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SPECIALTY SECTION

This article was submitted to
Political Participation,
a section of the journal
Frontiers in Political Science

RECEIVED 10 May 2022

ACCEPTED 07 July 2022

PUBLISHED 04 August 2022

CITATION

Neas S, Ward A and Bowman B (2022)
Young people's climate activism: A
review of the literature.
Front. Polit. Sci. 4:940876.
doi: 10.3389/fpos.2022.940876

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Young people's climate activism: A review of the literature

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The year 2018 was a watershed year for young people's climate activism. In this review article, we explore the methodological trends and key themes across contemporary academic literature on young people's climate activism. In the academic literature, following an initial wave of survey-based research of young people and textual analysis of secondary data like media reportage, the field is experiencing a second wave of qualitative research and a resurgence of emphasis on youth voice in research. Accordingly, we identify the strengths of the existing literature in its exploration of key themes including the composition, practices and outcomes of young people's climate activism, and the ways young people understand and act on climate change. We identify several gaps in the literature that arise from a disproportionate focus on research topics, and especially a disproportionate focus on activism in the global North and in wealthy and White communities, a focus on mass mobilizations, and an intensive interest in the individual activist Greta Thunberg. Our analysis leads to recommendations for future research based on three conceptual challenges. We argue that future research must respond to these challenges: first, the limited and constraining social constructions of "youth" as a category; second, the practical challenges of working with young people, not least in relationships of consent; and third, the need to respond to adultism in research practices and to develop youth-centered approaches to the activism of young people. This review article intends to contribute to a step change in theory and methods for the study of young people's climate activism.

KEYWORDS

young people, climate change, social movements, activism, environmentalism

Introduction

Youth-led and youth-centered climate activism has gained momentum and visibility over the past few years. This activism has played a central role in bringing about a "watershed moment" in the politics of climate change (Pickard et al., 2020). The "historical roots, tensions and complexities" in young climate activism remain vitally important, and "the thickest of these roots is environmental justice, a theoretical approach with a long history", especially in the activism of people of color and Indigenous communities (Walker and Bowman, 2022).

This has yielded an emerging body of literature pertaining to young people's climate activism. The vast majority of this literature focuses on activism starting in 2018 and since

then. This seems to be connected to the actions of young climate activist Greta Thunberg, who sparked the global Fridays For Future movement. This movement encouraged young people to engage in organized school strikes and walkouts (henceforth referred to as the climate strikes) for climate action. In turn, much of this literature is focused on these mobilizations. However, participation in such events constitutes only one activity in a wider web of youth climate activism.

While we agree that the year 2018 reflects a watershed moment in academic literature and global climate politics, and that the school strike movement is important, this is problematic. For instance, one could argue that the pivotal year might be 2016, and that the watershed moment was opposition to the Dakota Access Pipeline at Standing Rock. This movement was started by young people, and “spread like wildfire across Turtle Island and the world, moving millions to rise up, speak out and take action” (Estes and Dhillon, 2019, 1). The focus on 2018 in the literature also leads to a focus on Greta Thunberg’s strike action and work with international organizations like the UN, and not, for example, Kathy Jetnil-Kijiner’s comparable activism in earlier years (Jetnil-Kijiner, 2014). We are reviewing academic literature, and we agree that academic literature tends to focus on 2018 and beyond. Nevertheless, we recognize that young activism itself is much more heterogeneous in its nature, more expansive in its vision, and has deeper roots than 2018. We discuss the gaps in existing literature later in this article.

This review focuses on recent work to make an important contribution to a burgeoning field of international scholarship on young people’s climate activism. The current surge of academic interest in young people’s climate activism is inspired by a youth-led, youth-centered approach among activists. We outline recent methodological trends in studying young people’s climate activism, detail some of the challenges that arise when studying young people, and review the existing literature and its major themes. Using our review, we indicate significant gaps in this growing literature, which are: a focus on mostly activism by mostly White youth in the global North, which is separated from other literature on activism in the global South and in marginalized communities in the global North; an overemphasis on mass mobilizations; and, stemming from her public visibility in the years around 2018, a hyperfocus on Greta Thunberg. We discuss these themes and challenges and conclude by identifying future opportunities for this vital, international field of research.

Methods for conducting literature review

To account for the various ways scholars have been studying young climate activists, we conducted a literature review. We were interested in gaining a broad understanding of the way people studied young climate activists *and* what they were saying about them, so we used the keyword terms “youth climate strikes,” “Fridays For Future,” and “youth climate activism”. We

first decided to exclude any paper that was not published in a peer reviewed journal. There were no geographical limitations on our search but we only included papers written or translated in English. We recognize the limitations of this approach, but in our search, we came across less than 5 articles that had to be excluded for this reason. We then focused on articles that detailed young climate activism from 2018 and on. Despite the previously acknowledged complexities of considering 2018 a watershed moment for youth climate activism, we decided on 2018 because it was the year that the climate strikes began. Additionally, after doing a precursory literature review, we recognized that 2018 was the year that publications on young climate activism began to increase. We excluded papers that lacked empirical data or that used empirical data, but it did not pertain to young people engaged in climate activism. We defined climate activism broadly, largely relying on what the researcher considered to be activism, but excluded activism that was not specific to climate change. Using these exclusion categories, we did a close read of 51 articles that discussed young climate activism after 2018.

We then coded these 51 articles, first by the methods that the authors employed, and then by the articles main themes. In coding for methodological approaches, we used the codes “qualitative,” “quantitative,” “case study,” “mixed methods,” “text analysis,” and “other” which included articles that were primarily literature reviews or more theoretical in nature. This coding informed how we organized the following section describing the methods used for studying young climate activists. In coding for themes, we used the codes “composition of the movement,” “reasons for mobilizing,” “outcomes of activism,” “how young people define and act on climate change,” and “perceptions of youth activism.” If an article addressed one or more of these components, it was coded accordingly. We used this information to organize the key themes of the literature we reviewed on young climate activists.

Methods for studying young people’s climate activism

The following section explores the various methodologies being used to study young people’s climate activism. Of the 51 papers we identified, nearly all of them are research conducted by adults *on* young people [with notable exceptions such as Luna and Mearman (2020), Mucha et al. (2020) and Navne and Skovdal (2021); discussed further below]. Instead, we advocate for an epistemological shift that recognizes young people’s claims to knowledge, expertise and research itself: in other words, more research *in partnership with* young people. We agree with Cutter-Mackenzie and Rousell (2019) who call for the recognition of young people’s “political agency, creativity and theoretical acumen as legitimate researchers” in the study of climate change (2018, 90). Of course, there

are significant challenges in partnering with young people on knowledge co-production, including ethical issues, adultism, and the pressure for “fast research” in the neoliberal academy. We detail these challenges further below. Nevertheless, this shift in methodological approach would have important effects on how adult researchers analyze young people’s climate strikes. Before clarifying *why* this shift matters, it is first important to unpack the ways scholars have been studying the young people’s climate strikes. While scholars have taken a variety of methodological approaches, very few build in opportunities for collaboration with the young people whom they are studying. This is likely connected to both adultism, by which adults hold power over young people, as well as the practical challenges of conducting participatory work with young people. We highlight these issues further below.

Protest and online surveys

One of the more common approaches to documenting the climate strikes, especially on a large scale, is through surveying young climate activists at the climate strikes, or afterward, online. This data provides us with an important baseline understanding of who participated in these strikes. For example, [Gaborit \(2020\)](#) surveyed 1,800 young climate strikers in France, using an approach developed by *Quantité Critique*. With this methodology, a large number of trained researchers administer questionnaires randomly at these protest events. [Wahlström et al. \(2019\)](#) and [Zamponi et al. \(2022\)](#), used a similar methodology in cities across Europe. Called “Caught in the act of protest: contextualizing contestation” or CCC, these scholars use a “pointer” who systematically directs researchers to select participants for surveys and interviews ([Walgrave et al., 2016](#)). This data serves as a starting point for scholars who wish to take a more fine-grained approach to studying young people’s climate strikes.

In addition to quantifying the demographics of these strikes, other scholars have collected quantitative data to parse out motivations and environmental knowledge of the strikers. In an attempt to unpack what drives “pro-environmental activism” of young people, [Wallis and Loy \(2021\)](#) distributed an online survey to 125 young people at a FFF protest in a German city and an additional 418 young people between 13–26 through an online portal. Similarly, to develop a theoretically driven understanding of young peoples’ motivations to participate in young people’s climate strikes, [Brügger et al. \(2020\)](#) conducted a cross-sectional online survey that included both strikers and non-strikers. With 4057 survey responses, they argue that motivation is tied to activists feeling as if they are engaging with other like-minded individuals.

One can find an interesting example of collaborative quantitative data collective in [Mucha et al. \(2020\)](#) on resilience and digital protests during COVID 19. Working *with* members

of the Fridays For Future movement, these scholars co-designed and implemented a survey that sought to unpack the effects of the COVID-19 pandemic on the movement’s communication, organization, and mobilization. This kind of collaborative work, where scholars work with those who they study to co-create knowledge, should be encouraged across methodological boundaries. It also allows for a more accurate understanding of the activism itself, as it takes these young people’s voices, perspectives, and expertise seriously.

Text analysis

One of the most common ways that scholars have attempted to make sense of the young people’s climate strikes is through text analysis. As an emergent body of research, text analysis proved useful in producing research relatively quickly, as the data was readily available. Also, text analysis provided available data sources when COVID-19 restrictions limited other data collection methods. Nevertheless, there are epistemological limitations of text analysis, namely that it tends to exclude young people by using adult-centered concepts to analyze mostly adult-oriented texts, producing research outputs that are mostly for the perusal of adults. The text analysis in this literature focuses on one of three sources: speeches given by Greta Thunberg, news coverage of the strikes, or social media posts from climate activists.

Several studies have examined the young people’s climate movement by analyzing the speeches of prominent young climate activist Greta Thunberg. For example, using thematic analysis, [Holmberg and Alvinus \(2020\)](#) analyzed five of Greta’s speeches and two important climate-related international documents to examine the foci of children’s resistance. While it is a response piece, [Evensen \(2019\)](#) also draws on Thunberg’s speeches to critique the rhetorical approaches of the Fridays For Future movement. Using Thunberg’s speeches as a proxy for the messaging of the Fridays For Future movement, the author suggests that young climate activists as a whole need to move beyond the rhetoric of “trust the science” toward more normative, ethical reasonings for tackling the climate crisis.

Studies drawing from newspaper articles are often focused on the way media *frames* the young climate strikers. For example, [von Zabern and Tulloch \(2021\)](#) employed rhetorical analysis of media coverage of Fridays For Future from three German news outlets. They found seven different kinds of frames used by these news outlets and that the coverage often reproduces existing power structures through marginalizing and depoliticizing the political agenda of protests. Similarly, [Bergmann and Ossewaarde \(2020\)](#) analyze German newspapers using critical discourse analysis of one left-wing and one right-wing newspaper in Germany. The authors found that both newspapers primarily use ageist language to delegitimize young climate activists.

The final approach to textual analysis uses more diverse materials, including newspaper articles, tweets, social media postings, interviews, and other online materials. For example, [Huttunen and Albrecht \(2021\)](#) analyzed news and social media about Fridays For Future in Finland. Similarly, [Kenis \(2021\)](#) analyzes the way the School Strikes in Belgium are framed on websites, social media, television, newspapers, and magazines. Framing their work as a digital ethnography, [Wielk and Standlee \(2021\)](#) used the Twitter feeds of seven prominent climate activists to parse out how young climate activists use social media to create and direct movement communities. A clear limitation of the study, mentioned by the authors in the conclusion, is that this study only represents the perspectives, experiences, and tactics of seven (mostly White, mostly American) young climate activists. Dealing with a similar challenge, [Han and Ahn \(2020\)](#) analyzed various speeches, interviews, declarations, and online communications from the young people's climate movement broadly. The challenge with this kind of approach to studying young climate activists is that it makes sweeping assumptions about a transnational movement using textual evidence from a relatively narrow set of sources, which the authors themselves acknowledge in conclusion.

There are clear advantages and benefits to textual analysis. In addition to speed and accessibility of data amidst a pandemic, textual analysis can be a way of engaging with young people on their own terms by examining youth-produced media, documenting how young people circumvent mainstream media to shape their own narratives (ex. [Huttunen and Albrecht, 2021](#); [Wielk and Standlee, 2021](#)). Textual analysis also offers the opportunity to critique adultist or otherwise problematic portrayals of young activists (ex. [Bergmann and Ossewaarde, 2020](#); [Huttunen and Albrecht, 2021](#)). At the same time, textual analysis can reinforce incorrect assumptions about the homogeneity of young people ([Pickard, 2019](#)) and “view youth as isolated individuals, neglecting the role of adults and communities” ([Wood, 2020, 217](#)). It can also use adult perceptions to explain the young climate strikers, rather than young people's experiences and ideas. We ask that scholars who employ this method take care to ensure these data do not lead to overly simplistic claims about young climate activists and consider ways to include young people in this kind of data collection and analysis.

Qualitative methods

In recent years, there has been an uptick in qualitative scholarship that explores the young people's climate strikes. While qualitative data provides its own set of challenges, particularly regarding sample size and representation, these studies give new dimensions to what can otherwise be a flat or reduced description of young climate activists. This work

provides important “thick description” of the experiences and perspectives of these activists ([Geertz, 1973](#)).

Focusing on young activists in the UK who were involved in either the school strikes and/or a group called the Extinction Rebellion, [Pickard et al. \(2020\)](#) draw from a large sample of sixty semi-structured interviews carried out before, during, and after protest actions to try to examine how young people themselves understand their activism. [Elsen and Ord \(2021\)](#) draw from seven in-depth interviews with young climate activists affiliated with the Fridays For Future strikes. This work explores young people's attitudes toward adult involvement within “youth-led” climate groups. [Cattell \(2021\)](#) used ten in-depth interviews with young climate activists to unpack the ways regular involvement in climate activism shapes their imagined futures. While brief in length, [Martiskainen et al. \(2020\)](#) conducted 10 to 20-min interviews with sixty-four young activists participating in school strikes across six cities. The interviews—conducted after the strikes had already occurred—add some additional depth to the point-in-time surveys done at the strikes.

Not all scholars who engaged with qualitative methodology drew exclusively from interview data. [Haugestad et al. \(2021\)](#) employed mixed methods in their study of Fridays For Future protests. Using ethnographic fieldwork, ninety-three interviews, and survey data from 362 Norwegian high school students, the authors explore the predictive possibility of collective guilt, environmental threat, past protest participation, organized environmentalism, political orientation, and social capital on future protest intentions. In addition to twenty semi-structured interviews with students in Quebec, [Dupuis-Déri \(2021\)](#) draws from letters from school principals addressed to parents and pieces of media to document the way schools can be a place of political conflicts and struggles between students and adults and between students on different sides of the movement. [Kettunen \(2020\)](#) draws upon 4 months of participant observation and forty-seven interviews with young people between the ages of fifteen and sixteen to unpack the different ways young people practice environmental politics and construct their environmental citizenship. While not all forty-seven of her respondents claimed to be active in climate activism, the data set makes an interesting comparison between young people in Finland who did and did not strike. The rich qualitative data collected by these authors allows young people's voices to be an essential part of the overall analysis.

It is important to note two qualitative papers that offer examples for what deeply collaborative knowledge co-production with young people can look like. The articles [Luna and Mearman \(2020\)](#) and [Navne and Skovdal \(2021\)](#) are co-written with individual young activists who serve as lead author in both instances. Both articles include first person narrative written by the activist and largely unedited, mixed with commentary by both authors. While there are important ethical considerations in such approaches, addressed further below,

these papers elucidate methods that legitimately challenge the norms of adult-centered knowledge production.

Above, we have detailed the different kinds of methodologies implemented by scholars who study young climate activists. These methodologies range from event surveys to textual analysis, to interviews, and other ethnographic approaches, as well as mixed methods. While all of these studies offer valuable information on various components of the climate strikes, we argue that there needs to be deeper consideration of how we go about studying young people. First, however, we detail the core themes that this literature has to offer, to set the stage for a discussion of the intimate relationship between what we know about young climate activists and how we know it.

Key themes in the literature

While the above section examines how we know about young people's climate activism—the methodologies used to study it—we will now address what we know about it. This section explores the various findings available within the research. It is grouped by the various themes we identified within the literature. These themes are: composition of young people engaged in climate activism; pathways into climate activism; outcomes of young people's climate activism; and how young people are understanding and acting on climate change.

Composition of young people engaged in climate activism

Many scholars have examined the demographics of young climate activists. In Europe, two large quantitative studies gathered data on young people participating in Fridays For Future protests in March and September of 2019. Findings were similar across the two studies: the biggest age cohort was between 14–19 years old, and the median age was 21 years old (Wahlström et al., 2019; de Moor et al., 2020). Participants are more heavily female, and over seventy percent come from well-educated families, defined as having at least one parent with a college degree (Ibid).

A similar study found that participants in the climate strikes in the United States are predominately White, female, and from well-educated families (Fisher and Nasrin, 2021a,b). Interestingly, this data shows a steady increase in the age of participants over time; in the spring of 2019, the median age was eighteen, then twenty-five by fall 2019, and thirty-two by the spring of 2020. In this short time span, adult-led organizations (the Sierra Club and 350) increasingly took leadership roles, squeezing out the leadership of youth-led organizations (Fisher and Nasrin, 2021a,b). Lorenzoni et al. (2021) also found an increase in older participants over time. This trend of increased adult involvement could lead to co-opting and “watering down”

or de-radicalizing young people's climate activism, as research shows that older activists are less radical than their younger counterparts (Bertuzzi, 2019; Elsen and Ord, 2021). One future direction for research is to examine this trend across time and in other geographic locations.

How young people come into climate action

Researchers have worked to identify the underlying motivations young people have for becoming climate activists. Governmental inaction and the sense that politicians are failing them is a common source of motivation; this is true among young climate strikers in the UK (Pickard et al., 2020; Elsen and Ord, 2021; Feldman, 2021) and is a common narrative in the Fridays For Future movement as a whole (Han and Ahn, 2020). Haugestad et al. (2021) and Martiskainen et al. (2020) found a variety of motivations for participation among climate strikers in Canada, the USA, the UK (Martiskainen et al., 2020) and Norway (Haugestad et al., 2021). Both found that concern about the environment and environmental threats and engagement with and desire to affect politics were key motivators. Additional motivators for protest participation included concern for family and future generations; being part of a protest movement; solidarity; anti-capitalism; security; collective guilt; past protest participation; the presence of organized environmentalism, and social capital (Martiskainen et al., 2020; Kenis, 2021). While the above research examines why young people mobilized, Fisher (2016) discusses the process of coming into activism. Fisher found that many young climate activists have some sort of transformative moment that compels them to commit to activism. For many, this was a moment of seeing environmental destruction. Many young people also held concerns for social justice and nature that proceeded and gave enhanced meaning to their transformative moments. Although sparked by particular moments, young people describe climate activism as a dynamic and ongoing process of continuously recommitting to activism.

Outcomes of young people's climate activism

Research also examines the outcomes of young people's activism, both for the young people themselves—how activism impacted their lives—as well as its bigger political ramifications. Regarding the outcomes for young people, much of the findings are not particularly surprising: young people who participated in Fridays For Future held less exploitative and more preservationist views of nature than students who did not participate (Barbosa et al., 2021). Additionally, students who engaged in activism developed self-efficacy, empowerment, and

optimism (Deisenrieder et al., 2020; Cattell, 2021; Elsen and Ord, 2021). Climate activism also enhanced their understanding of climate change, both how it impacts daily life as well as the politics of it (MacKay et al., 2020; Elsen and Ord, 2021). Lastly, research found that climate activism opened up new opportunities for young people, such as social connections (MacKay et al., 2020; Elsen and Ord, 2021).

While it is important to know that climate activism has positive outcomes for young people, research on the impacts of activism for young people falls into a paradigm that views young political actors as “citizens-in-training” (Gordon, 2009; Taft, 2017) by viewing activism as a learning experience instead of legitimate political action. Doing so requires that researchers pay more attention to the political impacts of young people’s climate activism.

And indeed, (Fisher and Nasrin, 2021a,b) have made the call to focus on political outcomes. Despite the importance of this call, we could locate only two papers of the 51 identified that address this. Han and Ahn (2020) conclude that the young people’s climate movement has successfully changed the public discourse around climate change and brought attention to global inertia. They have also successfully united disparate groups like students, teachers, unions, and environmentalists. Despite this, the young people’s climate movement has been unable to garner enough power to enact the systemic change necessary. Kenis (2021) came to similar conclusions, finding that the movement has succeeded in re-politicizing the issue, thus putting it on the public agenda. However, through “empty demands” (p. 135), Kenis claims that the movement has made itself vulnerable to neutralization and co-option by hegemonic forces.

How young people understand climate change

A significant portion of the literature on young people’s climate activism addresses how young people are understanding climate change. Much of this literature suggests that young people view climate change in more radical terms. Pickard et al. (2020) document how young people view climate change as an urgent crisis with potential for catastrophic impacts, thus requiring a radical rebuilding of society. (Piispa and Kiilakoski, 2021) and Terren and Soler-i-Marti (2021) found that young people view climate change as an issue of justice. Additionally, young people are linking climate change to capitalism (Holmberg and Alvinus, 2020; Pickard et al., 2020) and are willing to put the needs of the environment above those of the economy (Emilsson et al., 2020).

At the same time, young people are not a monolith and not all espouse radical perspectives on climate change– Dupuis-Déri (2021) found a split between more moderate vs. radical left young people within one activist organization. Similarly,

Gaborit (2020) also found variance in terms of radicalism, and young people who were further left were more willing to critique capitalism. Piispa and Kiilakoski (2021) found that young people coalesced around the notion of “moderation” and “slowing down”, while Huttunen (2021) found that young people wanted favored more responsive politicians over a deeper political revolution– not particularly radical ideas.

Han and Ahn (2020) explored the narrative structure of young activists’ understanding of climate change. In this narrative, the villains (past generations, state leaders and the media) have passed the burden onto the victims (future generations and the Earth) by failing to act. Faced with the gross inaction and negligence of the villains, the victims will not remain mere victims. Instead, they become heroes by seeking justice through collective action. Young people will hold the villains accountable pushing for systemic transformation.

Taken together, this literature paints a picture of young people with more radical and justice-oriented understandings of climate change. Because of this, Bowman (2020) argues that young people’s climate strikes are typically analyzed through the frames of mainstream environmentalism and engagement approaches, but that these frames are inappropriate. Instead, he suggests using Pulido’s framing of subaltern environmentalism, distinguished from mainstream environmentalism by economic and social marginalization, by lives structured by domination, and by the centrality of the issue of positionality (Pulido, 1996). Bowman points out Pulido’s claim that subaltern environmentalism is characterized by the struggle for environmental justice (Pulido, 1996) and that climate justice is, indeed, central to the demands of young movements like (Fridays for Future, 2019).

How young people are acting on climate change

Literature on young people’s climate activism also discusses how young people are acting on climate change. Given their more radical understandings of the issue, it is not surprising that much of the literature shows that young people are also taking more radical approaches to action. In particular, three papers found that young people tend to favor collective action and civil disobedience when it comes to climate action (Gaborit, 2020; Pickard et al., 2020; Kenis, 2021). This action tends to be disruptive, but is rooted in non-violence, peace and joy (Pickard et al., 2020). Kenis (2021) comments on how young activists are using politicized tactics, which have successfully brought climate change to the forefront of public conversations. Overall, the manifestations of activism are largely shaped by availability– young people tend to adopt the politics and tactics of what is already happening in their geographic location (Prendergast et al., 2021; Rainsford and Saunders, 2021).

Just as understandings of climate change differ among young activists, so do their ideas for action. O'Brien et al. (2018) created a typology that describes the various types of dissent represented by young climate activists. They categorize youth dissent as dutiful, disruptive or dangerous. Dutiful dissent represents more normative and non-disruptive approaches, whereas disruptive and dangerous dissent are more radical, disruptive and non-normative. Similarly, research with French young climate strikers also found strong support for civil disobedience, but differing willingness to engage in it and differing views on the use of violence (Gaborit, 2020).

In regards to young people's activism, several scholars (Pickard, 2019; Kettunen, 2020; Dupuis-Déri, 2021) note that young activists often operate outside of traditional structures, in what Pickard (2019) terms "Do-It-Ourselves" activism. In this, young people "act politically without relying on traditional collective structures, such as political parties and trade unions to inform, organize and mobilize in a top down way" (Pickard, 2019, p. 5). Do-It-Ourselves activism occurs through individual lifestyle politics but also when young people come together to act collectively, such as in the climate strikes.

Another theme regarding how young people are acting on climate change examines the constraints put on activism. Kettunen (2020) found that both inertia among peers and friction between young people and adults created barriers to participation in activism. Dupuis-Déri (2021) also found that, when operating in a school context, adult authority figures often had the final say in decision making. Nakabuye et al. (2020) talk about the unique challenges faced by young African activists; these include limited formal climate change and lack of support, especially when demands oppose community economic needs from industries like logging and mining.

In regards to tactics, both Curnow et al. (2021) and Foran et al. (2017) examine how young people use humor, sarcasm, and irony in their activism. Curnow et al. (2021) examine a divestment campaign at the University of Toronto, where activists used what they termed snark— a type of humor that relies on sarcasm, irony, anger, and self deprecation—to develop identities, express rage and to build agency and solidarity. Foran et al. (2017) studied young activists who attended COP-19. They found that these young people aimed their activism at pointing out hypocrisy and failures of politicians, often through humorous actions like a lemonade stand to fund climate adaptation. It is likely, given ongoing studies of young people's participation in formal organizations (such as Thew et al., 2020), that more studies of this type are likely to emerge over the next few years.

Finally, two papers examine the use of social media as an organizing tool. Wielk and Standlee (2021) found that young people engaged in coalition building over social media by projecting activist identities, creating narratives that attract and engage other activists, and engaging in political conversation using evocative emotional narratives to build connections that

resonate. Another paper found that social media was used to create group cohesion and emotional attachment (Brünker et al., 2019).

Perceptions and representations of young people's climate activism

A final theme identified in the literature on young people's climate activism explores how it is perceived and portrayed by outside entities. Several of these papers look at how the media portrays young activists. In general, these papers point to how the media delegitimizes young climate activists. (von Zabern and Tulloch, 2021) found that, while articles gave protesters a voice, they typically portrayed them apolitically, thus undermining protesters' agency and reproducing existing power structures. Huttunen and Albrecht (2021) also note the dominance of adult voices in debates on the young climate strikes. And finally, Bergmann and Ossewaarde (2020) found an ageist bias in the media in Germany. Similarly, Hess (2021) critiques a common frame in the United States media: the notion that Gen Z "will save us." Hess offers up examples of this from popular US media, discussing why it is problematic to reduce a generation to a singular, static narrative. While Hess celebrates the activism of Gen Z, he also concludes that "being seen as a beacon of hope is quite different than being truly listened to", an observation that certainly seems to be true.

Discussion

While the recent years have yielded important work on young people's climate activism, it is a new body of work and there are significant gaps and limitations. In the following section, we identify opportunities for expansion.

Moving beyond White activism

The first opportunity for expanding on existing work is the gap in the current literature on climate activism in what can be called the Global South and in marginalized communities across the world. More precisely, we not only identify this gap, but also a preponderance of data and theory that focuses on the Global North and largely on wealthy and White communities. More deeply, we find a general literature on young activism tends to focus on wealthy, White activism and that research on and with young people from other backgrounds tends to form another separate body of literature. A focus on wealthy, White activism is no surprise: Curnow and Helferty (2018) argue that mainstream environmentalism is a "default white space" and call for an "ethic of accountability" in environmentalism. In current research, most available data focuses exclusively

on young people in Europe, the United States, Australia and New Zealand. This is particularly notable when it comes to examining the composition of young people engaging in climate activism—there have been several large quantitative studies capturing protest participation across Europe (Wahlström et al., 2019; Zamponi et al., 2022) and some in the United States (Fisher and Nasrin, 2021b). While these studies are important in establishing the demographics of these movements, the literature neglects participation in most of the world. This paints young people's climate activism as centered in wealthy, mostly White countries, when in fact it is a global phenomenon. We argue that researchers must be accountable not only to the unjust impacts of environmental damage, but also the unjust distribution of research and knowledge. Thus, one key area for further research is examining the youth-led climate activism in the Global South. And indeed, scholars and news media alike have documented young people's climate activism in places like the Pacific Islands (Cocco-Klein and Mauger, 2018; Hayward et al., 2020), India (Singh, 2015) and African nations (Nakabuye et al., 2020). However, in centering activism in the Global North, researchers perpetuate misguided notions about who cares about and acts on the environment (Taylor, 1997). The centering of literature on the Global North also impedes full exploration of young people's activism in global, regional and national climate regimes where “Black lives matter less” (Sealey-Huggins, 2018; p.102) and in contexts where researcher's direct experiences of climate change may lead them to write with more reflective and autobiographical approaches to research (see Sultana, 2022).

This gap is also notable when it comes to more nuanced topics, like motivations for activism and how young people are understanding and acting on climate change. This is problematic, as there are significant disparities in how climate change is experienced in the Global North and South. While the Global North is responsible for the vast majority of carbon emissions, the Global South will experience the worst impacts of climate change (Shi et al., 2016). Additionally, countries in the Global South are disproportionately exploited for fossil fuel resources and experience a higher level of marginality when it comes to global politics, and young people in the Global South have historically been identified as the “worst affected victims of resource degradation and environmental pollution” (Bajracharya, 1994, 41). Thus, there is great opportunity to expand research to include young people in the Global South.

The work done in the Global North can also be expanded. Within the Global North, there are also populations with different relationships to climate change. Groups who already experience marginality in the Global North—communities of color, Indigenous communities, low-income communities, disabled populations, immigrant and migrant communities and LGBTQ+ communities—are also disproportionately impacted by climate change and fossil fuel extraction, despite typically contributing fewer greenhouse gas emissions (Kajiser and Kronsell, 2014; Routledge et al., 2018). Thus, researchers in

the Global North should examine how climate activism is understood and performed differently across lines of race, class, gender identity, sexual orientation, Indigeneity, immigration status and ability.

More than mass mobilizations

Another key limitation of the current literature is the overemphasis of mass mobilizations. Much of the literature only examines young people engaged in the Fridays For Future walkouts. Indeed, these protests are an important aspect of young people's climate activism, as they are perhaps the most visible elements of this movement and are key in catalyzing action. However, these single-day events are only one element of the climate activism young people are involved in today. In focusing so heavily on them in the literature, research is neglecting the varied activities that young people are engaging in to demonstrate dissent and act for change. This presents a fairly flat and limited image of young people's climate activism. Researchers have documented these varied activities to a degree, such as work capturing everyday dissent (O'Brien et al., 2018), the campus movement for fossil fuel divestment (Curnow et al., 2021), after school clubs (Dupuis-Déri, 2021) participation and/or dissent through formalized politics (Foran et al., 2017; MacKay et al., 2020). This work should be expanded. Especially important is capturing localized struggles, such as campaigns against fossil fuel extraction, as this work is often done in low income communities of color. Thus, in overemphasizing mass mobilizations, research is overemphasizing the work of White and middle class young people. One important direction is long-term ethnographic work with young people's movements, which will be able to present a more nuanced image of young people's climate activism and the activities that go along with it.

Moving beyond Greta Thunberg

Finally, the analysis in this review revealed a common trend: a hyperfocus on Swedish climate activist Greta Thunberg. Indeed, invoking Greta Thunberg and her activities that sparked the Fridays For Future movement seemed a near-ubiquitous way to introduce papers on young people's climate activism. However, this framing seriously limits the literature by constraining the true scope and scale of young people's climate activism. It obfuscates activities that were happening before Greta's action, and outside of her sway. It incorrectly assumes that Greta was the inspiration for much of these activities, when in fact, many young people were already gravely concerned about and taking action on climate change (Ison, 2009; Fisher, 2016; Foran et al., 2017; Cocco-Klein and Mauger, 2018; O'Brien et al., 2018; Lee et al., 2020). Perhaps

more problematic than just the “Greta framing” is the “Greta methodology” – using speeches or actions by Greta Thunberg to make broad generalizations about the young people’s climate activism. Drawing on the perspectives and actions of a single individual to generalize a global phenomenon constrains an understanding of this movement. To be clear, this critique is not aimed at Thunberg herself – indeed, we celebrate her bold actions, her ability to catalyze a movement and the important work she is doing to hold those in power accountable – but rather the ways researchers have constrained this literature by hyperfocusing on an individual. Thus, as researchers continue to examine young people’s climate activism, an important opportunity is to look beyond a singular hero to the varied ways groups and ways young people are acting on climate change.

Challenges of studying the youth-led movement

In addition to the gaps in the literature named above, we also draw attention to the unique challenges that scholars face when studying young people. These challenges exist not only for those studying young climate activists but for scholars studying young people across a variety of contexts. The contested meaning of the category of “youth”, practical barriers to studying young people, and adultism in the research process must be considered if scholars of the climate strikes wish to engage in reflexive research ethics (Cordner et al., 2012). We first name and acknowledge these challenges, and conclude this paper with some tentative solutions and possible ways forward.

The social construction of youth

One primary challenge of studying young people’s activism lies in the way we define the concept of “youth” and what constitutes a “young person”. The terms used to describe young people vary greatly across and within disciplines. The concept of youth is socially constructed (Bourdieu, 1993) and therefore has different meanings in different contexts. This means youth is not a universal category, nor does it mean the same thing across all social contexts.

While scholars have long acknowledged the social construction of categories like race (Omi and Winant, 1986) and gender (Lorber and Farrell, 1991; Butler, 1999) to name a few, there has been less scholarship that draws attention to the social construction of age (Gordon, 2007). Instead, young people are often described using universal, essentialist categories that reduce “adolescence”, “young adulthood”, and “childhood” into one monolithic experience. Additionally, tracing the history of the terms adolescent, teenager, and youth, Pickard (2019) highlights that these terms are laden with normative

assumptions and are often linked to deviance and delinquency by both scholars and the mainstream media.

These challenges are beyond simple definitional squabbles. Instead, they pose significant methodological problems that need to be made clear. The definition used by the researcher can impact the outcome of the study and the methods chosen. If we continue to rely on essentialist ideas of the concept of “youth”, we risk replicating these ideas, and as a result, contributing to an adultist perspective – explained further below – in our own work. In her work on “do-it-yourself democracy”, Pickard (2019) provides us with a way forward for dealing with all this complexity. She claims,

“There is however no clear-cut or absolute definition of “young people” and this might go some way to explaining why saying who actually counts as young people is so often omitted in studies on their relationships with politics. But one thing is clear: it is important not to generalize and not to lump all young people together as if they constituted in some objective way a homogenous demographic collective... Young people have different backgrounds, attitudes and interests; they have diverse political orientations, as well as varying types and levels of participation in politics. At the same time, young people are neither trainee citizens nor just numbers in the dataset I prefer to consider young people as full citizens capable of reasoned thinking with agency” (27).

In line with this, we argue that scholars studying young climate activists need to be more explicit about the variety that exists across members of this broader movement. To study young people in a way that avoids this essentialism, researchers need to acknowledge the heterogeneity of young people around the world. This means making space for complexity while being clear about the scope of research. This also means *talking to young people* about the definitions researchers use and the boundaries they set around who is and who isn’t “youth” or what is or isn’t “young people’s activism”.

The practical challenges of studying young people

In addition to the challenges around defining youth, there are also practical challenges to studying young people. For important reasons, young people are often given protected status in the context of research. For example, in the United States, all people under the age of 18 are considered minors, and researchers are usually required to receive parental consent before speaking with these young people. To add to the complexity, these rules change globally.

While these protections are important, parental consent can create problems, like the possibility of forced disclosure between a young person and their parent. Think for example, about a

study on young people who identify as LGBTQ+. If a researcher must gain parental consent to speak with any person under the age of 18, that means a researcher could accidentally “out” a young person to their parents by identifying them as a potential participant in this kind of research. While the stakes for young climate activists are different than the example provided above, it is possible that young people may not want their parents to know that they skipped school to participate in a climate strike. The challenge of gaining consent, then, becomes one we need to think deeply about when conducting research on young people (Woodgate et al., 2017; Moore et al., 2018). We share these complexities because researchers across the globe who wish to study young people deal with these questions: How do we gain consent and include the voices and perspectives of young people within the confines of important but challenging regulations around researching this population?

Adulthood and the research process

While other researchers have documented the way adulthood plays out in youth-led climate activism (Biswas and Mattheis, 2021; Ritchie, 2021), we argue that one must also be aware of the ways adulthood can operate within the research process. Adulthood is a bias that regards adults as superior to young people and enables adults to hold power over young people (Checkoway, 1996). Like any kind of systemic inequity, adulthood is not relegated to one arena, like between students and teachers. Instead, adulthood is structured into the fabric of our world, and as a result, it can appear in the research process in a variety of ways. It can be reinforced in the way researchers define the category of “youth”, plan methodologies, or write up and share findings.

In order to challenge this, it is important researchers examine the way scholarship can intentionally or unintentionally reinforce adulthood. This often happens through analytical frames. For example, looking at the activism of young people broadly, Earl et al. (2017) draw attention to the often-used “youth deficit model” where scholars make the adultist assumption young people are not engaged with politics and need adults to do so. This also manifests as the assumption that young people’s activism is preparatory work and not legitimate political action (Gordon, 2009; Taft, 2017). We argue that instead, scholars should consider young people to be “active learners and decision-makers, who have distinct interests and have intersectional identities that include being young [and] need to be studied with agency in mind” (Earl et al., 2017, 8). In a similar vein, Biswas and Mattheis (2021) ask observers of young climate strikes to employ a “childist perspective”, that takes them seriously as a political action and a form of civil disobedience, rather than labeling the activism as “truancy”. While Elsen and Ord (2021) claim that adult activists need to be more aware of the structural power they hold in youth-centered

spaces, we argue, along with the scholars cited above, this power imbalance extends to the researchers who are studying young climate activists as well. Being aware of the realities of adulthood is an important first step in uprooting it.

A key way to start challenging adulthood in research lies in the call we made toward the beginning of this paper: for the participatory co-production of knowledge alongside young people. As discussed earlier, Luna and Mearman (2020), Navne and Skovdal (2021) both pose models of deeply collaborative co-research with young people. This too, comes with ethical challenges, such as the complexities of adults obtaining both consent and assent from young people themselves, given the prominence of adulthood. Luna and Mearman (2020) detailed the process of doing so, which included regularly checking in with the young person that they wished to continue the partnership. Furthermore, participatory research is time-consuming for young people and academics alike. On the one hand, this asks more of young activists, who are already juggling multiple demands on their time, such as school, work and their activism and often without remuneration or direct benefit to them. This is also a challenge for researchers, who operate within neoliberal institutions that place demands for “fast publication”. This makes it difficult to devote the time to participatory research.

And indeed, scholars have found even when adults are aware of and actively trying to uproot adulthood, it does not erase all possible challenges. For example, drawing from her research on the Peruvian movement of working children, Taft (2015) claims that even for well-meaning adults who recognize the agency and authority of young people, the structural power imbalance between adults and young people is difficult to avoid. This reminds us that even with awareness, adulthood can creep into spaces where people are actively trying to develop youth-centered methods. Both Luna and Mearman (2020), Navne and Skovdal (2021) note this possibility even while doing participatory research. In this review, we argue that youth-led and “childist” approaches would not only be beneficial in responding to the opportunities provided by existing literature, but also represent a likely future turn in the academic literature as researchers seek to better understand the youth-centered, youth-led climate action movements that continue to act around the world.

Conclusion

In this review, we explored the development of a growing field of academic literature on young people’s climate activism since 2018. We identify that although 2018 does not necessarily mark a watershed moment in activism itself - and that the roots of young people’s environmentalist activism run much deeper than this - 2018 can be accurately described as a watershed moment in the study of climate activism and, we suggest, in the ways

that adults including academic researchers consider young activism. More specifically, we identify a surge of academic work is inspired by a youth-led, youth-centered approach among activists.

The recent methodological trends in studying young people's climate activism offer many opportunities for future research. Among these, we identified the need for research to move beyond a continuing tendency to focus on mass movements among young people, and particularly movements of young people in the global North and in movements where young people are comparatively rich and disproportionately White. We also identify a tendency to focus on the activism of the influential, and now iconic, young activist Greta Thunberg.

We conclude our review with the hope that our work will support future scholars. We have provided detail on the body of work that already exists on young people's climate activism, as well as gaps in the literature where future studies may make a positive contribution. We have also identified several methodological and ethical challenges that arise from the existing literature. Among these, we celebrate a continuing shift toward youth-led and youth-centered methods, including participatory research, as well as youth-centered theory. The responsibility for leading this shift sits not just with researchers, who themselves operate within constraints such as limitations of time, funding and academic norms. Instead, we hope to contribute to a re-imagining of the systems that produce knowledge. This includes more funding for youth-centered research and increased accountability to young people in making decisions about funding, and the same when it comes to editorial boards.

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The young climate activist Brianna Fruean teaches us that "real education sometimes happens outside of the classroom. I think the school climate strikes have really proven that" (Healy, 2020; 179). Speaking as adult researchers, we hope that young people's action on climate change can continue to educate us about the concepts, forms and practices of activism, in order that we can better uphold young people's voices, and more effectively understand and contribute to their action on climate change.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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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