



# Climate media amidst technopolitical change: challenges, transformations, and new directions for research

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## Abstract

In this essay, we seek to provide a meta-level view of research on mediated climate change communication, taking stock of its achievements, historical and contemporary challenges, and future directions. While existing climate media scholarship has generated important insights to guide research and practice, recent empirical developments and technopolitical transformations challenge the traditional structure of climate media research. Historically, this research developed a tripartite structure where scholars have tended to focus on one of three distinct phases of the mediated communication process: (1) the *production* of narratives, frames, images, and other forms of communication about climate change; (2) the *content and dissemination* of these communication artifacts by and across media industries and institutions; and (3) these artifacts' *reception* by and *effects* on policymakers, partisans, and publics. However, recent developments in communication technologies, media ecosystems, and the broader political landscape—including the increasing importance of social media and AI, new forms of climate obstruction, and rising antidemocratic forces across borders—have made these traditional lines of demarcation increasingly unworkable. While the lines of demarcation between production, dissemination, and reception are increasingly blurred in important new empirical phenomena, each has remained central in many scholarly works and the development of research questions. This persistence of the tripartite model, we argue, has caused climate media research to be slow to reflect the shifting dynamics of mediated climate communication today. After describing and analyzing the structural challenges that make doing more comprehensive climate media research so challenging, we conclude with proposals for new directions for scholarship that can help future research more fully contend with recent technopolitical transformations and move towards actionable research that is capable of grappling with and motivating robust responses to the complexities of climate change amid mounting authoritarian threats.

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## 1 Introduction

2020 was transformative—what social scientists might call a “hot moment” or “critical juncture.” The COVID-19 pandemic upended “normalcy” with lockdowns, video calls, and an acute rupture in the day-to-day lives of most people. Underlying currents of technopolitical change<sup>1</sup> already underway pre-pandemic intensified with the expansion of social media and digital technologies in everyday life, with schooling, banking, medical appointments, and more conducted online, and with social media spreading news—and misinformation—of hospitalization numbers, vaccination availability and safety, and novel strains of COVID (Esteve-del-Valle et al. 2022). These transformations in communication technologies, media ecosystems, and modes of community-building were neither entirely new nor entirely destructive. Indeed, prior to the pandemic, climate justice movements were gaining momentum and leveraging digital and social media technologies in creative ways to build transnational communities and expand networks of solidarity (da Silva, et al. 2024). At the same time, many activists involved with climate politics on the ground were acutely aware of the profound risks and consequences of unfolding technopolitical transformations and the mounting threats of both climate change and antidemocratic movements preceding, during, and following the pandemic. This level of awareness was not, however, always shared by climate communication researchers and scholars.

Climate communication scholars—ourselves included—have been slow to adapt to the rapidly shifting technological and political terrain of recent years. Our work has been further constrained by several socio-material factors, such as prevailing research agendas and, at times, limitations in data availability. Yet, we now contend that there is a profound need to re-examine existing models and methods for doing climate communication research amidst these deep technopolitical changes. While existing climate communication scholarship has generated important insights to guide research and practice (e.g., see existing reviews of the field, such as: Eise et al. 2020; Moser 2010, 2016; Olausson and Berglez 2014; Schäfer and Schlichting 2014), recent transformations in communication technologies, media ecosystems, and political conditions present fundamental challenges to the field of climate communication as it has been traditionally structured. This is particularly true in the area of mediated climate communication, where rapid shifts in online communication and media technologies have most dramatically transformed the communication landscape, and which motivates this essay’s focus.

Historically, predominant communication theories and approaches have favored a tripartite structure where scholars have tended to focus on one of three distinct phases of the mediated communication process: (1) the *production* of narratives, frames, images, and

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<sup>1</sup> By technopolitical change, we mean to indicate shifts in both political conditions and the development and use of new technologies. In our usage of the term “technopolitical,” we seek to especially emphasize changes in political dynamics, technological innovations, and the social application of new tech that are overlapping, non-deterministic, and mutually interacting, with the potential to shape one another in complex and historically contingent ways.

other forms of communication about climate change; (2) the *content and dissemination* of these communication artifacts by and across media industries and institutions; and (3) these artifacts' *reception* by and *effects* on policymakers, partisans, and publics. However, recent developments including the increasing importance of social media and AI, new forms of climate obstruction, and rising antidemocratic forces across geographical and political contexts have blurred, and therefore made increasingly unworkable, these traditional lines of demarcation. Nonetheless, they have remained central in many scholarly works and in the development of research questions. This persistence of the tripartite model is not universal, but remains prevalent in part due to the logistical challenges of doing comprehensive media analyses across borders, cultures, and languages and the difficulties in accessing data from private media companies. The development of robust theoretical frameworks requires meaningful partnerships between different regions in the Global North and Global South and new strategies for data collection and critical study. We argue that this task is a formidable one that requires concerted attention among climate communication scholars.

In this essay, we provide a meta-level view of a selection of interdisciplinary research on mediated climate communication informed by the authors' varied expertise across disciplines and approaches, taking stock of what we see as some of this diverse research area's most notable achievements, its historical and contemporary challenges, and possible future directions. We are an international group of climate communication researchers organized as the Critical Studies of Climate Media, Discourse, and Power Working Group, a part of the Climate Social Science Network (CSSN). We write this essay with a shared commitment to doing meaningful, grounded, and public-facing research, despite our different schools of thought, disciplinary backgrounds, nationalities, and theories of change. This essay does not aim to provide a systematic or exhaustive analysis of the entirety of the field. Instead, we particularly focus on describing and analyzing what we see as structural challenges for research on mediated climate communication by both ongoing and recent, interrelated technopolitical shifts. We then propose possible avenues for climate media researchers that can assist with addressing and moving beyond these past and current challenges. Ultimately, we argue that more meaningful and lasting partnerships across geographical regions, disciplines, and institutions are needed to foster more dynamic and impactful climate media research. This is all the more necessary amid increasingly authoritarian opposition to all university research in general and to climate research in particular.

## 2 Meta-level view: dominant trends and opportunities in climate media research

Research on climate media has traditionally followed certain divisions of focus, with distinct categories of research that at times lack integration of the full communication process (Agin and Karlsson 2021; Hansen and Cox 2015; Olausson and Berglez 2014). The first category of research involves the study of information and media *production*. Studies in this category tend to focus on how textual and visual content are developed, including journalists' and other media-makers' experiences, routines, and professional norms (e.g., Eikelboom et al. 2024; Anderson 2022; Schäfer and Painter 2021; Callison and Young 2020; Berglez 2011; Engesser and Brüggemann 2016). In addition, especially in disciplines like sociology and political science, this category of research also includes studies of the con-

struction of political discourse by outside actors such as interest groups, social movements, governments, scientists, lawyers, and political elites (e.g., Corrigan-Brown 2016; Konkes 2024; Loy 2022; Meckling and Allan 2020; Wetts 2020a). A second category of research focuses on the *content* itself and on the information, messages, discursive strategies, forms of knowledge, visual tropes, and images that are *disseminated* across media environments. This type of research frequently includes media content analyses, visual analyses, social media thematic analyses, and framing and discourse studies (e.g., Hase et al. 2021; Perga et al. 2023, Boykoff 2008; Carvalho 2007; Doyle 2007; Olausson 2009; O'Neill 2019; Hayes and O'Neill 2021; Morris 2021; Morris 2022). A third category of research attends to *reception* and *effects*—how audiences perceive, interpret, engage with, and are influenced by different forms of climate communication (e.g., Corbett and Durfee 2004; Olausson 2011; Stamm, et al. 2000). Drawing heavily on the fields of public opinion, information reception, and psychology, these studies focus on whether and how messages may influence attitudes, behaviors, and decision-making around climate change—although as pointed out by Moser (2016), there has been an imbalanced focus on attitudes over actions. For short, we refer to this division of scholarship into silos that predominantly focus on either production, content and dissemination, or reception and effects as “the tripartite model.”

Taken as a whole, existing climate media research has produced numerous important insights, of which we do not seek to provide an exhaustive overview here (for reviews, see: Badullovich, et al. 2020; Eise, et al. 2020; Guenther, et al. 2023; Holmes and Richardson 2020; Leal Filho et al. 2018; Moser 2010, 2016; Nisbet, et al. 2017; Schäfer and Schlichting 2014). Still, even the most productive areas have some shortcomings, and we argue that these shortcomings are often related to an exaggerated focus on one silo in isolation along with an emphasis on certain geographical regions or specific areas of practice. In the latter sections of the paper, we turn our attention to the longstanding challenges posed by the historical dominance of the tripartite model and how these challenges have been exacerbated by recent technopolitical transformations. Before proceeding to this area of our essay's focus, we first discuss what we see as important research trends and gaps related to a historical focus on a small number of national contexts and media types, which have in turn led to the entrenchment of the tripartite model and the tendency for some climate media scholars to make universalizing assumptions about processes of production, content and dissemination, and reception and effects that may not hold true across different geographies, cultures, and media types.

For example, a prominent focus among researchers has been the identification of climate misinformation both in traditional print and broadcast news media (Schmid-Petri et al. 2017; Schmid-Petri 2017) and social media (Treen et al. 2020) and the changing nature of climate denialism there (Painter et al. 2023). Much less is known, however, about how such media messages are received or acted upon by different audiences and in different countries—particularly in the Global South—and in online environments. For instance, research has experimentally identified effective ways to combat climate misinformation and denial in the US, the UK, and Australia, using scientific ‘consensus messages’ and ‘inoculation,’ i.e., informing people about misinformation before it reaches them (Lewandowsky and van der Linden 2021; van der Linden 2021). However, evidence from other countries and cultural contexts in some cases disconfirms or complicates these findings (e.g., in the German context: Schmid-Petri and Bürger 2022; Tschötschel et al. 2021). Moreover, additional research is needed to understand how these strategies might function within complex, privatized

digital media ecosystems, as well as to understand the underlying social and political conditions in which the production and circulation of climate misinformation thrives in different places.

The exaggerated historical focus on the US and Anglosphere countries in climate communication studies—and particularly the lack of focus on countries in the Global South—has long been documented, described, and denounced (e.g., Olausson and Berglez 2014; Comfort and Park 2018; Schäfer and Schlichting 2014; Schäfer and Painter 2021; Edwards, et al. 2023). This oversight is not due to a lack of insights from the Global South; rather, it can be understood as a consequence of the widely noted yet ongoing failure of many Global North and English-speaking scholars to comprehensively integrate different knowledges into their frameworks and to center diverse insights from a variety of regions and languages into their analyses (Connell 2020; Ganapathy 2021; Okoliko and de Wit 2020; Konkes and Mann 2024; Takahashi 2023; Thaker 2021). In addition, the relatively fewer monetary resources available for research in Global South countries mean that fewer climate communication research programs exist there (though some of course do, such as the Interdisciplinary Observatory on Climate Change (OIMC) in Brazil), and many Global South researchers face economic precarity, political instability, and lack of state support, making it difficult to obtain permanent positions and steady research funding (Esquivel 2020; Takahashi 2023). Moreover, along with language barriers, the climate threats in low- and middle-income countries are fundamentally different from those in rich countries, and journalistic cultures also vary markedly across nations, further increasing the difficulty of comparative efforts (Harris 2018; Ganapathy 2021; Konkes and Mann 2024; McAllister et al. 2024).

Encouragingly, this situation is improving. Multiple recent examples of comparative studies between countries in the Global North and Global South (e.g., Lester 2019; Vu et al. 2019; Hase et al. 2021; Wang and Downey 2023) and within the Global South (e.g., McAllister et al. 2024; several chapters in Sachsman and Valenti 2020) have been published. In addition, there is a significant body of literature that has been published in non-English publications (e.g., Daoust-Boisvert et al. 2024; León and González 2013; Lee and Lee 2024; Moreno and Almiron 2021; Takahashi 2013), which may not be as accessible to Global North researchers but contain many insights. Among other findings, this work suggests that news coverage of climate change in the Global South is more likely than Global North coverage to emphasize concrete impacts of climate change on humans and local communities rather than discussing it as a political or scientific issue up for debate (Vu et al. 2019; Hase et al. 2021), and climate skeptics are featured much less frequently as sources in Global South media than in Global North countries, especially the US and Anglosphere countries (Schäfer and Painter 2021). Further, in some Global South countries that face daunting climate threats, discussions of climate change in news media engage with particularly complex and multi-dimensional aspects of the problem (McAllister et al. 2024). In Indian news media, for example, discussions of climate change emphasize the Global North's historic responsibilities for the problem compared to current risks borne by local Indian populations, but these same stories also tend to elide discussions of inequality and stratification of risk within India itself (Billett 2010). In addition, studies of media production suggest that far fewer specialist climate journalists are present in many Global South countries, particularly in Latin America and Africa, than in the Global North (Appiah et al. 2015; Mercado-Sáez and Galarza 2017; Takahashi and Martinez 2017). However, there is currently no meta-analysis of climate media research in the Global South, in contrast to

the several existing meta-analyses of the general field (which disproportionately represent Global North countries), making it difficult to summarize major findings and issues across this diverse and heterogeneous set of geographical regions. This further emphasizes that the historical focus on the Global North still needs to be shifted more towards the Global South, and more productive and lasting partnerships still need to be established between Global North and Global South scholars, departments, and institutions.

Another challenge facing the interdisciplinary field of climate media research is the ongoing shift away from print media. While most modern consumers of news—across the globe but particularly in the Global South (Ejaz et al. 2022)—access news stories through forms of “new media” (including television, blogs, digital and social media), much climate media scholarship remains focused on print journalism. Climate media research could also benefit from an expanded focus on the role of creative modes of communication such as visual art, theater, podcasts, film, documentaries, and fiction (e.g. Hubbell and Ryan 2021), which are studied much less frequently than traditional news media but nonetheless retain critical cultural importance. Furthermore, text-based communication of climate change continues to be much more widely studied than either audio or visual communication formats (though with important exceptions, e.g., for visual-format studies see: Bieniek-Tobasco et al. 2019; Doyle 2011; Hayes and O’Neill 2021; Hopke and Hestres 2018; Lester and Cottle 2009; O’Neill and Nicholson-Cole 2009; O’Neill et al. 2013; O’Neill and Smith 2014; O’Neill 2019; O’Neill, et al. 2023; Schäfer 2020; and for audio-format studies, see: Backhaus et al. 2023; Forde et al. 2010), despite the longstanding importance of visuals and audio for traditional print and television news media systems and the rising popularity of social media platforms where newer forms of online communication rely heavily on pictures, videos, memes, and podcasts (Anderson 2017; Leon and Erviti 2017; Mooseder et al. 2023; Segerberg 2017). Sound and images are important to study because they are imbued with culturally distinct meanings that vary across different publics and places, at the same time as they can be rapidly shared across cultural groups and media environments, underlining the need to attend to diverse national and cultural contexts in understanding the construction of these artifacts’ (multiple and perhaps divergent) meanings, as well as their emotional appeals and impacts.

In addition, while one of the most thriving areas of climate communication research focuses on documenting how climate messages are constructed or “framed” by different groups and testing these messages’ effectiveness (Guenther et al. 2023, Badullovich et al. 2020), there remains insufficient research on how particular frames or simplified narratives of climate change historically emerge within particular national contexts and also how they may shape attitudes, emotions, and behaviors outside of experimental settings (a longstanding concern for many critical climate and environmental communication scholars, e.g., Anderson 1997). For example, research on framing effects often examines how different ways of portraying the threats of climate change, the co-benefits of action (e.g., for public health), and the possibilities for collective and individual engagement may increase policy support and intended behavior change (Brosch 2021; Chu and Yang 2020; Guenther et al. 2023). But findings from effects-oriented studies are seldom based on real-world communication or measure longitudinal effects (Anderson 1997; Diamond and Urbanski 2022). Similarly, while some work has sought to understand the complexity and unpredictability of emotions in the reception of climate messaging (e.g., Diamond and Urbanski 2022; Ettinger et al. 2021; Feldman and Hart 2016, 2018; Sanford et al. 2023; Weber and Constantino 2023), more attention to emotional dynamics is still needed. Similarly, the role of other

psychological factors such as identities that may influence messaging and reception (Diamond 2020) need more scholarly focus (Chapman et al. 2017). Without greater attention to these contextual elements, insights from these media effects studies are hard to make actionable and relevant for practitioners—especially amidst rapidly shifting technopolitical contexts and conditions that vary based on geographical location and are not experienced in a uniform way across different social groups or across time (Geiger et al. 2023; Hornsey and Fielding 2016).

Finally, the growing research on solutions journalism—which shifts away from an episodic focus and emphasis on the threats of extreme events to an emphasis on the many possible “solutions” to climate change (McIntyre 2019; Thier and Lin 2022)—suggests that this type of reporting can increase engagement among some specific, targeted audiences. But we know little about how the ever-increasing variety of proposed climate actions (IPCC WGIII 2022; Feigin et al. 2023; Wetts et al. 2024) are reported on in different countries, and how they are perceived by and impact diverse audiences. We also know little about journalists’ desire to change their traditional approaches to reporting or what climate policies they personally endorse. Some limited survey work of environmental journalists’ attitudes towards proposed climate mitigation and adaptation actions has been carried out (Borth et al. 2022), but there is little beyond this. Indigenous journalism scholars also highlight the need for expanding beyond settler-colonial “solutions” to climate change that perpetuate exploitative logics of dominion as opposed to “reckoning” with the deeper roots and divergent ramifications of climate change within modern nation-states (e.g., Callison 2021; Callison and Young 2020). Further work in this area is particularly important because climate obstruction now often entails the creation of doubt around the cost, appropriateness, and viability of climate policies (Coan et al. 2021, Lamb et al. 2020), and existing climate reporting on “solutions” may, in some cases, advance hyper-capitalist responses to climate change while excluding or negatively reporting on more transformative ones, thus possibly obstructing public support for more robust, ecologically-minded, and justice-oriented climate policies (Callison 2021; Callison and Young 2020; Morris 2025, 2021; Roosvall and Tegelberg 2018).

Across these illustrative examples, then, we can see that climate communication research has made many important advances. Yet, as others have pointed out (e.g., Boykoff 2011; Hansen 2011; Guenther et al. 2023; Olausson and Berglez 2014), a persistent barrier for research has involved the relative segregation and lack of interchange between scholars studying various phases of the mediated communication process within and across different knowledges, cultures, and national contexts. This lack of dialogue has led to insufficient attention to structural issues of power and has impeded researchers’ understandings of both the contingency of discursive formations and the potential for discursive change (Carragee and Roefs 2004; Olausson and Berglez 2014; Carvalho 2010). It has also led to a failure to note and respond to the emergence of new modes of climate obstruction and delay as well as new strategies for resistance and transformation in different media environments and places. In the next section, we discuss how these longstanding oversights have been exacerbated by new empirical developments that have pushed this imperfect-but-persistent tripartite division of labor to a crisis point.

### 3 Technopolitical transformations: challenges for existing theories and methods

Several ongoing transformations in communication technologies, media ecosystems, and political conditions have reshaped the climate media landscape and disrupted the traditional conception of mediated communication as involving independent spheres of production, content and dissemination, and reception and effects. In particular, we focus here on: (1) the expansion and centrality of social media in everyday life; (2) shifting forms of climate obstruction; (3) antidemocratic developments in digital communication spaces, such as the consolidation of media ownership and the “gentrification” of the internet (Lingel 2023); and (4) increasing public disengagement, disconnection, and fatigue in an era of intersecting global crises. These slow-moving and also rapid shifts in technological and political conditions are restructuring the nature of communication and, arguably, the essence of democratic debate. Most centrally for our argument, each of these technopolitical transformations creates new fusions and interconnections between information and media production, content and dissemination, and reception and effects that have traditionally been studied separately across disciplines and places, with of course notable exceptions (e.g., Anderson 2014; Callison 2014; Carvalho and Burgess 2005; Carvalho et al. 2017; Carvalho et al. 2021; Forde et al. 2010; Hansen 2011; Konkes and Mann 2024; Lester 2010; Lester 2019; Russell 2023). As a result, we argue that the traditional approaches of a tripartite model outlined above are ill-equipped to fully conceptualize the contemporary conditions and challenges for communicating climate change and doing climate media research.

First, one of the most obvious and fundamental technopolitical shifts of the last two decades is the way that social media platforms have challenged traditional understandings of publics as “audiences”—that is, as simple receivers of information (Anderson 2014, 2017; Cardoso 2008; Comunello and Mulargia 2023; van Dijck et al. 2018). Of course, the conceptualization of individual members of the public as passive receivers of information and news was never accurate, and critical scholars have long shown how even before social media, people actively “decode” and “encode” new meanings from texts and images and use media artifacts in unique ways and for unintended purposes (Hall 1973). Yet the rise and expansion of social media even more fundamentally challenges the conceptual division between production, content and dissemination, and reception and effects that still guides many studies of climate media. Models of how media professionals choose which messages or narratives to reproduce are increasingly confounded by what Bruns refers to as “producers” (Bruns 2007) which describes user-led content creation environments. In addition, “users” play a critical role in disseminating news stories from traditional print journalism and television broadcast formats across digital platforms, serving as “secondary gatekeepers” that amplify some news stories and sources and not others (Hermida et al. 2012; Singer 2014).

Therefore, research that seeks to understand the production and reception of information cannot restrict itself to deciphering journalistic norms and behaviors nor to analyzing how audiences passively “receive” climate messages produced by professional media-makers. While the public were never passive consumers, it is clear that diverse publics are now central to both the production and dissemination of content with the rise of online social media platforms (Pezzullo and Cox 2021; Sanford and Lorimer 2022). As a result, there is a greater need for understanding the norms, behaviors, and motivations that guide content-creation

among various publics within and across borders, including how they may be influenced by and/or diverge from professional journalistic norms. In addition, insights from research on public reception and emotional responses should be brought to bear in understanding what types of messages publics are likely to disseminate throughout the communication environments they are instrumental in curating and creating. For example, while a growing number of studies now analyze the types of messages or narratives about climate change that appear on social media (e.g., Holder et al. 2023; Wetts et al. 2024), few take the next step of analyzing which of these messages resonate with publics and how other users engage with them, which would be critical to evaluating their overall impact (with notable exceptions though, for example see: Sanford et al. 2023; Veltri and Atanasova 2017). Scholars of cultural reception have provided several useful concepts that could guide such work, such as cognitive-emotional currents, motivated reasoning, moral value framing, multiple varieties of cultural resonance, and more (Attari, et al. 2014; Bail, et al. 2017; Hoffman 2015; Feinberg and Willer 2013; McDonnell et al. 2017; Wetts 2023). We therefore see the potential for richer analyses of social media arising from collaborations that bridge the tripartite model, as processes of communication online are inherently intertwined as publics produce, receive, interact with, curate, reinterpret, amend, and share content.

Second, the transformation of media ecosystems via the rapid explosion of social and digital media across nearly every aspect of everyday life has also opened the door for new forms of climate obstruction that blur the previous division between production of content by interest groups and their dissemination in media spheres. Existing research focusing on traditional print and broadcast media systems shows how news routines and journalistic norms of objectivity and moderateness can lead journalists to reproduce the perspectives of the powerful, such as official government representatives and large, economically powerful industries (e.g., Hall, et al. 1978; Miller and Riechert 2013; Morris 2025; Wetts 2020b, 2023), and to overrepresent the perspectives of climate skeptics and contrarian scientists, at least in the earlier years of climate news coverage and continuing to some degree still in conservative news media (Antilla 2005; McAllister, et al. 2021; Painter and Ashe 2012; Painter et al. 2023). Yet journalistic gatekeeping is no longer a prerequisite for broad information dissemination; interest groups now have direct access to powerful communication platforms to directly broadcast their messages.

Accordingly, social media platforms have been leveraged by climate change counter-movements to facilitate the spread of messages of climate delay within and across borders that raise doubts about the need for and viability of comprehensive climate policymaking (Brulle 2014; McKie 2021; Holder et al. 2023; Plehwe et al. 2021). These counter-movements also now have access to automated communication technologies to further expand the reach of their messaging. Unregulated artificial intelligence (AI) and malicious bots are posing new challenges for community-building, democratic speech, and processes of deliberation online. New studies (e.g., Institute for Strategic Dialogue 2022, 2023), for example, show how a small cohort of social media accounts have an outsized influence in originating and amplifying climate misinformation and denial across platforms and across nations. The consequences for understanding emergent tactics of climate obstruction within this transformed technopolitical landscape are only beginning to be understood.

Third, and relatedly, the concentration of ownership of online communication spaces by a shrinking number of “Big Tech” companies predominantly located in the US (Lingel 2023) further facilitates these new techniques of climate obstruction. Chantal Mouffe

(2022) argues that especially since 2020 and the COVID-19 pandemic, there has been the rise of what she calls “authoritarian digital neoliberalism”—defined as the encroachment of digital tech into social routines and everyday life from doctor’s appointments to dating to debating new climate policies. Mouffe worries that without checks on their power, private tech companies will elide public oversight and continue to develop AI, algorithms, and digital platforms without democratic accountability. Lingel (2023) calls this the “gentrification of the internet”—or, the private enclosure of cyberspace by just a few massive companies. By manipulating what, and how, media content is received and potentially acted upon, unregulated social media platforms owned by a small number of wealthy corporations and individuals facilitate (and profit off) the weaponization of climate misinformation, hate speech, and violent discourse (Wardle and Derakhshan 2017). In addition, corporations contribute to “predatory delay” through the promotion of corporate climate solutions more generally known as greenwashing (Wright et al. 2024). As discussed by Mouffe (2022) and Lingel (2023) and empirically investigated by researchers at the Institute for Strategic Dialogue (2022), Big Tech companies monetize, enable, and in many cases actively recommend these greenwashed promotions, climate misinformation, and vitriolic rhetoric that sew unease and mistrust across groups and undermine civic culture and processes of democratic decision-making.

Misinformation and new techniques of climate obstruction that leverage automated communication technologies are therefore not simple problems that can be “fixed” according to the tripartite conception of how mediated communication works—where interest groups and political elites are engaged in a pluralistic competition to sway publics, and debates are moderated by journalists and media-makers whose professional identities in many ways depend on their perceived commitment to norms of democratic deliberation (Fenton 2025). Instead, algorithmic models, concentration of ownership, and the proliferation of bots have reconfigured and blended these (never truly separated) spheres of production, content and dissemination, and reception and effects—where “users,” interest groups, and bots generate media, and algorithms that respond to individuals’ previous reception of messages partly replace professional judgements as gateways to content diffusion—calling on scholars to develop new theoretical models and ask new questions capable of grappling with these hybrid formations.

Finally, meaningful public engagement is crucial for building the social mandates required for transformative and justice-oriented climate policymaking (Carvalho et al. 2017; Carvalho et al. 2021). However, despite international public survey data showing increased public concern about climate change (EU 2023; Leiserowitz et al. 2019), the challenge of climate disengagement and audience fatigue persist (Capstick et al. 2015; Hulme 2009; Tyson et al. 2021). For example, previous global surveys of news consumption have found consistent evidence of growing climate news avoidance (e.g., Robertson et al. 2023). Understanding the factors influencing engagement, disengagement, and fatigue are important concerns for climate media research (Carvalho et al. 2017; Carvalho 2010; Raja and Carrico 2023, 2022), but they are difficult to investigate from standpoints traditionally carved out by the tripartite model and restricted geographical and media foci. This is because studies need to attend simultaneously to: (1) how multiple social and environmental problems unfold and are portrayed in an abundant yet increasingly privatized and self-segregated hybrid media ecosystem and (2) how those issues (and their interrelationships) are received and interpreted by different publics and collectives of people. In addition, disengagement and fatigue

take place in wider contexts of change outlined above, where malignant bots, enclosure of online communication spaces, and algorithmic content-diffusion make misinformation and vitriolic content increasingly commonplace, particularly on unmoderated and unchecked platforms (van Erkel et al. 2024).

All of these technopolitical transformations have had profound consequences for democracy, climate communication, and decision-making processes. Yet, as we have argued above, climate media research has struggled to provide a full grasp of these shifting technopolitical conditions due in part to a historical and continued reliance on the tripartite model with its lines of demarcation between perceived phases of the communication process—phases which have always been interconnected, but are now more integrated and blurred than ever before. Again, this persistence of the tripartite model is not universal and scholars have made efforts to transcend these boundaries, for example, through interdisciplinary collaborations, multimethod work, and research that simultaneously attends to multiple “phases” of the mediated communication process. Indeed, the tripartite model’s persistence in the face of these efforts is not due to a lack of scholarly understanding of the complexity of climate media, but rather is a symptom of deeper structural challenges impeding dialogues and meaningful collaborations across disciplines, cultures, and borders. These barriers motivate our proposals for possible new directions for climate media research that we will turn to next in the section that follows. Our goal here is to help break down these barriers to create clearer pathways for collaborative research as well as to support and elevate the ongoing work of critical climate media scholars who have already been contending with these challenges and developing impactful scholarship.

#### 4 New directions for climate media research

With proliferating interest in how to communicate about and motivate action to address climate change, it is important for climate media researchers to step forward with analyses and findings that are useful to and also informed by a plurality of people from diverse cultures and places. Moving forward, we recommend several ways that climate media researchers can collaborate and expand beyond current disciplinary and structural limitations in order to better theorize and analyze mediated climate communication amidst recent and ongoing technopolitical changes and rising authoritarianism.

As we’ve argued, the ways in which publics get their news and information as well as who becomes content creators themselves have changed in ways that blur the traditional lines between production, content and dissemination, and reception and effects of climate media. This means that, most fundamentally, we must find ways to better integrate lessons learned from existing scholarship across these traditional lines of demarcation and from outside of the Global North and Anglosphere. Concretely, we suggest that this means climate media scholars should:

- (A) Focus attention on phenomena that bridge or confound the traditional dividing lines of mediated climate communication research

We advocate for increased focus on research questions that fundamentally require cross-disciplinary and cross-field dialogues. For example, more concerted scholarly attention on

user-led and bot-led dissemination, algorithmic curation, digital media infrastructure, and the enclosure/“gentrification” of online spaces could pull together theoretical and methodological approaches from across all three major areas of existing climate media research. By integrating as opposed to separating the traditional “phases” of mediated climate communication, this would provide a stronger understanding of these important empirical phenomena themselves as well as complicate and deepen related research approaches. Research on misinformation, for instance, would be pushed to integrate micro-level understandings of how members of different publics respond to different types of messages with analyses of the meso- and macro-level contexts in which misinformation proliferates and appears plausible. This is crucial for grappling with cultural diversity not just across but also within different national contexts and online environments—a current oversight in many climate media analyses in spite of increased attention to audience segmentation research. While challenging, we suggest that this collaborative work could yield insights on phenomena central to contemporary communication processes and develop more comprehensive and dynamic responses to the ongoing threats of climate change and antidemocratic political regimes.

(B) Seek to build or expand research institutions and networks that bring together climate communication scholars from across related disciplines, geographical areas, and cultural contexts

Rather than integrating lessons from the literature on an intermittent and ad-hoc basis, we advocate that researchers should strive to build and strengthen institutions that forge connections across traditional divides. This is becoming even more imperative as institutions of knowledge and learning are under attack by authoritarian governments across borders. Here, our goal is to build collaborations that make learning across disciplinary and regional divisions a routine part of the research process, and where scholars will be structurally supported and able to work together to generate new theories to creatively comprehend and address phenomena that confound traditional subfield approaches. Smith and Lindenfeld (2014) point out how transdisciplinarity can be a useful tool to move beyond simply studying the messages and content circulating in the media, to how media directly affects, impedes, and opens opportunities for more robustly democratic decision-making processes. This transdisciplinarity also requires an expanded focus beyond the US and Anglosphere to understand how different and often marginalized scholars and publics from the Global South are contending with, using, and transforming new media technologies. Emergent social media platforms, AI, bots, new modes of climate obstruction, and climate change itself are all transnational in nature, yet each are distinct in terms of national impacts and possible local responses. These distinctions require comparative transnational as well as transdisciplinary engagements. As noted above, the relative lack of funding for research in Global South countries has been a major structural obstacle toward integrating Global South-originating knowledge and theories into the climate media literature. Therefore, we advocate for the development of robust university-led initiatives and public funding schemes aimed at developing Global North and Global South collaborations as well as large- and medium-scale transnational research projects. We recognize that public funding is increasingly precarious amid mounting anti-climate and anti-university reactionary movements, but we urge

universities to take bold action to support as opposed to eliminate secure and stable funding for collaborative research amid authoritarian threats to higher education.

Moreover, while there has been growth in the number and scope of interdisciplinary and international research centers and scholarly networks focused on mediated climate communication research (e.g., Climate Social Science Network (CSSN), Yale Program on Climate Change Communication (YPCCC), Media and Climate Change Observatory (MeCCO), Interdisciplinary Observatory on Climate Change (OIMC), the Centre for Climate Change and Social Transformations (CAST), Monash Climate Change Communication Research Hub (MCCCRH), Exeter's Centre for Climate Communication and Data Science (C3DS), Center for International Climate Research (CICERO) in Oslo, and the George Mason University Center for Climate Change Communication (4 C)), there is still a Global North bias that at times still perpetuates predominantly Anglophone communication theories and approaches. In addition, there remain theoretical and methodological barriers that have slowed the development of more meaningful dialogues between those studying climate media within and outside of English-speaking nations, as well as those studying different “phases” of the mediated communication process. Networks that foster trust and long-term collaborations of scholars across disciplines, subfields, languages, and geographical locations could center Global-South originating theories and provide researchers with fluency in the major findings and tools outside their traditional foci within the tripartite structure. These networks could also facilitate more agile and informed theory-building that provides a more comprehensive understanding of mediated climate communication that can both identify and contend with new modes of climate obstruction, mis/disinformation strategies, antidemocratic threats, and changes in media ecosystems within various national, sub-national, and supra-national contexts. A core part of this theory-building means dispelling with the assumed universality of Global North communication models and findings.

(C) Strengthen university programs that connect climate communication researchers with activists and media-makers

This institution-building is of course no easy task, especially amid growing anti-university sentiment among rising authoritarian movements, and requires the development and maintenance of meaningful relationships that will take time, commitment, and monetary resources to foster—all of which are perpetually scarce amid the ongoing neoliberal and reactionary gutting of higher education. This is where climate media scholars can learn from activists who have been strategically navigating authoritarian threats and structural obstacles to build strong collectives for decades. Take, for instance, the ongoing work of the Zapatistas in Mexico who have effectively built and maintained strong alliances with Global North activists and scholars ever since the early days of the World Wide Web (Martinez-Torres 2001). The Zapatistas and their transnational allies have deftly used the internet and online forums to sustain their movement and to connect and collaborate across borders in opposition to neoliberal globalization and the unjust exploitation of Indigenous waters and lands (Khasnabish 2010). While recent shifts in technopolitical conditions and antidemocratic chills on speech have made this coalition-building via online (and offline) forums even more challenging, activists are often at the cutting-edge of outmaneuvering political barriers and technical obstacles, and scholars have a lot to learn from them.

By taking note of and learning from the coalition-building strategies of the Zapatistas and other Indigenous-led and transnational activist collectives, climate media researchers at universities can improve their own connectivity across institutions as well as with climate movement organizers, “frontline” climate communicators, and other climate media-makers (Callison 2014; Carvalho et al. 2017; Carvalho et al. 2021; Forde et al. 2010; Foxwell-Norton et al. 2021; Maibach et al. 2024). This is necessary both because climate communication scholars can provide activists and practitioners with empirical research and “intellectual labor” to help inform their efforts, and also because activists’ and practitioners’ insights and knowledges can help scholars build community networks and stay attuned to unfolding technopolitical developments and challenges as they emerge. This partnership involves prioritization at times of study designs that are relevant and meaningful for tailored communities of engagement and collective movement-building. For example, Kenward and Brick (2023) investigated the impact of protest events on environmental attitudes in direct collaboration with activist groups. This collaborative approach helped produce a greater understanding of the protest tactics and rhetorics that can connect with and mobilize different portions of the public, showing the possibility of research that comes from a shared commitment to building stronger and more dynamic climate coalitions.

Certain university programs have emerged in recent years to bridge this theory–practice divide (e.g., the Metcalf Institute’s Environmental Reporting Fellowships, the Solutions Journalism Network, the Oxford Climate Journalism Network, University of Colorado’s Inside the Greenhouse, Griffith University’s Climate Action Beacon, among others), but more can be done to bring climate media scholars, activists, and media-makers in dialogue with each other at and by universities themselves. This is where university initiatives can expand beyond their restricted focus on traditional academic outputs and instead serve as vibrant meeting places for transdisciplinary and transnational dialogues including regular exchanges between media-makers, activists, and scholars in the Global North and Global South. Existing programs can more explicitly push back against the neoliberal and authoritarian logics that both impede impactful scholarship and incentivize a surplus of studies that entrench unidimensional theories, outmoded models, and uncritical approaches. Bold actions by universities must happen now more than ever to comprehensively address the mounting threats of climate change, antidemocratic politics, and the rapid technopolitical transformations of today.

## 5 Conclusion

The past decade has seen dramatic changes in new modes of communication, digital technologies, media ecosystems, and methods for community-building online. Publics previously conceived of as “audiences” and “users” are now also content-creators and media-makers; activists, organizers, powerful interest groups, and political figures have access to broad communication platforms and automated communication technologies to expand the reach of their messages; algorithms designed to generate engagement—and profit—are now central to media diffusion processes on online platforms, partly replacing journalists’ professional judgments and norms of what is “newsworthy” and shaping which messages, narratives, and images of climate change proliferate on media platforms. As scholars of mediated climate communication, some of our field’s most prominent theoretical models and research

practices have not yet recognized or fully reckoned with these transformations. Disciplinary divisions and silos have long produced research gaps and oversights; in the face of powerful technopolitical shifts, these divisions have become untenable. Our hope is that our essay's spotlighting of the structural challenges that climate media researchers face can help motivate new research questions, approaches, and collaborations—along with a concerted investment in the long, slow, and important work of institution-building—required for climate media scholars to be able to build on their accomplishments, move beyond the barriers and divisions of the past, and rise to the urgent work of the present moment.

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