuned not just to the mechanics of technology, but also each other.

The use of the Google search engine is intentional in *Friction*, as it currently dominates the market to the extent where “Google” is used to refer to any act of searching for information on the web. Google uses its PageRank algorithm

to organize and display search results, which Larry Page and Sergey Brin developed in 1998. Despite the ubiquity of Google and its minimal interface—the landing page for the search engine conveys only a search bar on a blank screen with the Google logo above it—the exact workings of its proprietary algorithms are not revealed and protected as trade secrets (Vaidhyanathan, 2012). Minimal design enables illusions of transparency, building trust in the accuracy and credibility in seemingly objective search results. Siva Vaidhyanathan describes the extent to which Google has infiltrated our engagement with information, putting “unimaginable resources at our finger tips,” while cultivating a faith in the Google brand where “Google is the lens through which we view the world” (Vaidhyanathan, 2012, p. 2 and 7). This extends from our engagement with information to our identity as subjects, as digital proxies come to determine what information we access (Cheney-Lippold, 2017). In addition, as scholars have made evident (Introna and Nissenbaum, 2000; Noble, 2018; Benjamin, 2019), search results are rife with biases, including influence from political beliefs, racism, sexism, and other prejudices, despite the fact that search results are presented as objective.

This array of concerns for how information is ordered and accessed through Google has been scaled up and made opaquer with the rise of natural language processing and predictive chat bots like Chat GPT. While Google search results at least enable the capacity to visit websites and view information within its initial scenario of presentation, affording at least some credibility check, these qualities are not present in results for Chat GPT as information is provided without context. The operational logic of organizing information for relevancy through opaque algorithmic thinking is evident in the development of Chat GPT and its subsequent celebration as a means of increasing productivity and improving optimization. However, what gets lost when emphasis gets placed on efficiency? Who and what benefits from increased optimization?

In her analysis of Smart Cities, Powell (2021, p. 6) states: “The important point here is that sociotechnical imaginaries are not mere visions; they are sustained also by the creation and maintenance of technological systems and by the alignment of particular ideas about how things ought to be with what technologies have made possible.” She emphasizes how cybernetic systems require data that are cleaned, ordered, and parsed to improve predictability and provide optimal results. A consequence of these processes, she notes, is the reduction of friction and difference in data, with the logic of computation extending from software to social relations as platforms influence how we engage with the world. Friction for Powell is vital for countering processes of optimization that reinforce technology-driven assumptions rooted in calculative logic that is designed to benefit visions of technology companies. Tsing (2005, p. 4) defines friction as “the awkward, unequal, unstable, and creative qualities of interconnection across difference.” Instead of being simply problems to be resolved, frictions are what make connections possible. Reducing friction may improve the optimization of cybernetic systems, but this algorithmic thinking precludes the potential for alternative processes when removed from systems (Powell, 2021). Hence, I end *Friction* with the phrase: “Friction is the snags that keep us together.”

² I would like to thank Abdelmjid Kettioui for this suggestion and drawing this to my attention.

³ For additional images and video documentation, refer to the website: EL Putnam, “Friction,” <http://www.elputnam.com/friction/>.

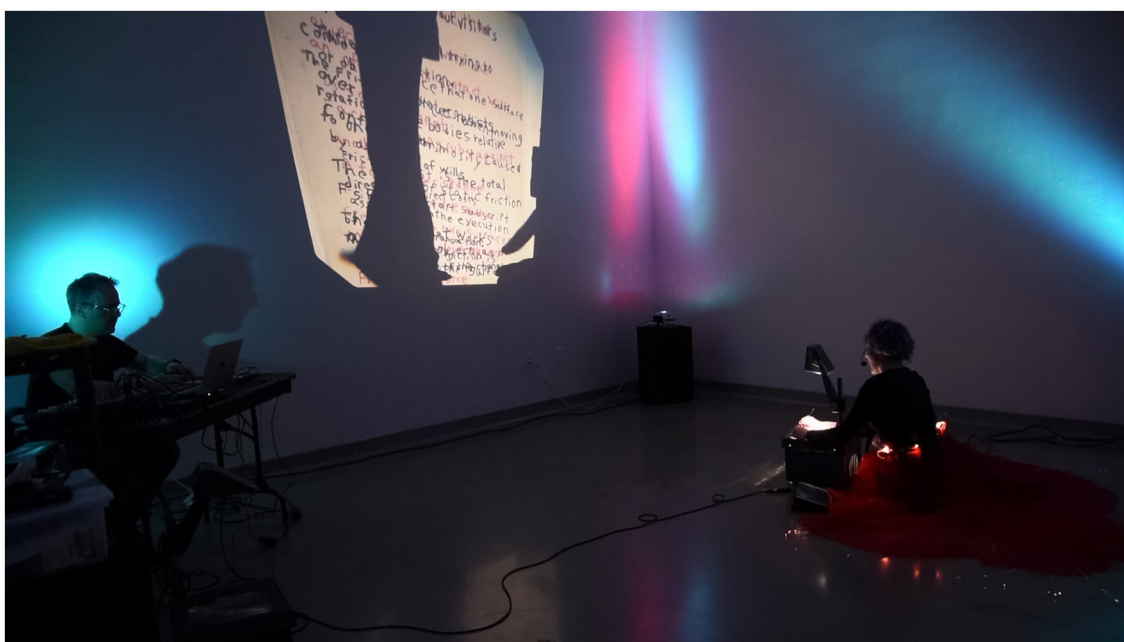


FIGURE 2

Performance documentation of *Friction* by EL Putnam and David Stalling. Presented as part of the solo exhibition *PseudoRandom*, curated by Leonie Bradbury. Photo courtesy of the artists.

5 Techno-diversity: other logics

At the same time, this friction produces contingencies that can be productive for cybernetic systems, as these introduce feedback that is recursively integrated into the machine (Hui, 2019). The more data input into a system and the more feedback on the accuracy of the results enables improvement to the model through recursion. Therefore, the existence of friction alone is not sufficient, since as contingencies, these can be recursively integrated, enabling machinic logic to expand through colonization of information. Countering this totalizing system requires a different logic from the rationale of coloniality that underpins algorithmic thinking. Data coloniality, like coloniality more generally speaking, involves power relations between regimes of privilege and disadvantage, including the economic, geographic, and racial divides between the global north and global south. The discussed performances speak to this darker side (Mignolo, 2011) of the technology industries (Putnam, 2023). For instance, the hidden labor used to develop AI, increasingly being performed in the global south, is contrasted with my situated experiences in the global north, evident in my presence in the work as medium, as I benefit from the privileges that data colonialism perpetuates.

However, these performances are not just critiques. Performance art enables the creation and utilization of idiosyncratic gestures and meanings developed through artistic production. As an artist, I engage with everyday technologies, but implement them in atypical ways in the scenarios of performance to defamiliarize our relationship to them, as noted in the analyses of *Ghost work* and *Friction* above. These processes introduce alternative logics in response to the non-rational, or what Hui

(2019, p. 33) describes as “the limit of the rational.” Logic systems, epistemologies, and different sensibilities all attempt to bring consistency to the non-rational, with technology functioning as a means of inscribing these systems (Hui, 2021). Data coloniality is one such attempt at cultivating consistency with a global reach. Art can function as a means of bringing out the non-rational, or what is “beyond the realm of demonstration,” through engagement with the unconventional and paradoxes (Hui, 2021, p. 123). Here contradictions are not resolved through the Boolean logic of algorithmic thinking, but are allowed to exist. Such qualities are present in both *Ghost work* and *Friction*. For instance, *Ghost work* functions as a performance because of, not despite, its breakdown. Attention is verbally drawn to the breakdown of the machine. The breakdown of my body through exhaustion is also evident through heavy breathing and physical strain, yet not acknowledged in the same way. In *Friction*, the collection of information produces a palimpsest, where the performance builds through the cultivation of sonic and visual noise, resulting in a compilation of data that is confusing rather than clarifying. The success of both works depends on cultivating these tensions, introducing a temporary intervention in ubiquitous technologies that invites a different engagement through poetic operations. Aesthetic experiences like these cannot be easily quantified. According to Noel Fitzpatrick, “there are modes of mediation in the world which lie outside measurability and calculation” (Fitzpatrick, 2021, p. 124). When technologies are engaged in this manner, they can “enable reflection, deliberation, conflict and reason” (Fitzpatrick, 2021, p. 124), potentially challenging the totalizing logic of algorithmic thinking.

6 Conclusion

Ghost Work and *Friction* employ the performativity of algorithms through processes of recursivity and contingency that refuses to simply become machine. That is, these performances offer alternatives to the operational logics of algorithmic thinking to counter dominant, colonizing regimes of sociotechnical imaginaries. In the discussed performances, emphasis is placed on engagements with technologies, rather than output. The purpose of this approach is to counter the treatment of human bodies, their actions, and relations as standing reserve for data colonialism. My approach as an artist engages with the simple operations of the performance algorithms, with resulting aesthetic experiences that are multifaceted instances of data visceralization. I intend to cultivate affective responses from the audience that hold rather than resolve contradictions, which may invoke ambiguous and changing emotions such as confusion, interest, boredom, and/or meditative engagement. I create an alternative logic for presentations of data gathering and analysis as temporary interventions into such systems while critically engaging with the technologies of data colonialism and their underlying logics. These alternative logics introduce difference while making visible the processes of contingency and recursivity in action present in human and technological relations, using idiosyncratic gestures that are thick with meaning, which cannot be easily extracted from the work nor easily quantified.

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.

Ethics statement

Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

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Author contributions

EP: Writing – original draft, Writing – review & editing.

Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

Acknowledgments

The author would like to thank Leonie Bradbury, Jim Manning, and Shana Dumont Garr of Emerson Contemporary for support in presenting the performances *Ghost Work* and *Friction* as part of the exhibition *PseudoRandom*. I would also like to thank the editor Abdelmjid Kettioui for providing vital insights and feedback for revising this article.

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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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fcomm.2024.1352628/full#supplementary-material>

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OPEN ACCESS

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RECEIVED 22 January 2024

ACCEPTED 18 March 2024

PUBLISHED 02 April 2024

CITATION

Karels M, Hanlon M and Moore N (2024) DIY
academic archiving: mischievous disruptions
of a new counter-movement.
Front. Commun. 9:1374663.
doi: 10.3389/fcomm.2024.1374663

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DIY academic archiving: mischievous disruptions of a new counter-movement

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Against increasing injunctions in research governance to create open data, and knee-jerk rejections from qualitative researchers in response to such efforts, we explore a radical counter movement of academics engaged in what we term “DIY Academic Archiving,” the creation of open and accessible archives of their research materials. We turn to interviews with three DIY academic archivists, each drawing on an ethos of community archiving, as opposed to emerging open data schemes: Melissa Munn on *The Gaucher/Munn Penal Press Collection*,¹ Eric Gonzaba’s *Wearing Gay History*,² and Michael Goodman’s *Victorian Illustrated Shakespeare Archive*.³ We see these archives as engaged in a “politics of refusal,” which challenges both conventional methods and ethics in qualitative research as well as new moves toward open data. On the one hand, academics are tasked to “protect” their data by destroying it, under the guise of a supposed mode of “care.” On the other hand, open data makes quite contrary demands, to care for data by making it “open” for further extraction through (re)use. DIY Academic Archiving is a practice of refusal that supports a *redirection* away from this binary. In this article, we explore how DIY academic archivists play with coding as a form of mischievous disruption, and so are contributing to new data imaginaries. We offer insight into how DIY Academic Archiving supports researchers in their theoretical, methodological and political commitments, and at the same time, how it can enable researchers to take the care-full risk of archiving our research data.

KEYWORDS

DIY academic archiving, refusal, feminist ethic of care, research ethics, reuse of qualitative data, open data, open research

1 <https://penalpress.com/>

2 <https://wearinggayhistory.com/>

3 <https://shakespeareillustration.org/>

Introduction

This article is an invitation to re-imagine practices of data reuse and sharing in the qualitative social sciences, with an intentionally playful intervention into both current research governance framings of data reuse *and* rejections of it: what we term “DIY Academic Archiving.” DIY Academic Archiving is a process of building online collections of research data, often outside of institutional repositories, and with a strong commitment to public access to data. In our view, “open” is often not open enough; commonly meaning data is made available to other researchers, but not to research participants, communities of interest and other publics, and is usually buried in data repositories, which are not very accessible. We came to describe DIY Academic Archiving through the process of building an open, online archive of research data, consisting of oral history interviews with ecofeminist activists at the Clayoquot Sound Peace Camp in the early 1990s (<https://clayoquotlives.sps.ed.ac.uk/>; Moore et al., 2021).⁴ Against our own initial assumptions that producing an online archive might be a straightforward process, we found that our work was in fact deeply methodological, opening up opportunities to imagine unconventional infrastructures for listening and engaging with data, participants, and wider publics (Dankert, 2018). We turn to interviews with other DIY academic archivists who provide reflections on the design and creation of their archives, to show how playful collaboration and accessible design work to create radical potential in the process of creating data archives. We draw on three distinct projects: Melissa Munn’s *Penal Press*,⁵ Eric Gonzaba’s *Wearing Gay History* (WGH),⁶ and Michael Goodman’s *Victorian Illustrated Shakespeare Archive* ().⁷ With each example, we show how these academics are engaging in forms of “mischievous coding” illustrating how they bring their intellectual, methodological and political commitments to the practice of data archiving. In doing so, they counter some of the concerns about new moves in research governance around open data, and offer other ways of imagining the process of data reuse, which might be more meaningful for many qualitative researchers.

DIY academic archiving as a politics of refusal

Across the qualitative social sciences, the practice of academics sharing their research data by depositing it within national or institutional data repositories continues to grow, if slowly. We see radical potential in some of these initiatives, but in coming to DIY Academic Archiving, we make a different archival turn. Our inspiration comes from the politics, practice and ethos of feminist, queer and black archival theorists and community archivists (Flinn et al., 2009; Flinn and Stevens, 2009; Bly and Wooten, 2012; Dever, 2017; Bastian and Flinn, 2018). These interlocutors direct us to the importance of attending to marginal knowledge and audiences, as well

as to a need for creativity within formal ways of doing work, here specifically archival theory and practice. The work of DIY Academic Archiving requires academics to question how their data may be shared more openly, productively flushing out tensions related to conventional strategies of qualitative data extraction. The process of such questioning supports the re-imagining practices of care and risk around participants and their data (Moore et al., 2021).

Injunctions to deposit research data into institutional repositories for data sharing, and more recent articulations of a drive for open data, have provoked some understandable dissent among qualitative academics who question the overall benefit of sharing data for (re) use.⁸ DIY Academic Archiving offers generative ways through these tensions. Qualitative researchers may feel their “small data” cannot fit into systems designed around quantitative or “big data.” For some, there is a concern that depositing research in the black box of data repositories may result in a sense of loss of control as appropriate contextual information and nuances might not be captured by data (re)use. DIY Academic Archiving alleviates some of these strains by allowing autonomy and an opportunity to engage deeply with “small data” (Rieder, 2015). As an alternative to depositing data in existing repositories, DIY archivists can turn to a range of digital platforms that, while providing turnkey solutions, are built and designed with different ethics, including Omeka⁹ and Mukurtu.¹⁰ DIY Academic Archiving, however, involves more than simply harnessing the use of technology to deposit and hold research data and materials. Rather, it is a critical practice that functions as “technology of knowing” (Stokes, 2021), creating potential for fertile meeting points of collaboration and the sharing of new knowledge (Hanlon et al., 2024).

DIY Academic Archiving requires deep and meaningful engagement with ethical concerns related to the sharing of research materials online for (re) use, a topic we explore in Moore et al. (2021). A further concern, however, is that the work of preparing data for archiving is often understood as one of data cleaning, or time-consuming data management, terms redolent with academic disdain for a certain kind of labor that is seen as not intellectual, methodological or creative, but rather as manual, menial and unskilled. Yet feminists have long understood the importance of cleaning as a practice of care and nurturing, which is usually undervalued. Why should we not clean our data, if we care and value them? And understand cleaning as a skilled practice? We argue that the work of preparing data for archiving requires care-full methodological attention to how data is being transformed in the process of archiving (see Moore et al., 2021), a process that is creative, intellectual, political, and filled with epistemological potential. We invite academic colleagues to approach DIY Academic Archiving as a *method*, not a deposit box, and to (re) engage with data in unexpected ways.

Thus, against knee-jerk reactions to calls to archive and reuse qualitative data (McLeod and O’Connor, 2021), we invoke “a politics of refusal,” drawing on black feminist theory and praxis (Moore et al., 2021; Gross et al., 2023). The distinction here is that, as Tuck and Yang

4 This experience also contributed to Moore’s subsequent involvement in a further DIY Academic Archiving project, *Reanimating Data: People, Places and Archives*, see <https://reanimatingdata.co.uk/about/>

5 <https://penalpress.com/>

6 <https://wearinggayhistory.com/>

7 <https://shakespeareillustration.org/>

8 We are not rehearsing all the arguments against reuse here, but see Moore (2007) for an early review of these debates, and McLeod and O’Connor (2021) and Hughes and Tarrant (2019) for more recent discussions.

9 <https://omeka.net/>

10 <https://mukurtu.org/>

have usefully articulated: “Refusal is a generative stance, not just a ‘no,’ but a starting place for other qualitative analyses and interpretations of data” (Tuck and Yang, 2014b, 812). While many criticisms of archiving and reuse as framed by mainstream research governance are well made, we argue that they often also foreclose the possibilities of alternative ways of imagining the archiving of qualitative research data. To be clear, our *refusal* of current research governance and emerging conventions around depositing and sharing data is not intended as a *rejection*. National data archives and university library data repositories are doing important and necessary work, which is often undervalued by academic colleagues, or perhaps even more commonly, simply unrecognized. Instead, our refusal is intended as a mischievous play with these existing framings. Our refusal seeks to redirect discussions of open data, actually expanding the possibilities of creating and sharing open data, and, at the same time, doing this in ways that might be more consistent with many qualitative researchers’ pre-existing methodological and political commitments.

Mischievous coding in DIY academic archiving

We came to these insights initially through creating our own DIY Academic Archive, Clayoquot Lives: An Ecofeminist Story Web, which holds oral history interviews and other materials related to the Clayoquot Sound Peace Camp. Having learned through our own process of building this archive (Moore et al., 2021), we were keen to hear from others who, perhaps as accidentally as us, ended up creating archives with research data and learning much more along the way than anticipated. We carried out selected interviews with others who we saw as engaged in their own forms of DIY Archiving. We turn to brief examples from these interviews to illustrate the potential of DIY Archiving and what we came to understand as a rather mischievous approach to coding, one that emerged to enable access to and engagement with the data, but on the academics’ own terms.

Coding is a common research practice across multiple disciplines.¹¹ Coding might often be understood as rigorous, consistent, robust and standardized—and we understand coding as a creative process. Here, data are “cleaned up” differently, demonstrating how generative a process DIY Academic archiving can be. In DIY Academic Archives, the researcher controls what information (metadata, categories, and tags) is made available when designing and organizing the infrastructure of the archive. This is a type of strategic curation that ultimately impacts how audience (s) will come to encounter the research materials. It is in this process that possibilities of redirection—what we call “mischievous coding”—emerge.

Mischievous coding involves critically thinking through questions related to audiences and users. The three examples we feature here are alive with mischievous disruptions through play, born of invisible, off-the-side-of-the-desk labor. This playful labor is not easily recognized or valued by institutions, but it has a profound importance

for the researchers in question. In these examples, mischievous labor becomes mischievous play, as each DIY academic archivist plays with coding to consider multiple publics: Munn builds infrastructure to disrupt any easy assumptions about the prison populations she researches; Gonzaba works with community interlocutors to establish best practices; and Goodman actively decontextualizes images for public engagement.

Making mischief with the search infrastructure—Melissa Munn on *The Gaucher/Munn Penal Press Collection*

The Gaucher/Munn Penal Press Collection is an open-access online archive holding thousands of digitized prison newsletters, collectively known as “the penal press,” which were created and produced by prison inmates within the Canadian penal system. Dating back to the 1950s, the newsletters offer a crucial insight into everyday life behind bars, as well as prisoners’ concerns about the justice system, carceral policies and prison reform via drawings, reflections, essays, stories and poems. The archive is intended to preserve this prison journalism and make the newsletters available and accessible to prisoners, former prisoners and their families, as well as to scholars, other publics, and media outlets. Building on the collection first started by Dr. Rober Gaucher, these newsletters (old and new editions) continue to be collected and digitized by Professor Melissa Munn.

Munn provided a strong account of her decisions around how the newsletters would be searchable, and why. She told us how *The Penal Press*, by design, “is not organized to be word searchable, so you cannot put a word in [...] and it will find it in every document for you. That was a very deliberate choice I made” (Munn). Thus, while the newsletters themselves are not word searchable, each newsletter is attributed to certain categories or codes, which can be searched. Munn recounted her thinking about coding the newsletters and how she created the search function on the website:

MUNN: I had to make a decision on what were the topics that I thought people would want to search about. In that, there are some judgments. For example, if you look at my website, the categories, there is nothing on alcohol addiction, because I do not know that I like the framing of it as alcohol addiction. So politically, that was not in line with my position, so they are not there. However, if you look you will find a category called “Claire Culhane” because she is my hero. So Claire Culhane gets her own category on my website.

Munn’s decision not to allow prisoners’ lives to be easily reduced to pathological stories about alcohol addiction, alongside her commitment to making sure that the prisoner rights activism of Claire Culhane is remembered, demonstrates the power of coding and its potential to remake worlds, through her mischievous disruption of research conventions that reduce people to objects of analysis. As Tuck and Yang remind us, “analytic practices of refusal involve an active resistance to trading in pain and humiliation... refusal can comprise a resistance to making someone or something the subject of research” (Tuck and Yang 2014a, 812). Material on alcoholism *can* be found in the archive, but it is not made easy for users. Rather, users would need to work through all the newsletters before they can find material on

11 Qualitative researchers use coding practices to identify themes across research materials. While DIY Academic Archiving also draws on coding as a tool for understanding research material and organizing data, it is also used to prepare and curate data for public engagement and use.

alcoholism. In this way, Munn provides readers with alternative stories of prison life—both through the text of the newsletters, but also through the form of the newsletters. Munn was committed to showcasing the art and creativity of the prison journalists and manifested in the drawings, setting and materials (also see [Clarkson and Munn, 2021](#)). This was a necessary part of the story she wanted to tell about prisoners through her research. Here, we see how DIY Academic Archiving provides a way to bust through persistent myths about prisoners, working to strategically amplify alternative stories about prisoners' lives. Coding and archiving were not a technical or administrative exercise, but rather part of the research process whereby Munn was able to shape her research narrative, and narratives about prisoners, as she would in other research outputs, such as academic articles or books.

This mischievous approach to search infrastructure exemplifies Sneha's reminder that "The digital object is made through all of these processes: digitization, encoding, cross-referencing, querying, collation, reading, and narrating—all of which involve conceptual and material aspects of thinking and doing" ([Sneha, 2017](#)). Munn's deliberate refusals of certain narratives of prisoners offers a powerful rebuttal to some which reduce understandings of preparing data for archiving to matters of cleaning or admin, and fail to appreciate the considerable methodological and conceptual work involved, how the ways in which stories are told using data, do not begin with articles and books and other more formal publications, but also through the arrangement of data in an archive.

Collaborating with communities—Eric Gonzaba on the *Wearing Gay History* archive

Wearing Gay History (WGH) is a digital archive created by Dr. Eric Gonzaba to showcase LGBT+ communities through their material cultures. The collection documents queer history through t-shirts from gay cafes, bars and nightclubs, queer festivals and events, campaigns and more, offering an extensive digitized t-shirt collection from archives from across the US and beyond. In one digital space, the collection brings together items that would otherwise require extensive travel to see in material form. The WGH archive demonstrates the potential of "pooling power" in creating digital archives, where a single t-shirt does not exist in isolation, but rather becomes part of a wider (and large) community, and in this case global movement, which can now be experienced by new audiences.

For Gonzaba, a key element of organizing the archive meant engaging with LGBT+ communities throughout the process of building the archive. Rather than develop an archive design and a coding framework as a solitary practice, Gonzaba worked collaboratively with a highly engaged and knowledgeable community of interest:

GONZABA: Things will be messy, they're meant to be messy, but working in public... *Wearing Gay History* was built openly, people were commenting, be it Twitter and Facebook, were commenting on the site and offering suggestions in real time as I was building it, literally as I was adding the first five t-shirts people were saying 'this is awkward', 'you should change this', blah, blah, blah and

working openly and being messy [...] It's one thing to have instructions in front of you, I certainly follow those instructions, but until you actually get your feet wet, do you actually realize how the site and how archives actually works.

Gonzaba's participatory approach to archiving brought LGBT+ communities directly into the process of building the digital site from the beginning, drawing on their own knowledge of items in the collection, as well as their ideas about how queer community would be displayed. Such a collaborative approach challenges researchers' usual practice of being in control of how data is managed and shared publicly, leaving it difficult to anticipate how coding structures might develop. While the liveliness of the design process proved fruitful in building the architecture of the DIY archive, it was also necessary for Gonzaba to establish certain boundaries. Many who heard about the archive wanted to submit their own t-shirts to the collection:

GONZABA: I had to make some decisions at the beginning and one of the decisions I wanted to make was that these shirts were going to be able to be found. So, you're going to look at these shirts and you're going to be able to find a copy of it in some archive.

In the process of making the online, open archive, flexibility and a commitment to collaboration generated questions for Gonzaba, not only in so far as what materials the archive would ultimately hold, but also in setting limitations on the degree of audience engagement. This resulted in the decision to document t-shirts available from established collections only, where there was already public access to materials. Through community engagement and participatory archiving, Gonzaba's work played with questions of who is an expert and who knows most about the items in the collection, recognizing that as a researcher he is not the only one with knowledge. By letting queer publics into the archive from the onset, Gonzaba demonstrates how his refusal of the solitary role of researcher, and his invitation to users into the archive-making process, offers an opportunity for play and mischief with usual research practices, but in ways that do not compromise data, but instead complements and enriches it.

The pleasures of designing for users—Michael Goodman on the *Victorian Illustrated Shakespeare Archive*

The Victorian Illustrated Shakespeare Archive (VISA) is a visual digital archive of Shakespeare illustrations. Created by Dr. Michael Goodman as his PhD research, the collection features over 3,000 digitized illustrations of vintage etchings published in the mid-1800s, and which have appeared in four major United Kingdom editions of Shakespeare's Complete Works. For Goodman, accessibility of his archive for audiences and users were key commitments, which shaped the architecture of his DIY archive. By design, VISA provides very little contextualizing information for audiences visiting the digital collection. Rather than guide, suggest or control navigation through the archive, users are invited to explore it as they please, allowing for audience-led encounters and creative interactions with the extensive collection of illustrations.

Like Penal Press and WGH, creating the VISA archive was a labor-intensive process¹² that involved sourcing publications, scanning thousands of illustrations and assembling them in digital form. Such labor is often invisible, as user-audiences experience a public-facing version only. As [Smith and Whearty \(2023\)](#) note, “these materials may seem to ‘magically appear’ on our servers and screens—but it is skilled labor, not magic, that brings them there.” For Goodman, the labor of scanning thousands of illustrations and getting the materials “there” (onto the online platform), made possible the things he valued most in the making of his archive: the pleasure of play, creativity and discovery, for himself and for audiences alike. In making his archive, Goodman was able to play around with form and esthetics by adjusting images, “feeling [his] way about the place and just seeing what happens” (Goodman). This was an enriching experience to Goodman, further heightened by his ethos of building an accessible archive for general audiences. The delight which Goodman conveyed when speaking of designing VISA, echoes [Kim’s \(2018\)](#) account of building digital archives, particularly user-centered sensory pleasures, which can hide the labor involved, as well as archival agendas. To Kim, “the question of pleasure speaks to the importance of desire in archival building and about emotional affect.” The seeming lack of contextual information on Goodman’s site risks obfuscating the considerable thought that went into its design and creation:

GOODMAN: There’s a lot of thought that’s gone into the way I wanted that presented, and the way it’s been designed and thought through, but saying that, what I wanted people to do is look at it and not realize it’s designed in that sense. So, it’s like, the design—it’s a cliché of design is that a design is invisible. So, you don’t necessarily see it, you just use it. And you play around with it and it might provoke some questions in your brain through the juxtaposition of images. Also, I wanted it accessible and easy to use, that was the other main important aspect.

This invisible labor of pleasurable play involved actively decontextualizing the images. Again, mischievous coding is used as a tool of redirection. Goodman’s commitment to open and accessible design and the resulting space of playful discovery mischievously disrupts both user experience and ideas surrounding labor, which highlights the generative (and joyful) power of making, as well as refusal by making things differently.

Designing his archive in this audience-centered way brings to the fore questions about scholarship and academia and the public good. Making, building, and playing with design allows space for both reflection and refusal ([Loveless, 2019](#)). Presenting data via the archive refuses institutional systems which value and reward publications, quality indexes and research excellence frames, yet often remain inaccessible behind paywalls and academic frameworks.

GOODMAN: Making things is just as valuable as writing things... It doesn’t necessarily have to be in a book form, it doesn’t have to be an article, I can make things, I can do stuff, I can be creative in creative Cloud, I can be playful, I can explore ideas in a practical visual way or a musical way or whatever.

For Goodman, a scholarly resource’s value does not automatically mean it shuts out the public, and popularity among the public does not necessarily mean it excludes academics. Indeed, the success of the archive design can be seen in the praise and recognition it has received in multiple media outlets, such as the BBC Shakespeare (2018). Academics, perhaps more used to weighty background information and guidance and direction, may paradoxically find it harder to use, or to grasp the complexity of the behind-the-scenes decisions. Goodman is critical of academic gatekeeping. Placing a strong emphasis on ensuring the material’s accessibility in a user-friendly manner was a key for him, prioritizing the archive’s potential for sharing, inspiring, and connecting. By making these materials available in this way, Goodman invites visitors to discover and engage with it playfully, whether pedagogically, for scholarly pursuits, or creative mischief.

Conclusion

We see the archives created by Munn, Gonzaba, Goodman and others as a powerful counter-movement, refusing mainstream framings of open data, while persistently, and with considerable dedication, offering new, arguably more meaningful, “archival imaginaries” for qualitative researchers ([Moore, 2016](#)). In this process, the dismissive rejection of the labor of preparing data for archiving is transformed into a site of mischievous trouble-making, knowledge creation (both the knowledge that comes through attending to the detail of making archives, as well as the act of retrieving knowledge that might otherwise become lost), and the insistence that some knowledge are not erased, destroyed, disavowed, but are worthy of intense care. Each of these examples demonstrate how data curation is tied to notions of access, complicating the ideas and assumptions of “open,” and the binary of what it means to be “open”: while all of their archives look “open,” there is often invisible, yet intentionally mischievous, curatorial labor at work, guided by the *researcher-creators’* commitments. While Munn’s archive moves against a type of data extractivism, Gonzaba’s archive challenges unidirectional processes of engagement. Meanwhile, Goodman’s archive resists dictating the terms of the audience encounter, to avoid leading them toward certain interpretations.

DIY Academic Archiving offers a playful “politics of refusal” and as such can be seen as a form of mischievous academic labor that supports productive disruptions and redirections, and which perhaps paradoxically, insists that open data is often not open enough. Understanding DIY Academic archiving as a form of *method* ([Moore et al., 2021](#)) creates opportunities for academics to challenge emerging norms around expected ways of sharing data as a form of generative refusal. In taking up and proposing DIY Academic Archiving as a counter-movement of academic archiving that is already happening, we make mischief by insisting on archiving outside of the current norms of research governance, as well as by refusing the destructive

¹² The labor involved in digital archiving is significant and featured extensively across the interviews. While a detailed exploration exceeds the scope of this article, we explore this further in our forthcoming book on DIY Academic Archiving (Palgrave 2024).

ethic to destroy data which researchers have so carefully co-produced. We make mischief by insisting on the care in cleaning, in preparing data for others to use. We make mischief by insisting on the methods, and methodology, in archiving and data cleaning, and in insisting that marginalized people's knowledge count and deserve the care-full risk of archiving our research data.

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.

Ethics statement

The studies involving humans were approved by School for Social and Political Science, University of Edinburgh. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

MK: Conceptualization, Data curation, Investigation, Methodology, Project administration, Visualization, Writing – original draft, Writing – review & editing. MH: Conceptualization, Data curation, Investigation, Methodology, Project administration, Visualization, Writing – original draft, Writing – review & editing. NM: Conceptualization, Data curation, Investigation, Methodology, Project administration, Visualization, Writing – original draft, Writing – review & editing.

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Funding

The author(s) declare financial support was received for the research, authorship, and/or publication of this article. We would like to declare a small amount of funding to support the transcription of interviews from the School of Social and Political Sciences at the University of Edinburgh, as well some funding from Okanagan College to support a Research Assistant through the Grants-in-Aid fund.

Acknowledgments

We express our gratitude to the following people: Nikki Dunne, an essential member of our team and co-conspirator; Sacha Alfonso Villafuerte who worked as a Research Assistant at Okanagan College; and of course, Melissa Munn, Eric Gonzaba, and Michael Goodman for their time and invaluable insights.

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.

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OPEN ACCESS

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RECEIVED 15 January 2024

ACCEPTED 11 April 2024

PUBLISHED 30 May 2024

CITATION

Hill C (2024) Speculative Black Feminist
Epistemologies of Worldbuilding for XR.
Front. Commun. 9:1371081.
doi: 10.3389/fcomm.2024.1371081

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Speculative Black Feminist Epistemologies of Worldbuilding for XR

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Speculative Black Feminist Epistemologies of Worldbuilding for XR is a methodology attempting to address space, the production of space, permission of space, the economy of space, and evading the confines of space by activating possible imaginaries in the development of XR (Extended Reality) environments. Through a praxis straddling academic and artist writing, the argument explores an experimental approach to Worldbuilding for XR by upending the role of Cartesian coordinates as the default measurement of 3D space. The possibilities afforded XR technologies allow for experimenting with unrestricted navigation of Black women's cartographic movements, which is impossible in real-world geography. The core proposition of the Black Feminist Episteme of Worldbuilding is the praxis of de-mapping. This praxis foregrounds fugitive movements and spaces by utilizing XR Worldbuilding affordances as a speculative container for reimagining navigation for identities under conditions of subjugation. Researching and speculating about the affordances of XR is a critical intervention attempting to counter mainstream development and deployment of immersive media technology dedicated to the pedagogical tasks of gaming, militarization, and other real-world training applications. The first move toward the praxis of de-mapping, an arrival, is acknowledging the material composition and operation of XR technology. The second move and the first departure explore intentional disorientation. The third move interrupts the linearity of departures and arrivals to establish mobility as a counter-cartographic methodology by referencing the female protagonists in the study by Octavia E. Butler.

KEYWORDS

XR development, Black feminism, geography, counter-cartography, immersive media, spatial computing, speculative narrative, Black Feminist Epistemologies

Introduction

Let us attempt to consider space (computational and terrestrial), the production of space, the permission of space, the economy of space, and evading the confines of space through the possible imaginaries of Black Feminist geographic ontologies for XR Worldbuilding. XR stands for Extended Reality, encompassing hardware and software for virtual reality, augmented reality, and mixed reality. These technologies are considered spatial computing, a broad term for human-computer interactions that happen in real-world space not necessarily mediated by a traditional screen. Black Feminist Epistemology for Worldbuilding aligns the Black Feminist perspective on geography with XR design in a speculative reimagining of the boundaries of digital space and reality.

This essay is experimental in execution, speculative in practice, and a meditation by methodology dedicated to explore Worldbuilding XR environment against their intended purposes and deployments. Black Feminist Worldbuilding is the practice of deconstructing terrestrial norms that support systemic subjugation (Figure 1). The destination is errant—not interested in a specific ending at predetermined coordinates. Instead, Black Feminist Epistemologies activate to reconfigure coordinates between contiguous arrivals and departures forging speculative inquiries into the canonical grammar of spatiotemporally.

Attempts at reconfiguring the mobility of Black women through counter-cartographies using spatial computing is called the praxis of de-mapping. The praxis of de-mapping foregrounds fugitive movements reimagining spatial configurations by utilizing XR Worldbuilding as a speculative container for disrupting the reliance on the linear conditions of space and time. The first move away from linear presumption is the arrival—acknowledging the material composition and operation of spatial computing. The second move and the first departure explore endeavors of intentional disorientation, not seeking the norm. The third move disrupts the linearity of departures and arrivals establishing mobility as a counter-cartographic methodology (Figure 1).

A ceremony for the hardware and software

Spatial computing is made possible by the materiality of hardware and software. Both elements are progeny relying on contemporaneous variants of the colonial project and extractivist capitalism. These tools are compulsory collaborators for exploring the generative and uncharted possibilities of XR technology. The material genealogy of

industrialized technology begins with the extraction of the mineral Coltan (columbite-tantalite) in the Democratic Republic of the Congo by humans operating on the fragile edges of visibility and erasure. Kathryn Yusoff, in a lecture at the Harvard Graduate School of Design, cites that a “white utopia is a Black Inferno” because of extractive violence (Yusoff, 2020). Mainstream technology replicates social biases—automated algorithmic logistics of the colonial project. Ramon Amaro explicates in the essay *Haunting, Blackness, and Algorithmic Thought* (2021) that technology is not neutral and it is imbued with the ideologies of its creator, the coder (Figure 2).

The violence in technological bias is pervasive and at times inescapable—enacting as malignant deployments into society. The only option for combatting these inequities, erasures, and slippages is the act of repair through the praxis of decolonizing the technological landscape. To decolonize a technological design, its operation must be revised through recognition, refusal, infiltration, and accountability. In Dori (Elizabeth) Tunstall's book *Decolonizing Design a Cultural Justice Guidebook* (2023), the chapter “Decolonizing Design Means Dismantling the Tech Bias in the European Modernist Project” traces Western technology advancement from the plantation to the contemporary. She writes about “better living” through solution-based technological evolution driven by capitalism and charted by “progress narratives” from the colonial project, which is the ultimate technology of capitalism, to consumer technologies unveiled during the 1893 Chicago's World Fair. At the exposition celebrating the 400 years since Christopher Columbus “discovered the Dominican Republic” was the display of new technology AC electricity for indoor lighting, and consumer projects like Aunt Jemima Pancake mix. The contemporary discussion of “progress narratives” integrates the fantasy of Artificial intelligence (AI). The

What I feel is important to outline in terms of the geographies of transatlantic slavery and my larger discussion on black women's geographies is not so much the vast and differential processes of captivity. Instead, I turn to slavery, through memories, writings, theories, and geographies, to address the idea that locations of captivity initiate a different sense of place through which black women can manipulate the categories and sites that constrain them. Of course the technologies and violences of slavery, as they are spatialized, do not disappear when black women assert their sense of place. But black women also *inhabited* what Jenny Sharpe calls “the crevices of power” necessary to enslavement, and from this location some were able to manipulate and recast the meanings of slavery's geographic terrain.¹³ Their different practices of spatial manipulation make possible a way to analyze four interrelated processes that identify the social production of space: the naturalization of identity and place, discussed above; the ways in which geographic enslavement is developed through the constructs of black womanhood and femininity; the spatial practices black women employ across and beyond domination; and the ways in which geography, although seemingly static, is an alterable terrain.

FIGURE 1

Katherine McKittrick, *Demonic Grounds: Black Women and the Cartography of Struggle*, pages 16–17.

The moralist crusade against malignant techno-influence, although in the guise of the everyday programmer, is illustrative of the astounding haughtiness of synthesis. What I mean is that this superimposition of practices can help us understand how easily machine learning ethics can align itself with the same violences it seeks to mitigate; and how existing social constructs are open playgrounds where one can assume the role of ethicist based on the sole merit of an ability to code.

FIGURE 2

Ezekiel Dixon-Román and Ramon Amaro *Haunting, Blackness, and Algorithmic Thought*.

promotional material for the UAE (United Arab Emirates) World Expo 2022 touted AI as a life-changing innovation. The genealogy of technology and its logistical purpose are rooted in the extractive economies of capitalism. Tunstall speaks about the 1793 invention of the cotton Gin as a plantation technology for separating cotton, increasing the production of cotton requiring a surge in forced human labor and expansion in land theft to supply the demand (Tunstall, 2023). Researching XR technology and spatial computing attempts to revise relations of technology to society by reimagining the grammar of the default use. Using technology against its intended purpose to foreground counter-narratives and the abolishment of the coder's bias is an act of Othering the hardware and software with care; this approach is critical for the praxis of de-mapping.

Unsettling geography by upending Cartesian coordinates, an arrival

Querying the possibilities of spatial computing and the establishment of space by the quintessential utilitarian nature of coordinates of cartography and territorialization requires recognition. Exploring the plurality possible to chart new cartographical narratives mediated by a Black Feminist lens troubles these spatial defaults. Reimagining the spatial computing landscape acknowledges the inherited violence of extractive and human labor-dependent economies showing reverence for their material composition.

The praxis of de-mapping as counter-cartography is available in XR technology where volume, coordinates, and orientation are alterable offering transferable properties in the terrestrial realm. As Jean Baudrillard explicates in his 1981 essay “The Precession of Simulacra,” the first paragraph references Borges's allegory of the map as it relates to imperial territorialization (Figure 3). The map simulates the territory as if the scale was 1:1 showing material evidence of its relation to the physicality of terrain and potential porosity (Figure 3).

The praxis of de-mapping presents a speculative counter-cartography for repair. Maps trace the mountains mined, land stolen and overworked, and the oceans polluted. Counter-cartographies care for the terrorized landscape and the citizens of the margins, by observing fugitive productivity—a new set of relations is possible. Like

If we were able to take as the finest allegory of simulation the Borges tale where the cartographers of the Empire draw up a map so detailed that it ends up exactly covering the territory (but where the decline of the Empire sees this map become frayed and finally ruined, a few shreds still discernible in the deserts—the metaphysical beauty of this ruined abstraction, bearing witness to an Imperial pride and rotting like a carcass, returning to the substance of the soil, rather as an aging double ends up being confused with the real thing)—then this fable has come full circle for us, and now has nothing but the discrete charm of second-order simulacra. ¹

FIGURE 3

Jean Baudrillard “The Precession of Simulacra” in *Simulations*, page 1.

the map in Borges's allegory, let us push on where it is porous, let us fall through those fissures, those erosions of deterritorialization, mapping a new relationality of coordinates by upending the operation of three-dimensional space as fixed.

To consider the production of space and the movement of people, the default area of study is geography. Katherine McKittrick's book *Demonic Grounds: Black Women and the Cartographies of Struggle* (2006) engages in an exercise of counter-cartography attempting to de-spatialize the Black ontological sense of forced displacement deployed during the terror of the colonial project. McKittrick is an ally in the praxis of de-mapping. By enacting the gesture of a spatial act in the form of resistance, the praxis of de-mapping speculates new forms of occupying and traversing space (McKittrick, 2006). *Demonic Grounds* (2006) revises the relationship of geography to colonial violence, imperialism, and domination by turning toward Black female geographies to construct counter-cartographies and fugitive imaginaries under forced occupation and inhospitable spaces of subjugation. The praxis of de-mapping ignites the alterable to evoke what McKittrick by way of Caribbean theorist Sylvia Wynter calls *Demonic Grounds* (Figure 4).

3D space is mapped, understood, and made navigable by utilizing Cartesian coordinates. Navigating terrestrial space shares the same reliance. Cartesian coordinates are a geometry system invented by mathematician, scientist, and metaphysician René Descartes (1596–1650) during the 17th century. Cartesian coordinates are foundational for the mapping of territories, journeys across land and sea, the location of natural resources, fortified people groups, and “new lands.” The One Cartesian coordinate system is the origin of the zero point, the X-axis. The second Cartesian coordinate system activates the Y-axis and implicates the X-axis; this enclosure fixes the location and makes the origin didactic. The X-axis and Y-axis coordinates make a location legible, and mappable—making way for the practice of cartography. The three Cartesian coordinate systems, the X-axis, the Y-axis, and the Z-axis, allow for cartography to encompass dimensional mobility. In the 3D computational spaces, the three-coordinate system is the default. The X- and Y-axis, this is how you know you are oriented right side up, the inclusion of the Z-axis allows for proximity and visibility. The production, legibility, and economy of space, digital and analog, depend on Cartesian coordinates. Let us return to Katherine McKittrick to discuss the navigation of space as three-dimensionality through a Black Feminist geographic lens.

If we think about the inexorable link between the three-dimensional cartography of the coordinates system and their attributions to imperialism and the colonial project as a maintenance tool for the categorical organizing of territories; McKittrick offers language for reconfiguring this spatial relationship (Figure 5). McKittrick paves the way for locating the liminal, the outsides, and the in-between relations of the three-dimensionality of the coordinates. These in-betweens are the Demonic Grounds—dislocating through the praxis of de-mapping (Figure 5).

Disorientation as a departure

When entering 3D spatial development software, the intention is to be right side up and at the zero-origin point. The praxis of de-mapping is not seeking to be right side up at the zero point. Disrupting 3D space and the legibility of Cartesian coordinates is an operation of disorientation. In the book *Queer Phenomenology Orientations, Objects, Others* (2006), Sara Ahmed writes in “Conclusion:

Disorientation and Queer Objects” how disorientation interrupts the sense of knowing the inertia of the bodily trajectory, and how letting go of the expectation can produce new orientations upending the bodies dependence on the ground and being right side up (Figure 6).

The praxis of de-mapping is the endeavor of undoing the fixed supports of the Cartesian coordinates by seeking disorientation, of being undone (Ahmed, 2006). Disorientation offers an entry point for embarking on counter-cartography, of being thrown and engaging the generative possibilities found from not being right side up. De-mapping as a counter-cartographic endeavor toward disorientation and the generative possibility of not being right side up offers a strategy for creating a new relation to coordinates, reimagining the grammar for occupying and moving through space grasping the indeterminacy of the air (Ahmed, 2006).

Unrestricted mobility as practiced through Transubstantiality, Transversability, and Traversability

The praxis of de-mapping acknowledges the precarious conditions of fugitivity as it oozes out from these spaces into the real world. These spaces are the garret found in Harriet Jacobson’s autographical book *Incidents in the Life of a Slave Girl* (Jacobs, 2015), The Margins bell hooks discuss as being a radical womb of resistance (Hooks, 1989), and the mythopoetic making of the Drexciya narrative critically fabulated by electronic music duo of the same name. Drexciya charts the survival of babies born underwater when their pregnant enslaved mothers were thrown overboard slave ships by establishing a fugitive subaquatic society by adapting to their watery graves refusing erasure and thriving.

These instances of fugitivity offer parameters for moving toward Demonic Ground, of altering Black women’s relation to computation. Making a speculative offering for disrupting 3D Worldbuilding through the praxis of de-mapping, Denise Ferreira da Silva’s essay *Toward a Black Feminist Poethics: The Quest(ion) of Blackness Toward the End of the World* (2015) provides a substrate of porosity to return to the Borges allegory of the map (Baudrillard, 1983). Ferreira da Silva transcends the possibilities of Blackness as liberated from historical, biological, political, social, and systemic

planet.

Demonic Grounds is a study of connections. It connects black studies, human geography, and black feminism. The textual sources connect literature, theory, poetry, drama, remembrances, images, and maps. These connections and expressions are not intended to name what/who is missing—from black studies, human geography, black feminism, or our historically present geographic landscapes. They are, instead, intended to illustrate the ways in which human geographies are, as a result of connections, made alterable. The combination of diverse theories, literatures, and material geographies works to displace “disciplinary” motives and demon-

FIGURE 4

Katherine McKittrick, *Demonic Grounds: Black Women and the Cartography of Struggle*, page 31.

women are negotiating a geographic landscape that is upheld by a legacy of exploitation, exploration, and conquest.⁶ If we imagine that traditional geographies are upheld by their three-dimensionality, as well as a corresponding language of insides and outsides, borders and belongings, and inclusions and exclusions, we can expose domination as a visible spatial project that organizes, names, and sees social differences (such as black femininity) and determines *where* social order happens.

The history of black subjects in the diaspora is a geographic story that

FIGURE 5

Katherine McKittrick, *Demonic Grounds: Black Women and the Cartography of Struggle*, page 14.

Moments of disorientation are vital. They are bodily experiences that throw the world up, or throw the body from its ground. Disorientation as a bodily feeling can be unsettling, and it can shatter one's sense of confidence in the ground or one's belief that the ground on which we reside can support the actions that make a life feel livable. Such a feeling of shattering, or of being shattered, might persist and become a crisis. Or the feeling itself might pass as the ground returns or as we return to the ground. The body might be reoriented if the hand that reaches out finds something to steady an action. Or the hand might reach out and find nothing, and might grasp instead the indeterminacy of air. The body in losing its support might then be lost, undone, thrown.

FIGURE 6

Sara Ahmed, *Queer Phenomenology Orientations, Objects, Others*, page 157.

subjugation of the Western production of space and time. In the last portion of the essay “After the End? Virtuality, Transubstantiality, Transversability, and Traversability,” Ferreira da Silva thinks about virtuality through the lens of Black Feminist Poethics as an indeterminate matter of Black ontology imagined and contingent. Her inquiry challenges spatial temporality by unpacking the act of navigating between virtuality, the liminal, and reality foregrounded by the female protagonists from prolific African American Science-Fiction Writer Octavia Estelle Butler’s novels (Da Silva, 2015).

Traversability—Dana Franklin from *Kindred* (1979) can time travel. Her ability to live in and between two temporalities is emblematic of Traversability—troubling the linear relations of spatial temporality Western society is dependent on. Butler tells the story of cross-generational time travel. Dana who is a writer living in 1979 Los Angeles with her Caucasian husband Kevin first experiences episodes of time travel triggered on her 26th birthday. Dana is transported back to her ancestor’s plantation in 19th-century antebellum Maryland (Butler, 2003). For Dana, traveling between the 20th and the 19th centuries is pedagogical to understanding the complexities of survival for Black women through time. Dana’s time travel episodes are perceived as uncontrollable, but through praxis, she learns how to

bring herself back to the present. Dana’s relationship to her coordinates is of disorientation. She challenges the validity of coordinates regarding the linearity of spatial temporality by time traveling through the portal of her ancestral genealogy. Her ability to move through time and space disrupting matter is the praxis of de-mapping by surviving the navigation of Traversability, the act of reordering the relationship to Cartesian coordinates in refusal of the linearity of space and time (Da Silva, 2015).

Transubstantiality—The book *Wild Seed* (1980) tells the story of two ancient immortal Africans, Doro and Anyanwu. Doro is a spirit that can occupy other bodies by killing his host identity upon jumping into them. Doro, fascinated by Anyanwu and her powers takes her to one of his breeding villages where he experiments with creating superhumans. Anyanwu can shapeshift into animals and humans, altering her volume and material appearance. She is also able to transfer energy for healing (Butler, 2020). Anyanwu’s powers allow her material volume to be altered in a tactic Ferreira da Silva describes as Transubstantiality. Transubstantiality is the transgression of categorical rendering of material, the will to be in flux, collapsing or expanding her volume, and transferring energy. She challenges her ontological coordinates to be illegible, to be fugitive. Transubstantiality is a praxis of de-mapping by producing the possibility of expanding,

collapsing, and reorienting material coordinates to embody plurality, defying defaults of materiality (Da Silva, 2015).

Transversability—Lauren Olamina from *The Parable of the Sower* (1993) is a teenager who transitions to a young woman while occupying a post-apocalyptic anthropogenic, politicized, and racialized landscape of America. Lauren experiences a forced migration from her home and family, which is complicated by the fact that she is a Hyperempath (Butler and Jemisin, 2019). She can feel the pain and pleasure of those around her. Ferreira da Silva discusses her abilities as Transversability; her ability to collapse, and layer coordinates and the somatic markers of other bodies with that of her own. Transversability is the praxis of de-mapping through the ability to consolidate proximity coordinates between herself and others (Da Silva, 2015).

The inquiry into Butler's work attempts to explore virtuality as a disruption of matter and orientation. This disruption of matter is a critical aspect of the praxis of de-mapping allowing for unrestricted mobility. Unrestricted mobility is crucial to the praxis of de-mapping made possible in the productive experimental nature of XR Worldbuilding—a computational space where coordinates could be altered and manipulated, returning to McKittrick on “manipulation and re-casting of terrain.” If the terrain is mainstream spatial computing for the development of navigable immersive media and the default applications, how can the terrain facilitate the praxis of de-mapping emerges as an inquiry? How can new terrain be constituted to support unconfigurable and unrestricted mobility of virtuality, the liminal space, the indeterminate in-between of being Transversal, Traversable, and Transubstantial?

A new terrain that is not fixed and determined is necessary for continuing to explore unrestricted mobility. Re-casting terrain creates a fugitive landscape, in the same operations of the garrets and the margins. To establish the re-casting of terrain, the activation of the shoal as outlined by Tiffany Lethabo King in *The Black Shoals: Offshore Formations of Black and Native Studies* (2019), the fugitive landmass enacts the grammar of a new terrain. The shoal, an emerging and submerging landmass, is a metaphoric interlocutor for the relations between Black and Native ontologies as both people groups live in a post-colonial landscape with the weight of coloniality in their quotidian lives. Shoals are offshore formations that can exist in various materialities from the granular nature of sand to the fortified nature of limestone or as a discrete ecology of coral (King, 2019). When not legible and announced, a shoal can cause disruption and disorientation to boats, ships, and other aquatic technologies relying on Cartesian coordinates. In the praxis of de-mapping, the shoal is erected to be an interlocutor between geography, and spatial computing enabling the counter-cartographic spatial act. In the praxis of de-mapping the shoal becomes a non-locatable site of possibilities for collapsing, expanding, and reordering coordinates. The shoal can shift its relation to legibility, volume, and proximity. Unrestricted mobility is activated and made possible by the shoal.

Conclusion—disorientated coordinates

The concluding inquiry at this moment, this fragile vertical slice of temporality, is the question of how the praxis of de-mapping facilitated by spatial computing disrupts, disorients, and reorganizes the relationality to Cartesian coordinates steps outside of the confines of

the hardware and the software to exist in IRL (in real life). In 3D environment development, the materials, interfaces, and literacy make it possible to create XR experiences where indeterminate relationships between objects, avatars, ground planes, and the environment can be explored. Disorientation, as unpacked through *Queer Phenomenology* (2006), provides a departure for navigating against the default of being right side up. Mobility in interactive 3D spaces can be unrestricted and is critical to exploring the praxis of de-mapping through the method of virtuality as illustrated through enacting the qualities of Transubstantiality, Transversability, and Traversability (Da Silva, 2015). The shoal as an uncharted, unmappable, and non-locatable landmass defined by arrivals and departures of legibility provides the context for de-mapping through unrestricted mobility. The shoal (King, 2019) is always in formation, always available, and has a plurality of proximities. Spatial computing offers the opportunity for unpredictability and indeterminates of spatial configuration. Experimenting with the unmappable virtually, erecting a shoal to support mobility in the software and hardware, brings forth the question of can those coordinates overwrite onto the terrestrial landscape. XR technology can be portals where the praxis of de-mapping can step out of the binary confines of the digital into the physical fleshly tangibility of the material world. The praxis of de-mapping in 3D spaces returns us to the Borges allegory (Baudrillard, 1983) of deterritorialization through experimental simulations.

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

CH: Writing – original draft, Writing – review & editing.

Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

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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OPEN ACCESS

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RECEIVED 08 December 2023

ACCEPTED 08 March 2024

PUBLISHED 30 May 2024

CITATION

Webb S, Thomson R and Moore N (2024)
Reanimating feminist archives: ethics and
praxis.
Front. Commun. 9:1352534.
doi: 10.3389/fcomm.2024.1352534

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Reanimating feminist archives: ethics and praxis

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This study explores the complexities of developing feminist archives with a particular focus on the 'Feminist Approaches to Youth Sexuality (FAYS)' archive, created as part of the Reanimating Data project (RAD, 2018-21). Through this case study, we explore the ethical considerations and practices involved in reanimating a landmark feminist study, the Women, Risk, and AIDS Project (WRAP), and emphasize the ethical dimensions of reanimation processes, considering feminist ethics of care and risk. We also explore the concept of rematriation, which is rooted in indigenous feminist scholarship. This concept has become a guiding principle in our efforts to return WRAP to its geo-political context. As such, the article is structured into the following three sections: data in the attic, on recovery and rematriation; feminist ethics, on care and risk; and feminist archival praxis, on reanimating and language.

KEYWORDS

feminist archives, feminist archiving, rematriation, feminist ethics of care, feminist ethics of risk, feminist digital archives

1 Introduction

Drawing inspiration from both academic and community efforts in feminist (Eichhorn, 2013; Cifor and Wood, 2017) and queer archiving (Lee, 2021; Stone and Cantrell, 2010) this study discusses practices related to developing the Feminist Approaches to Youth Sexuality (FAYS) archive. The FAYS archive, collaboratively developed by the authors as part of the Reanimating Data project (RAD, 2018-21), represents a revisiting of a landmark feminist study of young women's sexual cultures and practices, conducted in Manchester and London in 1988-1990—the Women, Risk, & AIDS Project—the WRAP. The WRAP formed part of an ESRC program into the social aspects of HIV/AIDS, and the project can be understood as capturing an important moment in which heterosexuality was named, de-naturalized, and broken down into following components: practices, silences, asymmetries of desire, and anatomical aspects. The RAD project, funded by the ESRC, was tasked with the following: revisiting the WRAP interviews; reengaging with narratives within and across inter-generational lines; reanimating the sound, text, stories, and experiences through experimental sound and art installations; and (re)archiving the original interviews, the focus of this study. Activities related to (re)archiving included revisiting the collection with members of the original research team, which included Professor Rachel Thomson (PI, RAD). From this standpoint, the original study and its data were viewed as an event, as a set of encounters, methodologies, and objects that enable feminist time travels and foster conversations among researchers, both then and now, as well as conversation within oneself bridging past and present. This temporality and the unique continuity between research projects afforded a critical element of self-reflection in relation to the original dataset and lived experience of the

RAD project team and network. (Re)archiving the data and these temporal elements prompted us to think beyond traditional modes of access and to explore epistemological questions related to archiving, now historic, sociological data. Through various ‘reanimations’ (for example, sound installations and feminist chatbots), the project considered questions around resurrection and reanimation, about ghostly messages which linger or haunt, about the forgotten interests, impulses, longings, aspirations, and desires, which emerged in the text and their reanimated offspring. Within this context, a particular concern was the ethical considerations of reanimating the WRAP data set from both the perspective of the original contributors and the contemporary reader. Ethics, from a feminist ethics of care and a feminist ethics of risk, therefore, is the second particular focus of this study. As such, this article is structured as follows: data in the attic, on recovery and rematriation; feminist ethics, on care and risk; and feminist archival praxis, on reanimating and language.

1.1 Data in the attic, on recovery and rematriation

The Women’s Risk and AIDS Project (1989–90) was a.

Social science research project, funded by the Economic and Social Research Council (ESRC) as part of a programme of AIDS and HIV research, commissioned to investigate changing sexual behaviour, practices and values in the UK...[The] research project...sought to understand how young women were negotiating sex, relationships, risk and pleasure following the emergence of AIDS. The collection includes 148 in-depth biographical interviews with young women aged between 16 and 21 in Manchester and London in the UK, carried out in 1989–1990.¹

The above description is taken from the Omeka archive in which the anonymised transcripts, as well as other material related to RAD, are now housed. This living archive, as we remain committed to adding to it, represents the culmination of over 30 years of work. RAD has provided WRAP a resting place, an archival place to hold the voices, memories, experiences, and, indeed, trauma of those originally interviewed. The journey to this archival home started with a visit to an attic in a London home where the data had been stored by Janet Holland, one of the PIs of the original regional study. Among the artifacts representing a lifetime of research were old computers, old storage devices, old paperwork, and vivid memories. The objects recovered from this excavation formed the basis of our archival work. Our ambitions, however, were much more than not just rescuing data. We aimed to bring it back into conversation with its original geo-political context—an action we have termed rematriation, which is an act or processes of return to an original community or context (Moore et al., 2023). Our actions of recovery and rematriation offered an opportunity to bring the original data

back to Manchester, where half of the interviews for the original WRAP were conducted. However, it is crucial to acknowledge the dedicated, sustained commitment and care demonstrated by Janet to the interviews and the WRAP research project. This feminist act of radical care ensured that the work of recovery and rematriation could be carried out—an act not often afforded to historical, social science data sets. As Niamh Moore (2019) discusses in a project blog, UK social science has often been an extractive economy, with stories and lives renamed, data, recorded and removed from communities, repackaged in journal articles and books, and hidden in filing cabinets or behind the licensing arrangements of more formal archives so that communities and individuals do not have access to their own stories.

Indeed, exploring the concept of reanimating in a separate project blog, Thomson (2022) describes this practice as a ‘dead sociology’, encompassing ‘dead data’ in the context of zombie practices, which keep data neither dead nor alive, but in a liminal state of suspended animation.

The vision of enacting rematriation, and indeed reconnection, was a core motivation for RAD and informed various project activities. Rematriation, a concept and praxis rooted in indigenous feminist scholarship and activism (Muthien n.d.; Moro 2018; Tuck 2013), commits to a return, a re-sharing, as a political act that is influenced by an ethics of care for the individuals and communities represented in or within data/archives. It also cares and is cognizant of the intergenerational relationships between object and subject, between subject and object, and foregrounds archives of connection over archives out of context—hidden, lost, or indeed stolen.

While rematriation stems from indigenous feminist scholarship, we consider it to be part of a broader feminist ethics of care and praxis related to contemporary work in community archives. This work is fuelled by identity politics, the politics of representation and inclusion, as well as the fallout of digitally mediated accessibility and reproduction. The historical acts of care and contemporary efforts of recovery and rematriation signify an ethical commitment and responsibility to research ‘subjects’, which leads to a re-evaluation of agency and ownership (Jimerson, 2009). These processes can also be understood as a form of ‘queer rematriation’, that is ‘neither a search for origins, nor a reliance on a future tied to hetero-patriarchal reproductive logic’ (Moore et al., 2023). It is not a return to biological ‘family’ through normative genealogical heritage, but rather a return through inheritance shaped by and through queer temporalities (see Freeman, 2010; Halberstam, 2010) and queer praxis.

Once ‘recovered’ from the attic, and transformed into digital format, with detailed descriptions and proper archiving, the data served as the foundation for various activities. These activities included engagement with youth groups and feminist organizations in Manchester, as well as collective reading sessions within the RAD network. The RAD network comprised members from the original WRAP team, the RAD team, and a diverse range of individuals, spanning from PhD students and early career researchers to senior academics and experienced youth work professionals.

This reconnection, in terms of both time and location, bridged communities of identity from the past to the present. Collaborations with organizations like Feminist Webs—a loose collaborative collective, which is reinvigorating feminist youth work in Manchester and the Northwest of England—enabled us to facilitate intergenerational conversations between the young women who spoke

1 ‘The Women, Risk and AIDS Project (WRAP) Collection’ in *Feminist Approaches to Youth Sexuality* available at <https://archives.reanimatingdata.co.uk/s/fays/page/WRAP>.

in 1989 (mediated through the archival text) and those attending youth groups (2018–2020), as well as project-facilitated workshops.

1.2 Feminist ethics, on care and risk

The WRAP dataset stands as an exceptional collection of frank, and intimate interviews conducted with young women aged between 16 and 25 years. Topics include sexual practices, sexual health, sexual orientation, family dynamics, relationships, and experiences in school and work and are situated within the immediate aftermath of the emergence of AIDS. As such, the dataset is inherently ‘risky’, challenging, and often sensitive. It includes stories of women navigating risky situations and of taking risks (sexual or otherwise).

Revisiting these stories involves its own kind of risk, including the prospect that the content (which includes descriptions of sexual pressure and consensual sex) could be triggering, leading to (re)traumatisation. In this regard, working with the WRAP collection posed ethical and technical challenges. As documented in [Thomson et al. \(2024\)](#) *Revisiting young masculinities through a sound art Installation: what really counts?*, the original data were collected in 1990 on the understanding that participant contributions would be anonymous in any publication. In working with this material, we undertook for the new work to keep within the terms of these original consents. We did not attempt to contact original research participants to renegotiate consent, but did operate a takedown policy for the archival and reanimating work—undertaking to remove data on request.

The decision to keep within the terms of the original consent forms, and to not contact original research participants, was informed by a feminist ethics of care. We considered the benefits of speaking with original contributors versus the potential of causing harm. Our deliberations on this process included self-reflection within the context of our own lived experiences: If we had to confront our younger selves, their words, their trauma, their stories, would we relish the experience, or would it conjure memories that have long since stopped haunting? How would it feel to re-live difficult memories with researchers? Would it feel empowering, or would it feel like an extractive process?

The ultimate decision to not contact or seek out original contributors was risky—what if someone recognized their story in the accessible (but anonymised) archive? Of course, longitudinal studies exist but the original research project was not anticipated to be such. From this perspective, we employed a feminist *ethics of risk*; that is, as [Welch \(1990\)](#) articulates, we took ‘responsible action within the limits of bounded power’ and ‘when control is impossible’. Control in this context referring to the digital archive—once something is published online, we have limited control over its recirculation and duplication. We balanced this feminist ethics of risk, with a feminist ethics of care, of taking responsible action to create ‘the conditions of possibility for desired changes’, while taking precautions to mitigate harm to the young women interviewed over 30 years ago. The ‘desired changes’ were not mere publication of the dataset but instead rooted in archival activism and feminist action. Responsible action then included working in partnership with members of the original research team, further anonymising interview transcripts, and implementing a takedown policy. Ultimately, these decisions, informed and led by

responsible action, created the conditions for ‘desired changes’, particularly in relation to the historical canon and archival praxis.

1.3 Feminist archival praxis, on reanimating and language

We know that traditional archival practices are steeped in bias and privilege, resulting in the erasure or marginalization of certain voices (i.e., those that were not white, cis, men) ([Dever, 2019](#)). The experience of women and gender-diverse individuals, therefore, is often missing from the historical record ([Kumbier, 2014](#); [Bly and Wooten 2021](#)). Therefore, the WRAP is a unique dataset in that it challenges the social norms and conventions of what was traditionally deemed as archivable material—WRAP destabilizes traditional power structures and gives authority to voices traditionally undocumented or deemed unimportant—a 16-year old can authorize their lived experience of society, their history is valid, and they possess political agency. Additionally, we wanted to reanimate the original dataset—to free it from being a social science data set with observable patterns, to return agency and autonomy to the individual voices, and to remove the interpretations and assumptions made by researchers. Allowing the data, the stories and narrative, to exist outside of these confines provided new opportunities for active listening. This was especially evident through the University of Manchester’s Women’s Theater Society performances (Feb. 2020), which were a direct response to the WRAP data.

When working with the material, what the young women in the theatre society notice and are moved by are the interview encounters themselves: the communication that took place between a young women (much like them) and a researcher (not much older). The interview questions were bold, much bolder than would be possible or acceptable today. They found the questions problematic and part of the performance shows their irritation. The young women in the Women’s Theatre Society wanted to do justice to the realness of the young women’s accounts. In doing so they created their own monologues, effectively interviewing themselves but in the context of solidarity from others – both in the present and in the past ([Thomson and Scott, 2020](#)).

These reanimations, and reflections, created conversation and dialog across intergenerational lines, which exemplify the power of rematriation.

We understand rematriation as more than a simple act of return. The process—unearthing of physical material, recovery through digitisation and archiving, and reanimating through participatory engagement—requires considerable resources and an ongoing commitment to the material/data and the voices contained therein. Rematriation is a responsibility after the act of return. It is an engagement with feminist archival praxis to reclaim women’s histories—of access not gatekeeping, of maternalistic care not paternalistic protection, of co-creation and knowledge sharing, and of intergenerational dialog. It is ‘desired change’ and represents political power and semblance of control over narrative where previously none existed ([Webb, 2022](#)). This ‘desired change’ is also in terms of how content, data, and histories are archived (where, how, and by whom).

As such, a major undertaking of RAD was developing the catalog for WRAP interviews and writing the metadata (or data about data). The process reinforced the idea, as Sharon Webb (2023) writes, that Metadata descriptions are political. Writing metadata is not a neutral act—it reflects the writer, the politics of the day, and the perceived social and cultural norms of society. It is an interpretative act, which depends on the knowledge, experiences, and outlook of those writing it (Webb, 2022).

Within this context, the team allocated significant time to developing the subject headings for the archival material. We worked collectively to think through the possible nuances of terms and to generate a controlled vocabulary that was both informed by best practice and by a feminist ethics of care. Two particular subject headings (which become user search terms), ‘lesbian’ and ‘sex worker’, serve as case studies. As Webb (2023) documents in ‘Inclusive Data: Metadata and Descriptive Language’,

Up until 2021, the Humanities and Social Science Electronic Thesaurus (HASSET) controlled vocabulary...preferred term for Lesbian was (Female) Homosexual. This is/was problematic for a number of reasons. First, while some embrace the term homosexual, and even find the term affirming, for many homosexual can be offensive....Second, who among the LGBTQ+ community self identifies as a female homosexual? If terms are not used by the community they purport to represent then the power to describe, becomes the power to other, to categorise as less than.

Additionally, ‘female homosexual’ can also be viewed as trans-exclusive and biologically reductionist (Webb, 2022). In this regard, the power to name is also the power to disempower—to remove agency over identity and to render archival objects inaccessible and unfindable. While this term has since changed in HASSET, the project team took the decision (in 2019) not to use their recommended subject heading, and chose instead to use the subject term used by interviewees, as well as the project, and wider, LGBTQIA+ community.

Discussions over the latter term, ‘sex worker’, were prompted by close readings of the interview transcripts. Some interviewees equated the term ‘prostitute’ with simply enjoying sex. This conflation between moral judgment and sexual pleasure or desire, on the one hand, and an individual engaged in consensual and transactional sex posed challenges in terms of fitting within established controlled vocabularies. Of course, in the majority of cases, ‘prostitute’, which is HASSET’s preferred term whose related topics include ‘exploitation’, ‘sexual offences’, and ‘social problems’,² was used to mean ‘sex worker’. As a team, we reviewed this term in its contemporary and historical usage and decided not to use the term ‘prostitute’ since it replicates and perpetuates stigma. Instead, in the archive, we use ‘sex work’ to refer to consensual, transactional sex, and terms such as ‘first sex’,

‘sexual pleasure’, ‘pressure or coercion’ to differentiate between the two usages. These deliberations and decisions over search terms, logged as part of the project’s documentation, exemplify our obligations to archive in an ethically responsible manner. It also shows how the process of creating metadata can produce insight and engagement around the context through which language gains meaning and connects to broader regimes of authority. In future, our metadata reflections may become ‘part of the data’ in the same way that the original WRAP researchers’ questions became part of the data for the WRAP.

2 Conclusion

The process of archiving and reanimating the WRAP data set was not simply technical. The process itself generated knowledge about ethics, archives, and feminist praxis. The significant challenges we faced demanded that we work slowly, carefully, and in partnerships that enabled us to reconnect places, people, past, and present. Our practice can be located as a kind of slow archiving, as conceptualized by Christen and Anderson (2019), who asserts that a slowing down helps us to focus differently, to listen carefully, and act ethically. This slowing down, formulated through an ethics of care and an ethics of risk, produced archival material that speaks to both the past and the present. This process removes the specter of archival ghosts, voices left lingering, by reanimating within contemporary networks and contexts. By navigating the intersection of ethics, rematriation, and language, the RAD project has not only preserved historical records but also breathed new life into them, fostering a dynamic and ethical engagement with the past.

Data availability statement

The datasets presented in this study can be found in online repositories. The names of the repository/repositories and accession number(s) can be found at: https://sussex.figshare.com/Re-animating_Data.

Ethics statement

The studies involving humans were approved by Social Sciences & Arts C-REC, University of Sussex. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

SW: Writing – original draft, Writing – review & editing. RT: Writing – original draft, Writing – review & editing. NM: Writing – original draft.

² <https://web.archive.org/web/20231128130811/ukdataservice.ac.uk/hasset/en/page/50e41d71-0af3-4aec-be61-3dfcb33c75dd>

<https://hasset>.

Funding

The author(s) declare financial support was received for the research, authorship, and/or publication of this article. The ‘Reanimating data: experiments with people, places and archives’ was funded by the Economic and Social Research Council (ESRC), grant number: ES/R009538/1. This funding supported the development of the FAYS archive, as well as data reanimating and rematriation activities described in the text.

Acknowledgments

The authors acknowledge the work of project team members, Ester McGeeney, Rosie Gahnstrom, and Alex Peverett.

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OPEN ACCESS

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RECEIVED 13 February 2024
ACCEPTED 26 August 2024
PUBLISHED 08 January 2025

CITATION
Willcox M (2025) Algorithmic agency and
“fighting back” against discriminatory
Instagram content moderation:
#IWantToSeeNyome.
Front. Commun. 9:1385869.
doi: 10.3389/fcomm.2024.1385869

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Algorithmic agency and “fighting back” against discriminatory Instagram content moderation: #IWantToSeeNyome

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Instagram influencers of marginalized identities and subjectivities, for example those that are plus sized or people of color, often express that their content is moderated more heavily and will sometimes place blame on the “the algorithm” for their feelings of discrimination. Though biases online are reflective of discrimination in society at large, these biases are co-constituted through algorithmic and human processes and the entanglement of these processes in enacting discriminatory content removals should be taken seriously. These influencers who are more likely to have their content removed, have to learn how to play “the algorithm game” to remain visible, creating a conflicting discussion around agentic flows which dictates not only their Instagram use, but more broadly, how creators might feel about their bodies in relation to societal standards of “acceptability.” In this paper I present the #IWantToSeeNyome campaign as a case study example which contextualizes some of the experiences of marginalized influencers who feel content moderation affects their attachments to their content. Through a lens of algorithmic agency, I think through the contrasting alignments between freedom of expression and normative representation of bodies in public space. The Instagram assemblage of content moderation, presents a lens with which to view this issue and highlights the contrast between content making, user agency, and the ways more-than-human processes can affect human feelings about bodies and where they do and do not belong.

KEYWORDS

content moderation, feminism, gender, algorithms, agency, Instagram, social media, race

Introduction

Instagram influencers of marginalized identities and subjectivities, for example those that are plus-sized or POC, often express through their social media that their content is moderated more heavily and will sometimes place blame on what they call “the algorithm” as the source of their feelings of discrimination. Marginalized influencers’ claims that “the algorithm” engages in discriminatory practices of content removal should be taken seriously. It is well known that biases in social media content moderation perpetuate discrimination in society at large (Noble, 2018; Gillespie, 2024), but, biases are also co-constituted through an entangled algorithmic and human process. As Gerrard and Thornham (2020) describe:

Machine learning moderation compares content with existing data, which means unique content needs to be already normative, or at least ‘known’ for machine learning moderation to ‘see’ it as a constitutive element to prompt action, such as deletion ... When content is flagged, it is often redirected to a human commercial content moderator (CCM) who is given ‘seconds’ (Roberts, 2017b) to decide if it should stay or go. (p. 1269).

The content moderation described here is just one of the ways that content is filtered through Instagram, as sometimes content moderation is outsourced to users to “flag” certain content as inappropriate, and this is fed into moderation algorithms (Crawford and Gillespie, 2016). Whether done by algorithmic processes or by humans, this process of mediating and moderating content is based on existing *normative* assumptions about bodies and moralities, and reflects current issues and topics which affect everyday life (such as the over policing of fat bodies, queer bodies and people of color in public spaces). This is also the case with generative AI, LLMs (Rogers and Zhang, 2024), and the replication of content, as Gillespie notes “generative AI tools tend to reproduce normative identities and narratives, rarely representing less common arrangements and perspectives. When they do generate variety, it is often narrow, maintaining deeper normative assumptions in what remains absent” (2024, p.1).

The two images below (Figure 1) are examples of this over policing and expressed discontent by influencers about discriminatory content removals. The image on the left is of Nyome Nicholas-Williams (@curvynyome) doing an AMA.¹ Nicholas-Williams is a public figure and the face of a social media campaign called #IWantToSeeNyome, which focuses on body positivity and the policing of plus-sized, Black women on Instagram through content moderation. The campaign was started in London by model Nicholas-Williams, activist campaigner Gina Martin and photographer Alexandra (Alex) Cameron. The image on the right posted by Martin (@ginamartin) showcases the cultural significance of the movement for local Londoners through the graffiti art spotted around London at the time. In this paper I present the #IWantToSeeNyome campaign as a pop cultural example that contextualizes some of the experiences of marginalized influencers who express discontent at their social media content being flagged or removed, specifically content of their own bodies.

1 AMA means “ask me anything” and is a function on Instagram Live.

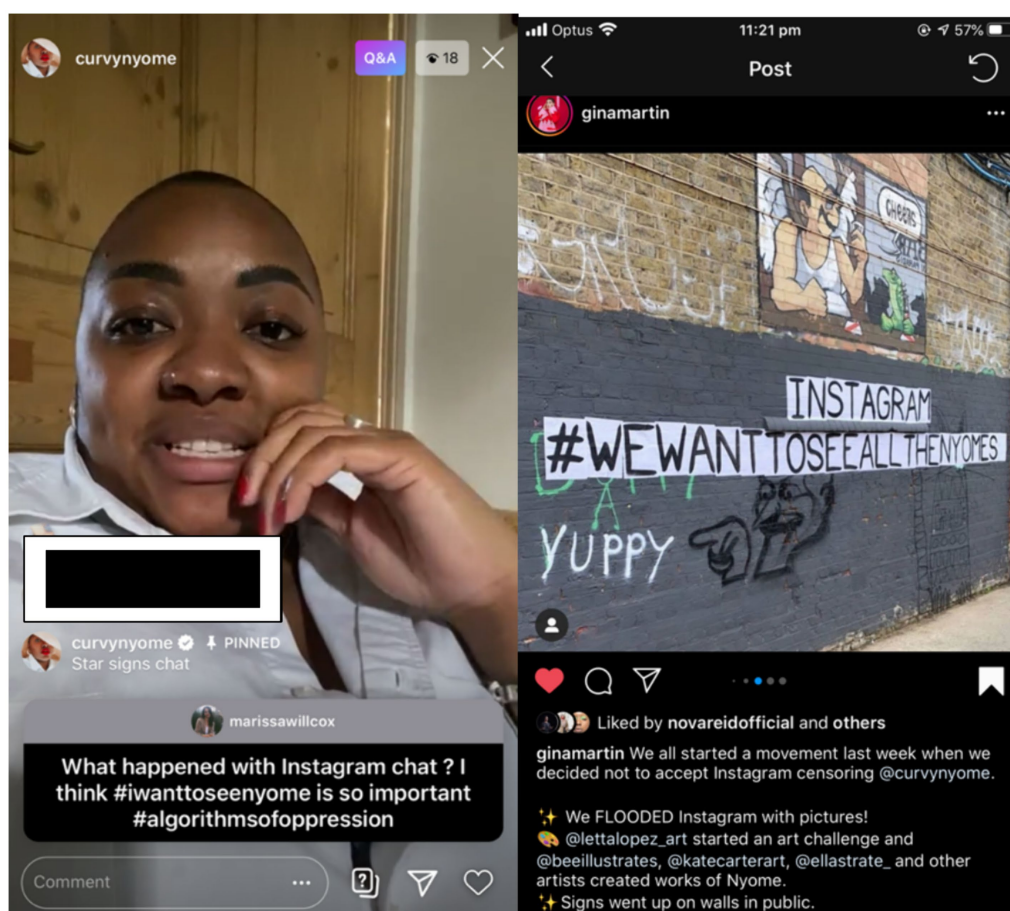


FIGURE 1
@curvynyome and @ginamartin posting about the #IWantToSeeNyome campaign. Reproduced from Instagram with permission of @curvynyome and @ginamartin.

Though part of Instagram's community guidelines outline what seems to be a reasonable way of deciphering what can and cannot be posted to Instagram's public platform, the moderation of creative works in response to what Instagram deems as appropriate or not can, in practice, sometimes reinforce existing racist (Noble, 2018; Haimson et al., 2021; Siapera and Viejo-Otero, 2021) and sexist (Gerrard and Thornham's, 2020; Are's, 2022; Paasonen et al., 2024) stereotypes around which bodies are allowed to be naked in public space and which are not. The case study of the #IWantToSeeNyome campaign serves as a connector in this paper of three disparate focuses of the research; the theoretical exploration of algorithmic agency, how content moderation practices on Instagram reflect cultural biases, and a discussion of the emotional and affective attachments creators can have to their Instagram content. I have drawn this case study from a larger ethnographic project, in

which I use digital ethnographic methods, including interviews and Instagram Live interviews (Willcox, 2023) to understand how feminist and queer content creators make spaces of belonging online. Nicholas-Williams was not a participant of the larger study, and I did not conduct an interview with them, but instead used content analysis and digital ethnography to understand and trace the ways this social media campaign reflected current cultural narratives around felt experiences of content moderation for marginalized influencers.²

2 Due to the limitations of this paper format and length, the content of the case study rather than the methodological explorations from the project are discussed here.

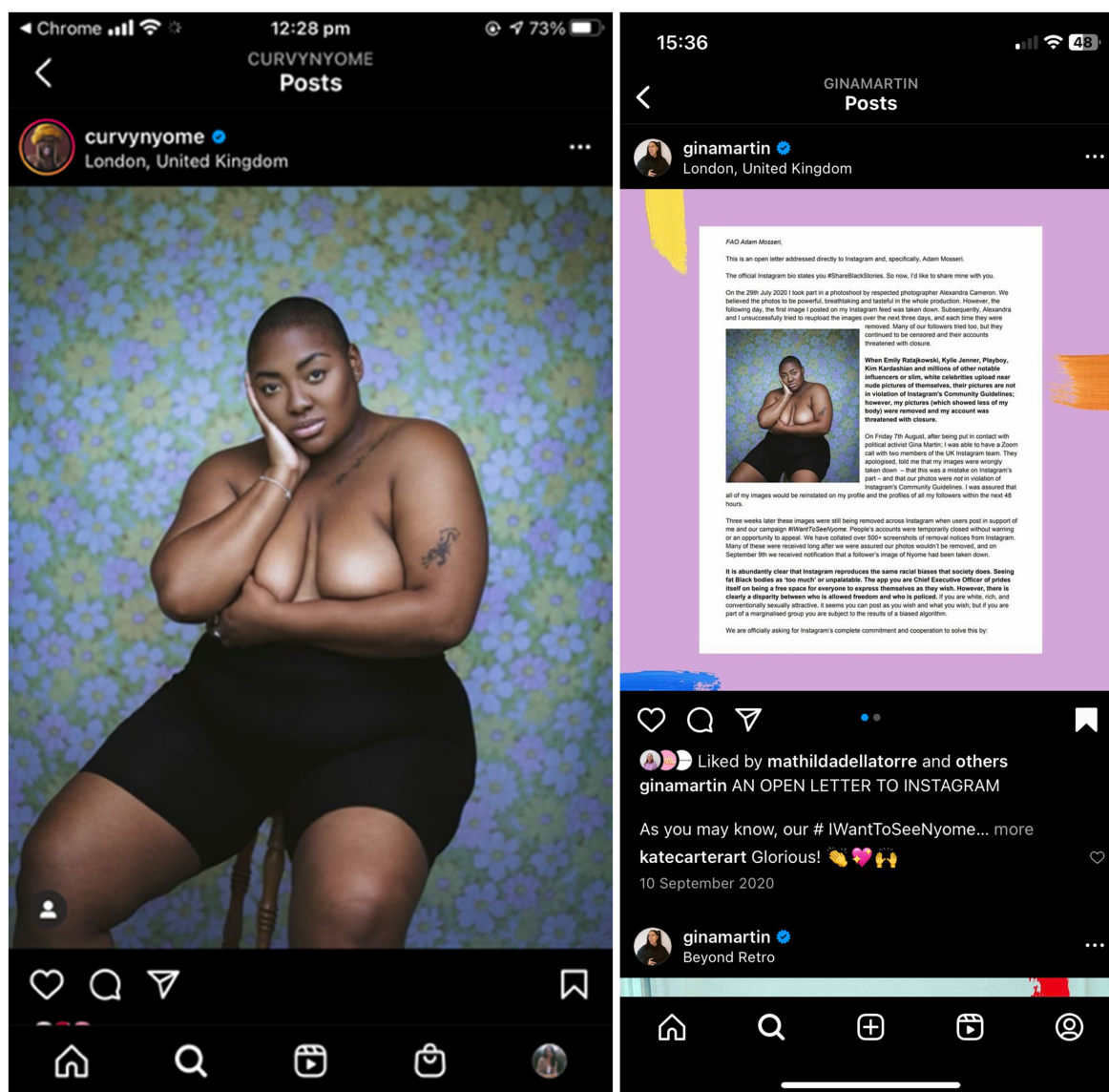


FIGURE 2
Nicholas-Williams' post and letter to Instagram. Reproduced from Instagram with permission of @ginamartin.

#IWantToSeeNyome and “fighting back”

The #IWantToSeeNyome campaign arose in response to Nicholas-Williams posting this photo (Figure 2) to her Instagram feed, a self portrait taken by Alexandra Cameron, and it almost instantaneously being removed due to Instagram’s policy around breast exposure.

Nicholas-Williams, Martin, Cameron and their followers argued that Instagram was censoring Black, plus-sized bodies more often than white, thin bodies in similar photographic poses. To illuminate this, they urged their Instagram followers to post this same photo (Figure 2) to their feeds with the hashtag #IWantToSeeNyome and then to send them screenshots if it was taken down (which happened often). About 1,000 instances of the image being removed from different people’s pages was recorded.³ Later, a letter was sent to Instagram by the creators and activists about this incident, asking Instagram to review their policy so as not to engage in discriminatory content removals. To prove this as a discriminatory practice, Nicholas-Williams’ images, the screenshots of the removals and other images of white and thin women posing in the same way was sent to Instagram (Figure 3).

³ See letter posted to Gina Martin’s page and sent to Instagram (Figure 2) noting the amount of times the image was removed on follower’s pages.

In their campaign, Nicholas-Williams, Martin, and Cameron suggested this removal practice presents a racist and patriarchal double-standard in content moderation due to the evidence of white thin women in the same pose not having their content removed. This claim is difficult to prove, from the perspective of the Instagram user, because much of the content that gets moderated is inconsistent with the guidelines. From their study on underweight, mid-range and overweight women and their removal of images on Instagram, Witt et al. (2019) note that “concerns around the risk of arbitrariness and, indeed, ongoing distrust of the platform among users, are not unfounded. The empirical results are statistically significant” (p. 3). Their analysis of image removal found there was a large number of false positives, or images, which were removed even though they “matched” the community guidelines. This speaks to some of the confusion associated with the process of content moderation, which is arguably a practice made to be intentionally confusing by platforms to keep users from having control, even of their own content (Pasquale, 2015; Gillespie, 2018). An article by Gillespie (2022) notes that rather than fully moderate or remove content, many platforms now use machine learning algorithms to reduce the visibility of content deemed as “risky enough” in order to evade critique for their policies on moderation. One of these content reduction practices is popularly known as “shadowbanning.” According to Middlebrook (2020) shadowbanning is a way of subversively hiding accounts through making them not visible through the explore page, hashtags or certain search terms. This leads to reduced visibility for people who create content that is

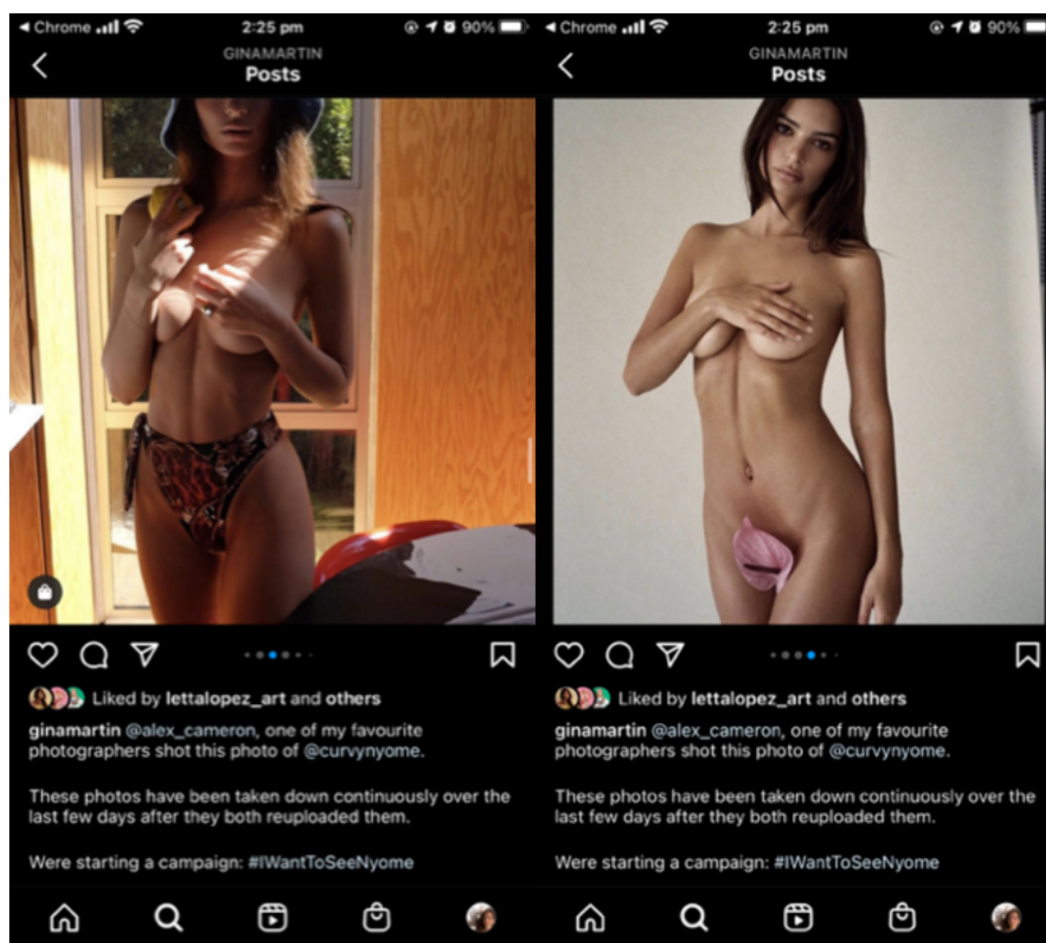


FIGURE 3
Examples of what does not get deleted, posted by Gina Martin. Reproduced from Instagram with permission of @ginamartin.

non-normative (Waldman, 2022). Gillespie, in his discussion of the politics of visibility using generative AI, stresses that by “examining how generative AI tools respond to unmarked prompts...when cultural categories and identities went unmarked in the prompt, non-normative alternatives rarely appeared in responses” (2024, p. 9). This shows a problematic consensus across content moderation and content generation, where reproducing and moderating is based on a societal *norm* which is often biased, privileging the content of the dominant and oppressive cultural and social groups.

Content moderation at Instagram is designed to be difficult for users to understand. It is precisely because this process lacks transparency, that Nicholas-Williams, Martin and Cameron wrote a letter to Instagram about its policy around moderation. The influencers noted this was a way of “fighting back” against discriminatory content removal practices. Nicholas-Williams’ edited Instagram caption about the letter that was sent to Instagram says:

Who knew these images @alex_cameron captured of me would start such a movement, I will not call them a problem as they are far from it. They have however opened up a much bigger conversation that must be had regardless of discomfort, and it is even more of an issue now as @mosseri pledged to amplify Black voices back in June when speaking to Cosmo about the shadowbanning ‘accusations’... As we can see nothing about that pledge has come to fruition ... if anything it has gotten worse. This is only the beginning @instagram has a lot to answer for.

As Nicholas-Williams, Martin and Cameron argued throughout the campaign, removing images of plus-sized, Black women but not those of thin, white, women demonstrates the ways patriarchal and racist biases can be built into moderation algorithms (which Instagram often claims are objective or unbiased) (Bonini and Tréré, 2024). Gerrard and Thornham’s (2020) study highlights that there is a “pervasive platform policing of the female body in particular” and that there is a “call within platforms’ community guidelines for users to surveil and problematize each other’s bodies by flagging content they think glorifies eating disorders” (p. 1278). This is part of a much bigger issue, which Nicholas-Williams calls attention to. Whether bodies are moderated by other humans and/or by moderation algorithms, there is a need to focus on how some Black, plus-sized women feel their bodies are being policed more heavily than others’ bodies in public online spaces (Faust, 2017; Nash, 2019; Middlebrook, 2020; Hattery and Smith, 2021; Elkin-Koren et al., 2022; Bonini and Tréré, 2024). The tension in this argument is highlighted in recent posts from Nicholas-Williams responding to the lack of advancement in the movement, which I discuss in a latter section (Figure 4).

The algorithm

Influencers across platforms often state in their content that they are unhappy with their content removals, and many make “back up accounts” to ensure that if they are shadowbanned or their account access gets removed that they have a space to continue creating. Glatt (2022) writes about this with YouTube influencers where “the algorithm” is often positioned as a “powerful character” in the professional lives of content creators (p. 2). The conflation of many algorithmic systems into considering the algorithm as one oppressive tool is likely derived from a myriad of factors, one of which can be linked to the “imagined affordances” (Nagy and Neff, 2015) of the platform as there are certain “expectations for

technology that are not fully realized in conscious, rational knowledge” (p. 1). Influencers targeting “the algorithm” as the source of blame for their content being moderated is an oversimplified notion, as there are many algorithms at Instagram which sort, rank and filter content and many influencers are aware of this. However, the emotive posts about content removal by those in the #IWantToSeeNyome campaign demonstrate the emotional and affective attachments that Instagram influencers can have to the ways their Instagram content is moderated by more-than-human processes.

There are conflicting elements of agency and control associated with making creative content for a platform like Instagram; these rely on algorithmic processes to sort and rank which content gets seen and which does not. This points to the discursive and sometimes unsaid knowledge and experience that Nicholas-Williams highlights when they are angry at the algorithm for removing their images about Black, plus-sized bodies. It becomes less about focusing on algorithmic processes themselves and more about the power that social media platforms have (through algorithms) to mediate, and indeed, moderate human (perceptions of) bodies that I unpack here.

I discuss this experience of moderation through a lens of agency by looking at Nicholas-Williams’ campaign, and the ways the more-than-human process of content moderation creates a sense of discontent about which bodies belong in Instagram and which do not. This critical analysis speaks more broadly to my discussion of the ways the more-than-human elements of Instagram can shape human perception and experience of bodies and belongings (Willcox, 2023).

Algorithmic agency

Algorithms, which are a series of numbers and characters (code) that work as programs within machines to learn and make decisions, do have material agency, but their agency is reliant upon human intervention and interaction. They operate through logic systems modeled on human forms of reasoning (Wilson, 2017, p. 141; see also Bryson, 2020). Bucher (2018) suggests that “we conceive of government and governmentality as particularly helpful concepts in understanding the power of algorithms. Algorithms do not simply have power in the possessive sense; they constitute ‘technologies of government’” (p. 37). Operating as *instruments*, algorithms become tools through which prediction can create certain outcomes. One way that Bucher describes this is through a broad lens of “distributed agency.” For Nicholas-Williams this distributed agency can be seen in how they ask their followers to post the same image (which was originally deleted from their profile) to their own profile grids to see if it is deleted as quickly. This distribution of the moderation to other users also relates to the question Bucher asks: “If algorithms are multiple and part of hybrid assemblages ... then where is agency located? Who or what is acting when we say algorithms do this or that?” (2018, p. 51). Here, with #IWantToSeeNyome we see a mediated process of “distributed agency” which shows how human intervention in algorithmic content moderation can alter subjective experiences of some Instagram users. Bucher quotes Barad in stating that “agency is not an attribute that someone or something may possess, but rather, a name for the process of the ongoing reconfiguration of the world” (2018, p. 51). Agency in algorithmic systems and cultures is, therefore, distributed among and within human and non-human entanglements; it flows and changes with time and place. Barad (2007) describes how “agency is ‘doing’ or ‘being’ in its intra-activity. It is the enactment of iterative changes to particular practices ... Agency is

about changing possibilities of change entailed in reconfiguring material discursive apparatuses of bodily production” (p. 178).

Both Bucher’s and Barad’s accounts of agency offer the possibility of reconfiguring the concept of agency from that which is situated in one thing or another to the act of doing, being or becoming in between, with and through different actors. “The space of agency is not restricted to the possibilities for human action. But neither is it simply the case that agency should be granted to non-humans as well as humans” (Barad, 2007, p. 178). This is particularly relevant when considering the structure of agency and control as a process of push and pull between the Instagram users in this research and the algorithmic processes which affect their feelings of agency. Through analyzing the dynamics between the #IWantToSeeNyome campaign and the reactions from Instagram’s head Adam Mosseri, it becomes clear how this process affects certain user’s perceptions of content moderation as racially biased and fatphobic. Additionally, by Nicholas-Williams, Martin and Cameron asking their followers to also post the removed image to their own pages and screenshot the removal, they engage a broader community in the algorithmic process, documenting the discriminatory removal for a campaign and proposed policy revision.

Layers of agency in content (over) moderation

Caroline Are (2022) studies the Instagram shadowban in relation to sexy or spicy content through an autoethnographic approach, documenting her experiences both as a pole dancer and an Instagram creator. She finds that,

Instagram’s governance of bodies has been found to rely on old-fashioned and non-inclusive depictions of bodies... using standards more akin to sexist advertising (Sparks and Lang, 2015) than to the progressive sexual practices showcased by the platforms’ own users. Shadowbans are a key technique through which these standards are implemented. (p. 2003).

In her experiences of her pole dancing content being removed from her @bloggeronpole Instagram account, Are expresses that there is a “sense of powerlessness arising from content posted into a void, particularly after the aforementioned digital labor of crafting posts in the hope to reach old and new audiences” (2022, p. 2014). This power imbalance, where users are not given the agency to post images of their own bodies, or know about their content being secretly censored via a shadow ban, shows

a lack of clarity and overall sense of discrimination [which] raises questions about the platforms’ role in policing the visibility of different bodies, professions, backgrounds, and actions, and their role in creating norms of acceptability that have a tangible effect on users’ offline lives and livelihoods, as well as on general perception on what should and should not be seen (Are’s, 2022, p. 2016).

Are’s (2022) analysis of “the shadowban cycle” from personal experience points also to the sense of powerlessness which Nicholas-Williams feels when posting her self-portrait and having it removed. This, and the statement that “It took me a long time to be comfortable and confident in my frame. I will not be policed; my body will not

be censored” (Nicholas-Williams, Figure 4) highlights the multiple ways personal feelings of bodily and sexual expression are negatively impacted by content removals and shadow banning. More-than-human algorithmic processes are shown here, to affect human experiences of agency when engaging especially in posting images about user’s own bodies.

In the image on the left, Nicholas-Williams says, “It’s all well and good putting my image back up but why do you continually take them down from everyone else’s stories and grid when support wants to be given so that CHANGE can be implemented?” In the image in the center, the CEO of Instagram, Mosseri, responds to the news coverage around the campaign by saying that “people cannot be free to express themselves if they do not feel supported”; Nicholas-Williams posted this response to her story. In the image on the right, Nicholas-Williams describes her interaction with Instagram around policy change and how she intends to combat the discrimination faced by the plus-sized and Black community. The language she uses in these posts around *protecting* and *expressing* demonstrates the emotional and embedded ways Instagram content is, for some people, an expression of self, and that policies around algorithmic content moderation need to be careful to *protect* minoritized groups from being further marginalized or excluded. The quote also points to the ways algorithmic processes and policies feed back into user interpretation of the platform.

This series of interactions between the user (Nicholas-Williams) and the platform (Instagram) shows how the layers of control and agency are negotiated differently for marginalized people entangled in algorithmic systems (Duguay et al., 2020). Bucher and Helmond (2017) describe this relationship as a “feedback loop” which builds a protocol for interacting through the “generative role of users in shaping the algorithmically entangled social media environment” (p. 28). The notion of feedback loops conceptually highlights the complex, non-linear structure of automated content moderation. “While algorithms certainly do things to people, people also do things to algorithms” (Bucher, 2019, p. 42). As I point out through my analysis of the #IWantToSeeNyome campaign, “the social power of algorithms—particularly, in the context of machine learning—stems from the recursive ‘force-relations’ between people and algorithms” (Bucher, 2019, p. 42). Therefore, the ways that users like Nicholas-Williams approach platform usage is affected by how they engage with algorithmic processes. In turn, since social media environments are also affected by algorithmic processes, such as content moderation, everyday platform usage is reflective of normative assumptions made by users. Put simply, it is not a matter of placing blame on the user or the platform for issues of racialized or sexualized content moderation, but rather, seeing this type of moderation as part of an iterative and entangled relationship which is based on (often racist and sexist) societal norms. My analysis of the #IWantToSeeNyome social media campaign, and the ways Nicholas-Williams and Mosseri discuss the process of content moderation and its socio-technical elements of inclusion/exclusion, shows the nuanced ways we need to think through, as a collective community of scholars and social media users, the impacts and the affective responses that over moderating content has on certain marginalized bodies. Rather than look at content moderation through a lens of risk and safety, platforms might also take up the call to allow for more user agency in content creation. As creator expression is what drives platform profit and engagement, their needs and discontents should be taken seriously.

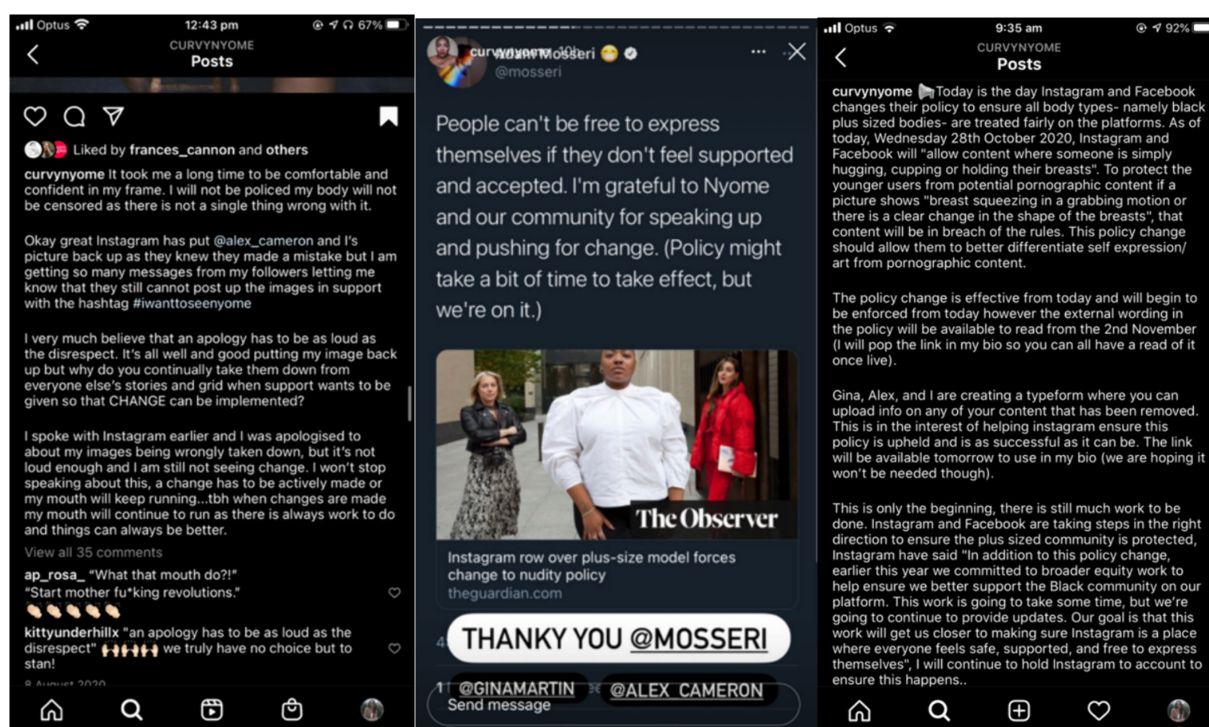


FIGURE 4
Nicholas-Williams' responses to Instagram. Reproduced from Instagram with permission of @curvynome.

Conclusion

Content moderation at Instagram is both a human and automated process. Moderation and machine-learning algorithms, users that flag content, and people who work as content moderators have agency in deciding what content gets flagged or deleted from people's pages. This process is reflective of normative biases around bodies. In response to this action of content moderation of certain bodies over others and this feeling of "powerlessness" (Are, 2022) over "my body being censored" (Nicholas-Williams), influencers learn how to do what Cotter (2019) calls "playing the algorithm game" (Cotter, 2019) where they make content that fits within the content moderation rules in order to remain visible and keep their account access. Through my case study analysis, I present an example of how this creates a conflicting discussion around agentic flows which dictates not only creator's Instagram use, but more broadly, how creators might feel about their bodies. I make this point through drawing on the work of Bucher (2018) and Barad (2007). While the contrasting alignments between freedom of expression and *normative* representation around bodies is not a new one—the Instagram assemblage of content moderation presents a new lens with which to view this issue as a broader societal issue which needs to be addressed both by platforms and through user agency and engagement.

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.

Ethics statement

Ethical approval was not required for the study involving human data in accordance with the local legislation and institutional requirements. Written informed consent was not required, for either participation in the study or for the publication of potentially/indirectly identifying information, in accordance with the local legislation and institutional requirements. The social media data was accessed and analyzed in accordance with the platforms' terms of use and all relevant institutional/national regulations. RMIT Ethics committee Project number: CHEAN A&B 21229-11/17 Risk classification: Low Risk.

Author contributions

MW: Writing – original draft, Writing – review & editing.

Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

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OPEN ACCESS

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RECEIVED 01 February 2024

ACCEPTED 20 January 2025

PUBLISHED 30 January 2025

CITATION

Shukla N (2025) Investigating AI systems:
examining data and algorithmic bias through
hermeneutic reverse engineering.
Front. Commun. 10:1380252.
doi: 10.3389/fcomm.2025.1380252

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Investigating AI systems: examining data and algorithmic bias through hermeneutic reverse engineering

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Considering Artificial Intelligence systems as boundary objects, which are interdisciplinary objects sustained differently by diverse fields while providing shared discourses between them, this essay summarizes the approaches of examining bias in AI systems. It argues that examining each part related to the building and working of AI systems is essential for unpacking the political play and potential insert points of biases in them. It concentrates on the critical analysis of data and algorithms as two core parts of AI systems by operationalizing hermeneutic reverse engineering. Hermeneutic reverse engineering is a framework to unpack and understand different elements of a technocultural object and/or system that contribute to the construction of its meaning and contexts. It employs a speculative imagination of what other realities can be designed and includes cultural analysis to identify existing meanings and assumptions behind the technocultural object, identifying key elements of signification, and speculating possibilities of reassembling different meanings for the object. The main results obtained by this method on AI systems is using cultural consideration and technological imagination to unpack existing meanings created by AI and design innovative approaches for AI to exert alternate/ inclusive meanings. The research perspectives presented in this article include critical examination of biases and politics within different elements of AI systems, and the impact of these biases on different social groups. The paper proposes using the method of hermeneutic reverse engineering to investigate AI systems and speculate possible alternate and more accountable futures for AI systems.

KEYWORDS

boundary objects, hermeneutic reverse engineering, critical data studies, critical algorithm studies, critical code studies, critical artificial intelligence studies

Introduction

Artificial Intelligence (AI) systems are digital technologies that learn on their own through the data they are trained on, algorithms they are modeled on, and feedback given to them. AI systems, like all other technologies (Winner, 1986), have politics and exercise power. Examples of these politics are visible all around us. Bias based on race, gender, ability, language, class, economic background, and religion, among many other indicators, perpetuating in the AI systems are not just a glitch or an error, but systemic coding of the dominant social fabric (Geburu, 2020; Broussard, 2023). AI systems systemically and structurally enact discrimination and oppression because they are neither inclusive nor do they acknowledge the people, groups

and perspectives they exclude (Broussard, 2019; Crawford, 2021), such as women, people of color, disabled people, and queer people (Buolamwini and Gebru, 2018; Broussard, 2023). The AI Systems operate on an asymmetric power dynamic wherein the groups most impacted by the results of injustices enacted by AI are often devoid of resources to design and deploy these systems (Whittaker et al., 2019, p. 9).

Two ways in which this exclusion is practiced is through a lack of documentation and the domination of hegemonic narration in expert discourses around AI systems. The exclusion practiced in documentation stems from a lack of consideration about whose data is collected, why is that data collected, which computational logics are used on that data, and what or whose purposes are served using results from that data. As Benjamin (2019, p. 1–48) states, “engineered equity” of AI systems either practices “default discrimination” to ignore marginalized people or practices “coded exposure” to overexpose the minoritized groups for extra surveillance. For example, a face detection AI failed to detect Buolamwini’s (2023, p. 13) dark-skinned face as a black woman, but the same AI instantly detected a human face when she put on a plain white mask. This happened because the “coded gaze” (Buolamwini, 2023, p. 13–21) of AI was not trained to see dark skinned faces and detected only light skin. Such errors are possible when the system is trained and coded with data and algorithms that consider light skin as the norm (Buolamwini, 2023). It fails to recognize any face that does not belong to the societal definitions of race and gender that were fed into it during its creation and re-enacts the default social discrimination (Benjamin, 2019; Buolamwini, 2023; Gebru, 2020).

The politics of AI are visible through the biases they exhibit, societal disparities they reflect, the impact they create, and disciplines from which they emerge (Benjamin, 2019; Eubanks, 2019; Keyes, 2018). These politics are visible through the popular discourses within the fields that influence its technological practices. Keyes (2018) showcases how a conventional binary understanding of “gender” within tools of Automatic Gender Recognition (AGR) and the field of Human Computer Interaction (HCI) operationalizes non-inclusive and harmful technologies for transgender people (Keyes, 2018). Thus, to not limit the world view and formulate inclusive AI systems, it is essential in our analysis to incorporate knowledge and practices from different fields. In a study on meaningful digital connections and digital inequality, Katz and Gonzalez (2016) showcase the effectiveness of multilevel research. This approach accounts for influences of and toward technological adoption and engagement at different levels like individual, family and community (Katz and Gonzalez, 2016). Such a multilevel approach can be adopted into the study of the power and politics of AI systems by questioning their components individually and examining the effects of AI use and outputs at different levels of human existence, namely, the level of the individual, the family and the community.

This investigation of AI systems can be conducted considering them as boundary objects (Star, 2015) in the fields of critical data studies, critical algorithm studies, critical code studies, and feminist science and technology studies, and using the tools and approaches given by each of these fields to investigate different facets of existence and the execution of various AI systems. This includes the data used to train and test them, the algorithmic logics used to make them, the programming code used to execute them, and the impact created by using them (Crawford, 2021). As in the case of most digital

technologies that use AI, the systems’ data and algorithms cannot be accessed as they are proprietary information (Bucher, 2018). But one way in which the biases of technologies can be understood, identified and examined is by using hermeneutic reverse engineering (Balsamo, 2011, p. 13–17). This essay summarizes different approaches outlined by the aforementioned fields to unpack the power and politics of AI as executed by each of its parts and then advocates for the use of hermeneutic reverse engineering (Balsamo, 2011, p. 13–17) as a method to investigate AI systems.

Hermeneutic reverse engineering

Hermeneutic Reverse Engineering, as suggested by Anne Balsamo in *Designing Culture* (Balsamo, 2011, p. 13–17), is a framework for constructing meaning around existing technocultural assemblages or a network of objects that hold both technical and cultural significance (Balsamo, 2011, p. 13–17). It is a systematic process which includes steps for cultural analysis and technological reverse engineering to identify key elements of the system that construct meaning for its existence and output (Balsamo, 2011, p. 13–17). Identifying key elements helps in understanding implicit assumptions and formative structures within the system (Balsamo, 2011, p. 13–17). These signifying elements are then interpreted and highlighted in different socio-cultural contexts to elucidate how they operate differently in different scenarios (Balsamo, 2011, p. 13–17). This process leads to an exploration of different meanings, contexts, and outcomes that can be created from them (Balsamo, 2011, p. 13–17). The iterative steps of this process are: observation and description, analysis, interpretation, articulation, rearticulation, prototype, assessment, iteration, production, reflection, and critique (Balsamo, 2011, p. 17).

Using hermeneutic reverse engineering to understand AI systems helps in questioning the biased hegemony present in current AI systems through the lenses of different fields in which they exist. Hermeneutic reverse engineering for AI involves using technological imagination to reconstruct AI that is based in intersectional feminist thought of acknowledging and understanding interlocking systems of structural oppression as stated by the “Combahee River Collective Statement” (Combahee River Collective, 1978, p. 362). Rather than casting AI systems as mysterious, the agency can be shifted, and the AI systems can be unpacked by reverse engineering the black box they seem to present (Bucher, 2018). The learning process of the algorithms along with the processes of establishing their agency and exercising control can be understood through this (Crawford, 2021). Their functioning can also be reimagined if placed in the context of counter narratives that remain hidden in the default hegemonic view (Abbate, 2012). This process can be used to understand the difference in the intended/ unintended and avoidable/ unavoidable biases and politics existing within the data and algorithms of AI systems (Broussard, 2019).

Examining the politics of data

The field of critical data studies understands that one of the ways in which AI produces and reproduces power and politics is through datasets that are partial and biased (Chadarevian and Porter, 2018; Miceli et al., 2022; Crawford, 2021). After collection, data is often disconnected from its history, people, and context of collection (Gebru, 2020; Chadarevian

and Porter, 2018). This disconnection masks underlying subjective meanings of data and wrongfully brands the quantification of data as purely objective (Gitelman and Jackson, 2013). The discriminatory decisions made automatically by algorithmic systems are based on dominant ideologies (Eubanks, 2019), and stem from the loss of context of the original data. Because of this loss of context, the data remains partial and creates problems, like (i) people losing control over their data and how its continuous analysis impacts them (Radin, 2017; Willse, 2015); (ii) algorithms built on the data producing results that are stereotypically biased (Musto, 2016); (iii) algorithmic outputs reproducing power relations (Jefferson, 2020); and (iv) reinforcing and multiplying the bias by using prejudiced outputs as inputs for other algorithms and tasks (Buolamwini and Gebru, 2018).

“Big data” enacts power and politics. While the technical rhetoric around big data is that it is objective and neutral, big data, which is essentially huge collections of data, is subjective and biased (Gitelman and Jackson, 2013). It has partial and contextual stories encoded in numbers, and not overarching generalized truths (Gitelman and Jackson, 2013; Roberge and Seyfert, 2016). Datasets like ImageNet, a collection of human faces, is a collection of images annotated and labeled by humans, and thus organized in political taxonomies laden with implicit assumptions, ideologies, subjectivity, and hierarchical classification (Crawford and Paglen, 2021).

Databases are cultural narratives, that is, they are networked and subjective accounts at individual and cultural levels (Paul, 2007). Their formation is not merely based on data they possess, but also around whose data it is, whose stories it represents, how that data is organized, who organized it, and what meanings can be derived from them (Paul, 2007). The different aspects of examining data of AI systems includes investigating different stages of the data life cycle, such as data collection, categorization, translation, annotation, labeling, storage, use, and access. If data is not directly and freely available, the only way to understand the possibilities of what kind of data might have been used to train the algorithmic model, is to analyze the patterns in output of the algorithmic system (Chun, 2021).

Examining the politics of algorithms and code

The field of critical algorithm studies identifies that another way in which AI produces and reproduces power and politics is through the politics of machine learning algorithms which lie in the realities they create. According to Taina Bucher (2018, p. 1–18), the realities created by algorithms are the result of “programmed sociality” coupled with algorithmic decision making. Bucher’s (2018, p. 1–18) notion of “programmed sociality” refers to the use of computation for the purposes of influencing societal actors and functions. This process of influencing is performed in two parts: (i) how the algorithm is built (that is, the decisions made while building it); and (ii) by enabling the algorithm to make certain kinds of decisions during its execution (Bucher, 2018 p. 1–18).

The algorithmic processes are political as they give only certain outputs and encourage only certain kinds of scenarios to take place. They create biased realities which represent differential power equations among different societal groups (Bucher, 2018). These realities can be studied by questioning which groups are included and/or considered while designing algorithmic realities, and which groups are excluded

and/or overlooked (Benjamin, 2019). An example of this is apparent in case studies around Google Image Search and Google Photos. For Noble (2018, p. 1–14), searching the term ‘three black teens’ gave mugshots of Black teenagers, while the search term ‘three white teens’ gave wholesome photographs. Gebru (2020, p. 21–22) writes about a Google Photos incident where Black people were misclassified as gorillas. Such misclassifications are not arbitrary and are rooted in racist and discriminatory history (Gebru, 2020). Noble (2018, p. 1–14) uses the concept of “technological redlining” to explain the practices of enforcing and maintaining power by these digital methods of oppression by attaching racist and sexist connotations to different search terms.

The misclassifications and discriminatory biases seen in algorithmic results are not arbitrary. They are rooted in racist and discriminatory history (Gebru, 2020) and are reflections of implicit biases embedded within the institutions that designed these systems (Noble, 2018). They create structurally discriminatory systems coded with societal inequalities and inequities (Katz, 2020). This happens because the only social and human context that AI systems have is the way in which they are programmed, which includes the data they are fed, and the algorithm and code which they use to make sense of that data (Katz, 2020). AI systems are based on social assumptions that they reify and reproduce and are neither neutral nor objective (Bucher, 2018).

Machine learning algorithms exist in multiplicities, that is every time they are executed, they calculate possibilities of various results and then decide the best option for the given input and function at hand (Bucher, 2018; Roberge and Seyfert, 2016). So, each time a decision is made on how to process the input and how to select and display the output, it is a political move (Roberge and Seyfert, 2016). Exploring the political economy of AI reveals that the primary goal of AI systems is not to serve its users, but in fact to serve the commercial goals of the companies that build them (Noble, 2018; Benjamin, 2019).

The algorithm can also be questioned using Marino’s (2020) critical code analysis. While most of the code of AI systems is hidden, codes for certain generic foundation models which can be fine-tuned further, are open source and available on websites like Hugging Face and GitHub. The method of critical code analysis considers the source code of an algorithmic system as a social text whose meaning develops and transforms depending on readers and context (Marino, 2020). This is done using tools of semiotics, cultural studies and critical theories to unpack meanings of codes that are contingent on context and evolve based on the functional use of that code (Marino, 2020). Reading code critically means unpacking the significance of code’s symbolic structures, their effects and their execution, within the cultural moment in which they were developed and deployed (Marino, 2020). Analyzing open-source programming is useful to critically analyze the codified sentiment of the power and politics of AI systems. Thus, most of the black box politics of the algorithm of AI systems can be interrogated by closely observing the output of the AI system for different prompts, to understand hidden meanings of the output of AI systems and questioning the reasons behind them (Bucher, 2018).

Findings and research perspectives

The main findings of this paper include understanding the politics of data, algorithms, and code. Data is a political tool that is always subjective and partial. Questioning the subjectivity, context, collection, categorization practices and storage of data using the framework of

hermeneutic reverse engineering helps us to understand the contribution of data in the power dynamics of AI systems. This enables us to unveil a hegemony of power that prevails in the data and analyze its implications. It helps us to understand the politics of representation within data and how the privilege of different societal groups is reflected in that. Questioning the data makes it possible to interpret what data and whose cultural narrative is missing and the reasons behind that. It also explains, to an extent, the biases embedded in the algorithmic models trained on this data.

Algorithms and code are also political tools and examining the structurally constructed reality, political economy, black boxing, and available programming of AI systems using the framework of hermeneutic reverse engineering builds a non-technosolutionist narrative of code from a non-hegemonic and intersectional feminist standpoint to question algorithmic bias acting within it. It reveals the power play within algorithms and opens the possibility of creating and imagining alternative non-discriminatory realities. To understand these alternative realities, it is important to pay attention to the tensions of fairness at the intersection of individual and group needs (Binns, 2020) and to explore ways to improve fairness in machine learning systems by mitigating discrimination without collecting sensitive data (Veale and Binns, 2017). Some practices that can be employed with the speculative imagination of hermeneutic reverse engineering include actionable AI audits that lead to the reduction of biased results in industrial AI applications (Raji and Buolamwini, 2019), and the compilation of actionable strategies based on alignments and disconnections between AI practitioners and fairness literature (Holstein et al., 2019).

This paper proposes three research perspectives, which include: (i) The comparative exploration of algorithmic biases in various AI systems to better understand their cultural and social impacts. (ii) An examination of how these biases affect different social groups and to test alternative approaches for further analysis. (iii) A participatory approach involving users in the design of AI systems and evaluating the effectiveness of strategies put in place to mitigate bias and promote greater algorithmic equity. These research perspectives aim to deepen the critical examination of AI systems by exploring algorithmic biases and power dynamics across different contexts. They propose a range of empirical studies, including case studies on diverse AI systems, international comparisons of biases, and the impact of biases on marginalized groups. Additionally, they suggest developing alternative analysis methods, participatory design approaches, and longitudinal studies of AI systems' evolution, as well as evaluating ethical challenges and bias remediation strategies.

The approaches proposed in this paper are: (i) Compare Algorithmic Biases Across Contexts: Study how algorithmic biases differ based on cultural and geographical factors by comparing AI systems used in different countries. (ii) Evaluate Impact on Vulnerable Groups: Investigate how biases in AI systems affect marginalized or vulnerable social groups by conducting field studies and surveys to assess their experiences. (iii) Develop Alternative Critical Analysis Methods: Explore and test other methodologies, such as network or content analysis, to improve the detection and understanding of biases in AI systems. (iv) Investigate Participatory Design: Examine how involving end-users in the design process of AI systems can help minimize biases and promote fairness by organizing co-design workshops. (v) Conduct Longitudinal Studies: Track AI systems over time to observe how biases change and how updates to these systems influence existing power dynamics.

Conclusion

The findings of this essay support and illustrate the need to re-examine and reimagine AI systems to avoid bias and inequality. This can be seen in the following connections established from the arguments of this paper: (i) Critical analysis: The results on biases in data and algorithms highlight the importance of conducting critical analysis to understand and correct these biases. (ii) Systems reimagining: The biased realities revealed by the study support the conclusion that alternative approaches are needed to create more just AI systems. (iii) Research perspectives: The problems identified by the results encourage continuous exploration and development of new methods for a better design of AI systems.

Therefore, considering AI systems as boundary objects (Star, 2015) and critically examining them through hermeneutic reverse engineering prompts us to be speculative and work alongside existing technologies to seek all other possible realities than can be created. It entails unpacking data, algorithms and code that make AI systems, and extends to imagining alternative futures by exploring different decisions that make a particular system, how to alter these decisions, and what else can exist if some of those decisions are altered. It involves questioning what is normal within a particular system, and who falls outside that norm (Whittaker et al., 2019, p. 27)? This approach also asks: What would the system look like if the underprivileged and marginalized groups were the ones being overrepresented and responsible for designing the AI system (Geburu, 2020, p. 264)? Though a complete cultural analysis and reverse engineering of AI systems is not possible owing to their protected propriety, vast and interconnected resources; even partial analysis might lead toward a technological reimagination of AI that exposes its underlying biases.

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

NS: Conceptualization, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing.

Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

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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RECEIVED 10 December 2024

ACCEPTED 23 May 2025

PUBLISHED 01 September 2025

CITATION

Hickey-Moody AC and Willcox MG (2025)
Feminist fabulation as refusal: Christine
Yahya's @pink_bits illustrating 'bodies we are
told to hide'.
Front. Commun. 10:1542825.
doi: 10.3389/fcomm.2025.1542825

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Feminist fabulation as refusal: Christine Yahya's @pink_bits illustrating 'bodies we are told to hide'

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Introduction: Digital feminist fabulations offer a mode of resistance to algorithmic patriarchies that govern visibility and acceptability on social media platforms. Following Bergson (1932/1977) and Deleuze and Guattari (1994), and building on Haraway's (2013, 2016) theorisation of fabulation as a practice of radical collective imagination, this study examines how feminist and queer visual cultures on Instagram respond to patriarchal censorship. Social media moderation policies often reproduce heteronormative, white, and able-bodied norms by restricting the visibility of diverse bodies and sexualities. In this context, feminist digital fabulation becomes a creative intervention into algorithmic injustice.

Methods: This paper draws on a four-year qualitative digital ethnography tracking the online practices of ten feminist and queer artists on Instagram. Data collection included longitudinal observation of public posts, artist statements, comment threads, and semi-structured interviews with each artist. The study focuses on the case of Christine Yahya (@pink_bits), a Sydney-based Armenian-Australian queer feminist artist and designer, to offer an in-depth analysis of one artist's fabulatory resistance to platform regulation. Yahya's work illustrates bodies and experiences marginalised in public discourse, including representations of disability, fatness, menstruation, masturbation, and mental illness.

Results: Findings indicate that Yahya's art practice functions as a feminist digital fabulation in response to repeated shadowbanning and content removal on Instagram. Yahya creates stylised, illustrative representations of "bodies we are told to hide," drawing attention to corporealities censored or invisibilised by content moderation systems. Rather than retreating in the face of moderation, Yahya transforms content reduction into a creative prompt. Her illustrations reimagine censored subjects as central, joyful, and unapologetically visible, working against the logics of algorithmic sorting and exclusion. These images do not only resist dominant visual cultures but actively produce alternative bodily imaginaries.

Discussion: This case study demonstrates how feminist digital fabulation operates as a creative political response to algorithmic governance. Yahya's work offers a situated example of what Haraway (2016) calls "speculative fabulation"—a mode of world-building that defies normative constraints through collective reimagining. The practice of producing art that "troubles regulatory boundaries" generates a form of knowledge and critique that emerges within, and against, the infrastructures of platform capitalism. In doing so, Yahya's digital art challenges the techno-patriarchal ideologies embedded in content moderation protocols

and offers a vital feminist aesthetic that reclaims public visual space. This study contributes to cultural studies and digital media scholarship by theorising feminist fabulation as an embodied, affective, and strategic mode of resistance to algorithmic censorship.

KEYWORDS

digital media activism, feminism, philosophy, intersectionality, intersectionality analysis, digital art

Fabulation as a scholarly framework

Feminist scholarship on fabulation is inspired by the work of Haraway (2013, 2016) and often draws on Deleuze and Guattari's concept of fabulation as it appears in *What is Philosophy?* (Deleuze and Guattari, 1994). In his earlier works, and later in *What is Philosophy?* Deleuze responds to, and changes, Henri Bergson's notion of fabulation. Many aspects of Bergson's thought attracted Deleuze. Firstly, the concept of multiplicity, secondly, duration (time) which is part of Deleuze's famous "becomings" (Deleuze and Guattari, 1987). Another aspect that attracted Deleuze, which is indeed connected to the first, is Bergson's criticism of the concept of Kant's negation in *Creative Evolution* (see Leonard and Moulard-Leonard, 2022). Both Deleuze and Bergson see fabulation as a powerful means of thought, but they emphasise different political potentials. In "The Two Sources of Morality and Religion" (Bergson, 1932/1977), Bergson introduces the concept of "la fonction fabulatrice" (storytelling, the social fabulatory or mythical function) which is translated in English as "the myth-making function" (see Bergson, 1932/1977, pp. 108, 109, 119, and 124 as examples). The myth-making function is also referred to as the process of fabulation, namely, the human capacity to create narratives as a response to the limitations of intellect and reason. This is the process by which "A fiction, if its image is vivid and insistent, may indeed masquerade as perception" (Bergson, 1932/1977, p. 109). Fabulation gives new meaning to things. It is the process by which the older woman becomes known to some as "the evil witch," a weed in one country is known as a vital source of nourishment in another country, a bank note (a printed piece of paper) has financial value in some countries and not in others, and so on. Bergson uses the idea of fabulation to explain the imaginative function that allows people to construct stories with moral or social significance that can serve to unify or divide communities. This function is pragmatic: it helps individuals and societies create coherence, to maintain status quo and protect against existential threats. For example, the construction of race and racisms are practices of fabulation that maintain Colonial status quo, in which "whiteness, among Whites, and petty Whites in particular, is neither an absolute nor an ontological fact. It is a social relation constantly reproduced by the forces that privilege it" (Bouteldja, 2023, p. 101). Bergson saw fabulation as productive, as a way of generating visions about how individuals in societies are connected. It is a luxury that society is able to develop only after people have safety and comfort. He asks: "How is it possible to relate to a vital need those fictions which confront and sometimes thwart our intelligence, if we have not ascertained the fundamental demands of a life?" (Bergson, 1932/1977, p. 111). His understanding of fabulation as

religion, as social order, remained somewhat conceptually limited, as it was rooted in what he perceived as the moral needs of a community, reinforcing social norms rather than critically considering them.¹

Deleuze's writings on fabulation, particularly his later work with Guattari, reinterpret fabulation as a creative, political force with a more radical potential than Bergson's conservative framing. In *What is Philosophy?* Deleuze and Guattari argue that fabulation is not simply about creating myths for cohesion but is a powerful creative act of transformation (Deleuze and Guattari, 1994, p. 171). Here, fabulation is central to art and philosophy: "the artist is a seer, a becoming" (Deleuze and Guattari, 1994, p. 171), fabulation is a way to bring "forth events" (Deleuze and Guattari, 1994, p. 199), to envision becomings that can break with conventional identities and social norms. Deleuze takes fabulation beyond Bergson's social function, re-casting it as a disruptive or revolutionary practice (Deleuze and Guattari 1994, pp. 117–201). Fabulation allows communities to envision and assert new identities, to make futures that challenge dominant ideologies. This approach aligns fabulation with what Deleuze (1995) calls "minor literature," a form of writing through which minorities claim voice and express collective desires. Here, fabulation is the imaginative force that gives public audiences to experiences that official histories and dominant narratives often silence, making it a vehicle for political resistance and change. In contrast to Bergson's fabulation as primarily social and stabilising force, Deleuze and Guattari view fabulation as dynamic and radical, capable of creating new worlds, becomings, and subjectivities that disrupt existing social orders. Explaining their use of fabulation, Deleuze and Guattari (1994, p. 171) state: "Creative fabulation. Goes beyond the perceptual states and affective transitions of the lived." Fabulation is the materialisation of a motif in fiction, art, philosophy or music: it is a new meaning made in a creative text.

Research methods and creative practices can be modes of fabulation. Haraway (2016) famously presents science fiction as a practice of fabulation in *Staying with the Trouble*. Haraway introduces

1 The internet perpetuates patriarchal ideas by amplifying existing societal biases and inequalities through its platforms and algorithms. Social media often prioritizes content that reinforces traditional gender roles, as such material tends to generate high engagement. Additionally, online spaces can reproduce toxic masculinities through harassment, objectification of women and exclusionary behaviour. Algorithms designed without gender equity in mind may marginalize feminist or gender-diverse voices while disproportionately exposing women and marginalized groups to abuse. The underrepresentation of women in tech further influences the design and governance of online spaces in ways that maintain patriarchal norms.

“speculative fabulation” as a means of envisioning alternate realities, bridging science, feminism and fiction to challenge dominant narratives. Haraway advocates for making kin, not babies, saying: “The task is to make kin in lines of inventive connection as practice of learning to live and die well in a thick present” (Haraway, 2016, p. 1). Inventive connection is thus a form of speculative fabulation, urging us to reimagine human and non-human relationships in order to create a more liveable future. Haraway’s work highlights storytelling as a powerful critical and creative method to create worlds of possibility. Stories “propose and enact patterns for participants to inhabit, somehow, on a vulnerable and wounded earth” (Haraway, 2016, p. 10). Here, storytelling is not a method of keeping the status quo like it is for Bergson, rather, storytelling is an active, constructive force that enables feminist and environmental critique and vision.

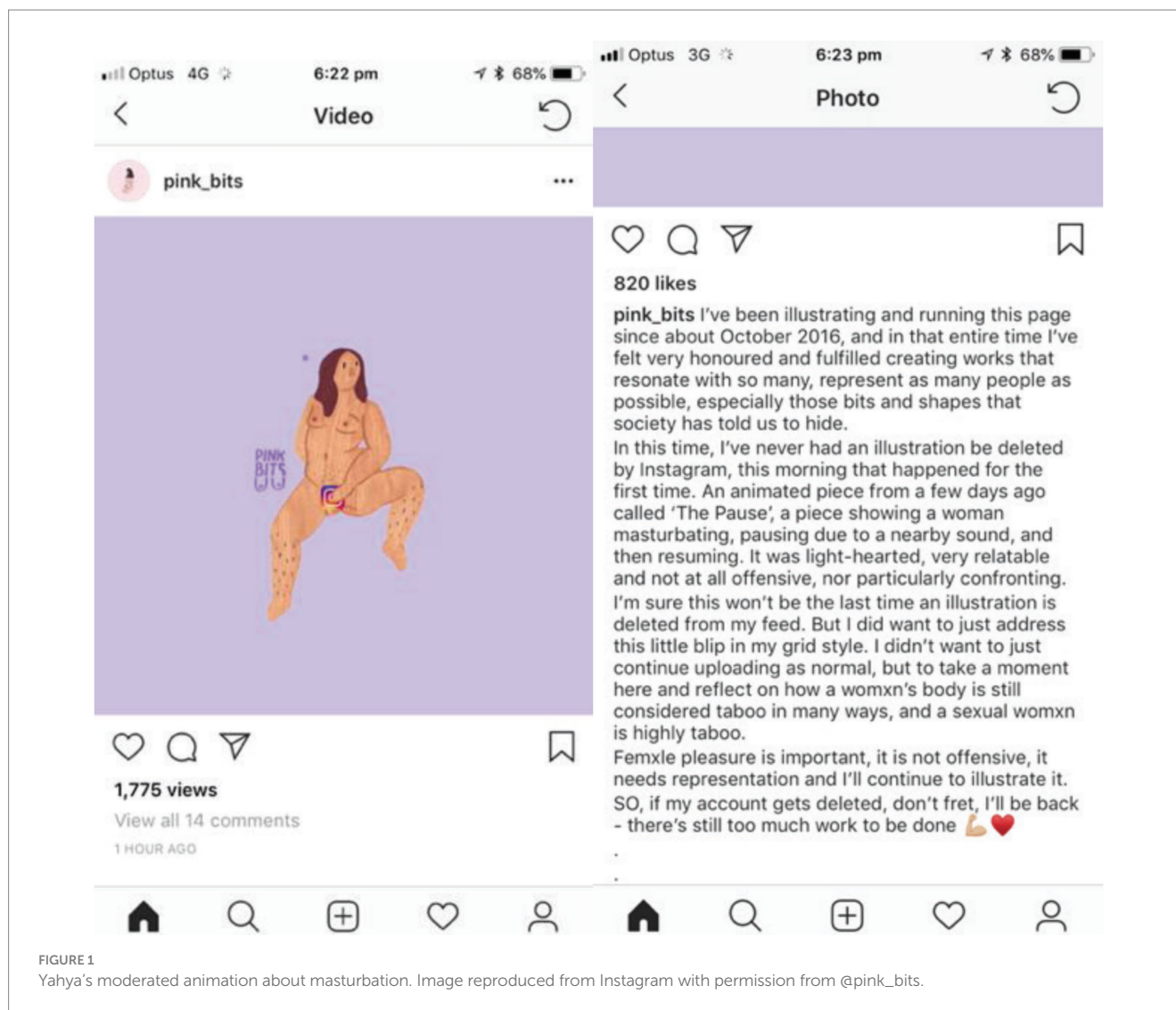
Donna Haraway’s work on feminist fabulation is most fully developed in *The Companion Species Manifesto* (Haraway, 2013) and *Staying with the Trouble: Making Kin in the Chthulucene* (Haraway, 2016). In these texts, Haraway argues that storytelling is a vital method for feminist and ecological thought, offering a way to challenge anthropocentrism, binary thinking and narratives of linear progress. Feminist fabulation is not simply imaginative fantasy, but a speculative and materialist practice of world-making that unsettles dominant epistemologies and reorients attention to multispecies entanglements. One of the central aspects of Haraway’s approach is her embrace of storytelling as a method that combines science fiction, speculative fabulation, string figures, and speculative feminism—what she refers to collectively as “SF.” This multiplicity of SF signals her intention to traverse the boundaries of traditional academic disciplines and forms of knowledge. Her fabulations are not utopian or escapist; they are rooted in the “trouble” of the present and are committed to ethical responsibility in the context of the Anthropocene and the Capitalocene. Haraway’s insistence on “making kin, not babies” articulates a post-anthropocentric ethics that prioritizes alliances and relationality over reproductive futurism or human exceptionalism.

Haraway’s approach to feminist fabulation has had significant impact across a range of scholarly disciplines, including feminist theory, science and technology studies (STS), environmental humanities, posthumanism, literary and cultural studies. In the environmental humanities and posthumanist theory, scholars such as Rosi Braidotti, Anna Tsing, and Deborah Bird Rose have taken up fabulation as a mode for thinking with nonhuman others and for developing ecological ethics grounded in multispecies entanglement. The concept of the Chthulucene, introduced by Haraway as an alternative to the Anthropocene, has gained traction in discussions of extinction, more-than-human futures, and environmental justice. In feminist science studies, fabulation has been used to critique and reimagine technoscientific knowledge practices. Scholars such as Michelle Murphy and Mel Y. Chen have drawn on Haraway’s work to develop frameworks that attend to environmental toxicity, data politics, and the materiality of chemical and racialized life. In queer and decolonial theory, fabulation resonates with speculative world-building and alternative temporalities. Writers such as Eva Hayward, Alexis Pauline Gumbs, and Vanessa Agard-Jones explore the generative possibilities of fabulation for imagining otherwise, while also remaining attentive to histories of erasure and resistance. In this context, feminist fabulation becomes a method for disrupting colonial futurities and for foregrounding submerged or marginalized modes of storytelling and ontology.

Haraway’s influence extends into creative and practice-based research, where her fabulatory method is used in fields such as performance studies, speculative design, and eco-fiction to enable creative-critical engagement with climate, species and social imaginaries. However, her work is not without critique. Some scholars argue that Haraway’s notion of kinship risks universalizing experience or obscuring the particularities of colonial and racial histories. More recently, Jungnickel (2022) and Jungnickel (2024) combines historical research, craft and performance to not just recreate cycling costumes worn by women but to make contemporary feminist medias and agendas. Jungnickel’s method allows her to engage with the material culture of the past, highlighting the gendered politics of embodiment and materiality. Jungnickel’s methods re-enact and re-create historical garments in order to generate new understandings of historical phenomena. Similarly, Coleman (2020) facilitates collaging workshops and other collaborative activities that present participants’ hopes, fears and expectations. These visual practices of fabulation allow participants to make objects that present their worlds in new ways. Coleman’s (2020, p. 50) “future-oriented affect” links fabulation to the felt experiences of time and temporality, emphasising how storytelling can materialise futures in the present. This approach connects with feminist theories of affect, showing how narratives shape not just what we think but what we feel about possible futures. In particular, Coleman (2020, p. 53) examines how popular media, and the material politics of glitter, can “pre-fabricate” futures, reinforcing or resisting dominant expectations and ideologies.

Feminist scholarship on fabulation builds Donna Haraway’s foundational work, now encompassing a range of theories on storytelling, narrative construction, and imagination in feminist frameworks - especially Science Fiction (Truman, 2021). For example, Isabelle Stengers has also contributed to fabulation in feminist theory through her concept of “cosmopolitics” (Stengers, 2010). Donna Haraway compares Stengers’ cosmopolitics to fabulations, saying “Isabelle Stengers’s kind of fleshy cosmopolitics and SF writers’ practices of worlding page number.” Stengers emphasises the creative process of ‘slowing down’ thinking, allowing room for alternative ways of understanding and valuing the world. She argues that fabulation allows marginalised or silenced perspectives to emerge, providing narrative space for “minor voices” in the face of dominant knowledge systems. In her view, fabulation is a critical process that makes space for speculative possibilities in political and philosophical thought, where new worlds can be imagined collectively.

Across these and other works, feminist fabulation has shifted from conceptual frameworks to applications in feminist media studies and art making (Manning, 2019) framing storytelling (in our case, digital storytelling on Instagram) as a means of creating politically and ethically charged ‘what if’ scenarios. This scholarship underscores the fact that fabrication is not just imaginative but also deeply situated in material and affective practices that shape our capacity to envision change. Taking inspiration from Haraway’s multispecies storytelling (Haraway, 2016, p. 10) we have drawn together the words of Christine Yahya across three different mediums as a source of analysis for our research. Through thematic analysis of 2 interview transcripts, textual analysis of yahya social media posts, and an aesthetic visual analysis of their art works, we stitch together a story made up of Fabulations from yahya posting and art practices. The data presented here is drawn from a 4 year Digital Ethnographic study which explored the ways



feminist and queer Instagram artists used social media posts and art making practices to create spaces of belonging online for marginalised groups (Willcox, 2023). The interview transcripts, illustrations and social media posts are read together as layered fabulations on feminist digital art making.

Below is an image taken from the work of Yahya's Instagram page (@pink_bits) who we introduced above as queer, feminist artist and graphic designer living and working in Sydney, Australia.

Figure 1 shows yahya edited animation, which states that "femxle sexual pleasure is important." She told us that this was her first post deleted by Instagram. It was an animation of a woman masturbating. She refers to her post as "relatable and unoffensive" and points out to her followers that "a womxn's body is still considered taboo in many ways" and a sexual womxn is highly taboo.

Although art about men masturbating is also moderated on Instagram, the ways women's bodies are moderated on the platform are unique, as male nipples are allowed and women's are not, unless in the context of breastfeeding or breast cancer surgery (Yahya, 2024). This speaks to the ways content moderation processes can reflect normative biases around bodies and the ways women's bodies are more often sexualised in public spaces (Willcox, 2025).

Yahya goes on to describe these restrictive measures in one of our interviews through the ways the moderation, promotion and visibility is constructed to ensure creators stay trapped within their own bounds of creative practice:

I feel like when you are popular, or if you find popularity for a particular reason, Instagram rewards your engagement by creating the same thing repetitively... If I create something maybe about like, I don't know, psoriasis or masturbation or disability – something else that's not as consumable by the algorithm, it just hides everything, and it's kind of shitty. (Yahya, 2022)

For Yahya, creating content that is outside the bounds of her artistic brand is when she feels she is more at risk of being moderated, removed or reduced. She says in the caption on the below Instagram post "female pleasure is important, it is not offensive, it needs representation and I'll continue to illustrate it" (Yahya, 2022). Moderation is experienced as personal to Yahya, and, as she states in the excerpt above, drawing things that aren't as consumable by the algorithm means Instagram hides everything "and it's kind of shitty." Instagram is a part of her

everyday lived reality, and having content about bodies deleted affects the way she feels about her body. Yahya describes this affect by relaying her experience growing up with an eating disorder in one of our interviews:

As an eating disorder survivor, coming through my teenage years and early twenties, like it was quite rough. So seeing imagery, even though I made it, was still helpful for, you know, imagining a body that I can identify with ...And in my work, I want to provide more imagery of, you know, just bodies being bodies and not bodies that are like not straining to be small and straining to not take up any space and, you know, are under pressure to look the way that, you know, society says we should look. (Yahya, 2022)

This comment on her experience as an eating disorder survivor demonstrates how fabulating, or visually re-imagining bodies she can identify with in the artwork that she makes, helps Yahya in her recovery. Her work is a bodily response to societal expectations of women's bodies and affects the ways she feels she belongs within her own body. Saying that she draws bodies that aren't straining to uphold the ways society expects them to look shows Yahya's intention of making more space in media narratives for diverse bodies to be celebrated and accepted. This is an example of a fabulation on a digital platform as a feminist method of 'refusal,' because it brings together the idea that creativity can remake the experience of the body through resistance, but also, creates space for more diverse bodies embedded in social media.

When Yahya's image of female masturbation (Figure 1) was taken down through a content moderation process, this prompted a reaction to

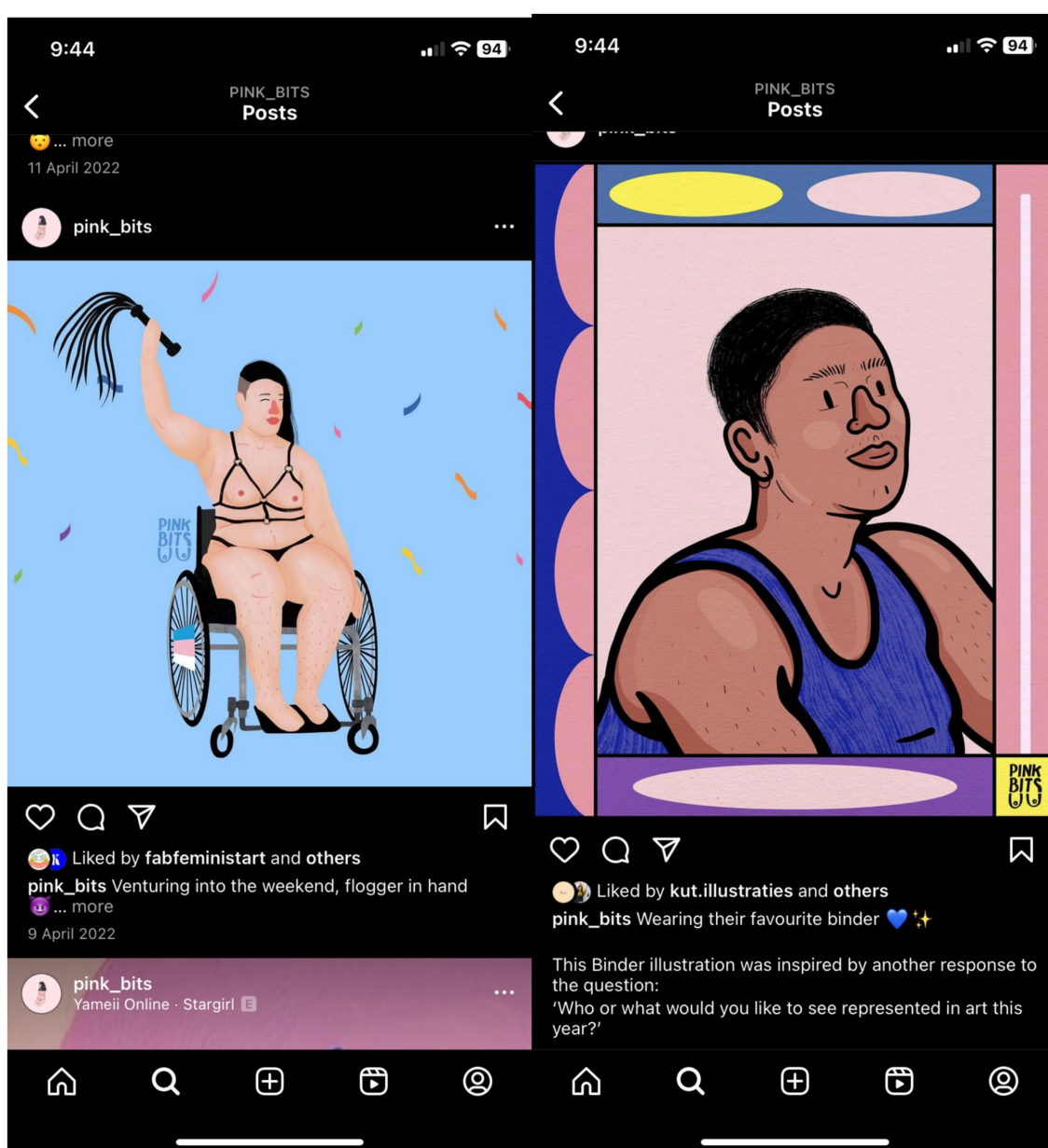


FIGURE 2

Yahya's illustrations responding to followers interests in representation (2024). Image reproduced from Instagram with permission from @pink_bits.

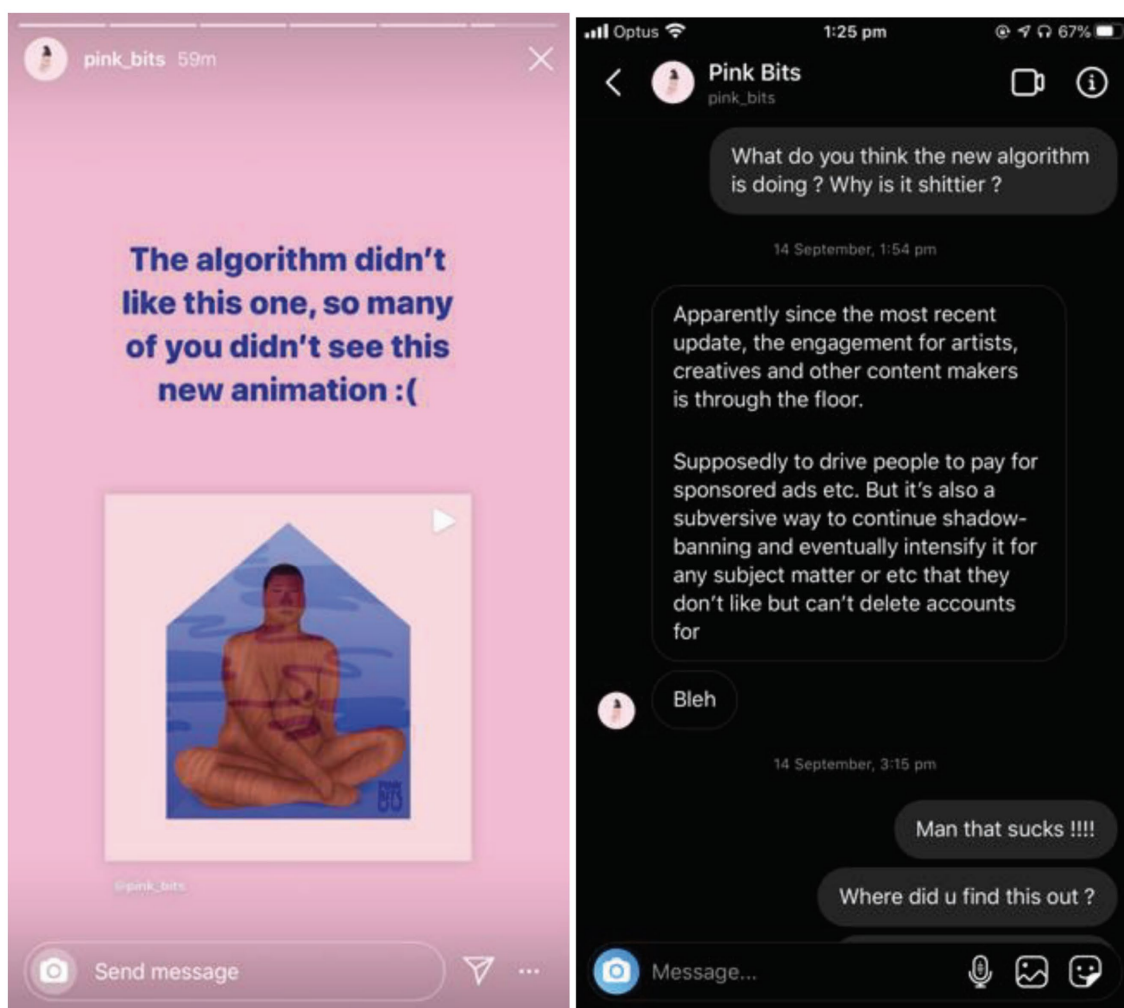


FIGURE 3
Yahya's moderated animation, and a DM conversation about this (2019). Image reproduced from Instagram with permission from @pink_bits.

the modes of exclusion where a body she drew, or could relate to, was deemed to not fit within the ways “society says we should look” (Yahya, 2022). She says in one of her Instagram captions for Deleuze and Guattari, fabulation, is not about the notion of cohesion but is a powerful act of becoming and transformation through creation. For Yahya, this act of creation is about taking up the challenge of pushing against regulatory guidelines which enforce restrictive notions of which bodies can be seen/accepted or celebrated in public space and which cannot. Media narratives that reinforce the ‘thin ideal’ attached to women’s bodies are one of the reasons she says she developed an eating disorder, and changing these narratives is her way of claiming back the agency she feels she lost. This is a form of fabulation, using digital animation to construct bodies as an explicitly transgressive act. It challenges norms by amplifying the visibility of non-normative bodies in social media spaces, creating images that disrupt conventional ideas of acceptability regarding gender, race, sexuality, class, disability, and other intersecting identities.

Yahya draws figures in her work which are often colourful, cute and fun. They are purposely ‘accessible’ she says so that she can draw about topics such as those in Figure 2 and access a broader public without having her content removed or reduced. The figure on the left is of a person in a wheelchair holding a “flogger” dressed in a kinky

outfit. This theme of disability and sexuality is also something which often comes up in Yahya’s work, and is something she explicitly wants to create more media representation about (Aspler et al., 2022; Hall, 2018; Kaur and Saukko, 2022; Miller, 2017). The figure on the right of Figure 2 is a drawing Yahya made in response to a question she asked her followers “Who or what would you like to see represented in art this year?” In response to this, she created a trans or non binary person wearing a binder. This action of asking her followers what kind of bodies they wanted to see in art work and then creating the artwork about a marginalised body, is another example of a feminist fabulation. The method of making meaning in this instance, comes from calling out for collective transformation through participatory engagement in the re-creation of bodies in digital spaces against normative boundaries of public visibility.

In Figure 3, in response to the image on the left, Yahya (2020) says she thinks the new moderation algorithms drive people to pay for sponsored ads but are also “a subversive way of continuing to shadowban any subject matter that they (Instagram) do not like but cannot delete accounts for.”

Analysing Yahya’s words and images makes it clear that her work is responsive to the exclusion of certain bodies through media narratives,

yet she participates in, and contributes to, media narratives herself. Thus, this flow of agency between and among the body and Instagram needs to be considered in more detail. Yahya benefits from ‘calling out’ content moderation to her followers. However, by blaming what she calls ‘the algorithm’ for the moderation of her images, she gives digital platforms a “god like power” which neglects the fact that she is also an actor in making media narratives focus on bodies. Although there is a very different focus to her narrative on bodies than those that focus on reinforcing patriarchal beauty ideals, “anything that does modify a state of affairs by making a difference is an actor ... makes a difference in the course of some other agent’s actions” (Latour, 2005, p. 71, quoted in Bucher, 2018, p. 51). Algorithmic systems can reconfigure bodies just as much as bodies can reconfigure algorithmic systems. The interplay between Yahya’s Instagram use and content moderation processes demonstrates the agentic flow of algorithmic feedback loops in the way that “agential intra-actions are causal enactments” (Barad, 2007, p. 176). This is reflected in Yahya’s description of using the features of Instagram to bolster profit:

I launched a new store maybe like a year ago, and I realised oh, I’m not reaching anyone. Anytime I post about a new product that I’ve made, my engagement goes down insanely. So I was like, OK, I’ll do a sale and I’ll sponsor a post. I’ll play the game, I’ll put some money behind it so it gets a bit seen. And then they decided that my advertisement didn’t meet with their guidelines, and so they wouldn’t let me sponsor any content, so people wouldn’t really see it. And I was like, ugh ... (Yahya, 2022)

This interview excerpt shows how Yahya tries to advertise her work or do what Cotter (2019) calls “play the algorithm game,” but finds she still does not meet the guidelines, so her content cannot be sponsored. Playing the game here means learning the rules and making art and content that fits within these rules. While it wasn’t clear what specific post she was referring to in our interview, by relying on algorithmic systems and media narratives for visibility while also fighting back against Instagram’s rules on content moderation, Yahya demonstrates how complex the creation of the feminist fabulation can be as it requires participation and engagement from an audience or a collective, to transform and make new meaning through acts of creation.

Conclusion

The process of playing the algorithm game while ‘refusing back’ the system by which Yahya feels oppressed is a “feminist fabulation” because it shows the work of making meaning through creative process. Such ventures make “Possibilities of better worlds, and ideas of other worlds, other beings” (Hickey-Moody, 2023, p. 185). When fabulation is situated in algorithmic systems and patriarchal media infrastructures, to ‘refuse’ through fabulation requires:

A semblance of transcendence that is expressed not in a thing to be represented but in the paradigmatic character of projection and in the “symbolic” character of perspective. According to Bergson the Figure is like fabulation: it has a religious origin. But, when it becomes aesthetic, its sensory transcendence enters into a hidden

or open opposition to the suprasensory transcendence of religion. (Deleuze and Guattari, 1994, p. 193)

Rather than think through religion, we think through the philosophy, political ideology and belief systems of feminism in this article. As a feminist fabulation is built on the notion of resistance, artists and specifically feminist Instagram artists, form key examples of how we might think through what it takes to fabulate aesthetically, to create new meaning in patriarchal spaces via creative means. This offers up an invitation to other artists, researchers and content creators to dive deeper into the meaning of feminist fabulation, offering space to create subtle transgressions through collective creation.

Data availability statement

The datasets presented in this article are not readily available because this data is owned by Marissa Willcox. Requests to access the datasets should be directed to Marissa Willcox m.g.willcox@uva.nl.

Ethics statement

The studies involving humans were approved by RMIT University Human Ethics Committee. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

AH-M: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Software, Supervision, Validation, Writing – original draft, Writing – review & editing. MW: Data curation, Methodology, Writing – original draft, Writing – review & editing.

Funding

The author(s) declare that no financial support was received for the research and/or publication of this article.

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.

Generative AI statement

The authors declare that no Gen AI was used in the creation of this manuscript.

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