MEDIA CULTURE &SOCIETY

Reclaiming the human in machine cultures: Introduction

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Abstract
The relationship between technology and culture has always been a contested issue in media and cultural studies. Ongoing advances in computing and Artificial Intelligence (AI), however, are posing new kinds of questions and challenges to the field. As many have argued, these technologies invite to rethink the relationship between technology and culture, positing the idea that not only humans, but also machines produce and construct 'culture'. The goal of this themed issue is to consider notions such as 'algorithmic culture' and 'machine culture' from within the tradition of media and cultural studies, in order to move toward a conceptualization of culture in which machines are intertwined within human systems of meaning-making. In this introduction to the themed issue, we discuss why these emerging technologies and the human cultures forming around them are integral to the mission of media and cultural studies, and what the media and cultural studies tradition can bring into ongoing and future debates regarding the nexus of humans, machines, and culture.

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The relationship between technology and culture has always been a contested issue in media and cultural studies. From Raymond Williams's critique of technological determinism (Williams, 2004) to Stuart Hall's emphasis on representations (Hall, 1997) and James Carey's cultural study of communication (Carey, 1989), cultural studies have traditionally reaffirmed the centrality of culture to understand the configuration of modern media. This does not mean that technology has been ignored; indeed, the implication of emerging media for society has been an important line of scholarly inquiry within aspects of media and cultural studies (e.g. Hayles, 2005; Innis, 2008; McLuhan, 1994; Mumford, 2010; Ong, 2013). Ongoing advances in computing and Artificial Intelligence (AI), however, pose a new challenge to this trajectory of reflection in media and cultural studies (Gunkel, 2012). The proliferation of AI, machine learning, and algorithmically driven applications, as well as the collection and processing of data that undergird such technologies, are causing scholars to rethink the relationship between technology and culture. What has changed is the agentic nature of technology in that devices and applications increasingly function as seeming independent actors (Hepp, 2020; Zhao, 2006) and are interpreted by people as such (Neff and Nagy, 2016). In such an 'algorithmic culture', scholars have posited the idea that not only humans, but also machines produce and construct 'culture' (Dourish, 2016; Striphas, 2015).

While acknowledging that machines have agency and that the design and technological functions of machines matter, this themed issue aims to emphasize that this agency only emerges in interaction and relationship with humans and their cultures. The collective work advanced here aims to counteract approaches that, in the attempt to account for the implications of algorithmic technologies and the datafication of everyday life, have fixated on the machine – its design, actions, and outcomes – almost to the exclusion of humans. Such scholarship emerged as a result of efforts to motivate scholars to acknowledge the role of technology in contemporary life. However, what began as a correction to theoretical oversights in anthropocentric paradigms has begun to over-correct, drawing people's attention so far toward the machine that the human element now falls out of focus. The narrative of technology as the driver of life through which progress will be achieved also pervades popular discourse, further turning people's focus toward the machine and away from human agency and responsibility.

It is within this milieu, that we argue the tradition of cultural studies and media theory can provide a strong corrective and a powerful theoretical framework to conceptualize *human* cultures in which machines are intertwined within human systems of meaning-making. Problematizing notions such as 'algorithmic culture' and 'machine culture', the papers published here provide theoretical reflections and empirical evidence that help reaffirm the importance of accounting for the human. They draw from a communication and media studies approach to show that humanism still provides powerful theoretical and methodological tools to interrogate and better comprehend ongoing transformations.

Although communication and media studies have previously mostly neglected AI, the emergence of AI-based tools of communication, such as voice assistants, has sparked scholarly interest (Guzman and Lewis, 2020). AI has primarily existed in cultural consciousness as well as scientific dialog in a mythical form (Ekbia, 2008; Natale and Ballatore, 2020). Crucially, the roles that AI technologies perform within communication

– including as a communicator sending and receiving messages – have remained at odds with the anthropocentric paradigm of communication as a process among humans (Gunkel, 2012). For these reasons, AI is often conceptualized and theorized within emerging research in its mythologized form: as a completely autonomous technology. The result is research focused on machine agency to the neglect of human agency.

To address this problem, this themed issue enters into dialog with cutting-edge approaches that examine AI as channel and producer of communication (Guzman, 2018; Guzman and Lewis, 2020; Hepp, 2020; Natale, 2021) and algorithms as producer of culture (Bucher, 2018; Finn, 2017). While these approaches create useful ground for the study of AI technologies as media of communication, what 'machine culture' means still remains a largely open question that approaches such as Actor-Network Theory or new materialism can only partially address. A recalibration of theories and methods informed by cultural studies is urgently needed to contribute to this debate. Such a revisioning needs to include the ongoing interrogation of how human and machine systems minoritize certain groups and reproduce forms of bias and inequality (Noble, 2018; Ricaurte, 2022). This critical and cultural work should not only concern the ways we understand and study AI and other digital technologies but also impact on ethical and practical considerations through which these technologies are regulated, developed, and used on a global scale. As Ricaurte argues in this issue, approaches to AI ethics have been situated within a Western perspective that has hitherto largely excluded the majority world, even though its citizens are subject to AI and automation's far-reaching effects. Therefore, the work of AI ethics cannot be limited to Western notions of questions regarding use and design and, instead, must be reimagined and call into question what AI extracts from and gives back to populations globally.

It is with these considerations in mind that we challenged the authors of this themed issue to 'reclaim the human in machine cultures'. In the remainder of this introduction, we first explain why emerging technologies and the human cultures forming around them are integral to the mission of media and cultural studies. Then, conversely, we consider what the media and cultural studies tradition can bring into ongoing and future debates regarding the nexus of humans, machines, and culture.

AI and machine cultures: A challenge for media and cultural studies

Following a range of technical achievements in the field of AI, from voice assistants such as Alexa to social bots and the application of algorithms to diverse areas, a new wave of studies on AI and algorithmic agency has emerged in the social sciences and the humanities. This scholarly inquiry overlaps with attempts to grasp the far-reaching implications of big data and the datafication of nearly every aspect of people's lives. It is the widespread collection, processing, and redistribution of such data that enables AI and algorithmic technologies to function. Media and cultural studies have the potential to provide a particularly important contribution to understanding these changes and their societal impacts, due to the centrality of communication and culture in novel AI systems.

Key attributes of the form and function of AI and related technologies – what Taipale and Fortunati (2018) call the 'next new media' – set them apart from more traditional forms of media around which media studies was founded, that is, film, TV, and radio, and from technologies of 'new media' to which the field has more recently adapted, that is, ICTs and their applications. Functionally, the level of agency of these emerging media is greater than that of traditional media that informed early thinking regarding the intersections of technology and culture (e.g. Innis, 2008; McLuhan, 1994; Mumford, 2010; Ong, 2013). The form and function of traditional media were considered central to social change in this foundational scholarship, but, ultimately the messages were produced and interpreted by humans: the technology (from paper to radio to TV to the Web) functioned as a channel that shaped messages by humans.

AI and algorithmic technologies, however, go beyond transmitting and influencing the form of human messages – they generate messages. In their capacity to directly exchange messages with another communicator, 'communicative AI' (Guzman and Lewis, 2020) expand the role of technology within communication beyond that of a mediator to that of a communicator. By their design and function, AI and algorithmic technologies have an increased level of agency in that it is the technology itself that forms and interpret messages (Zhao, 2006), automating communication and communicative labor (Reeves, 2016). Thus, conversational assistants such as Amazon's Alexa, automated news-writing technologies, and similar applications take on a function that has largely been assigned to humans within communication and media theory (Gunkel, 2012; Guzman, 2018; Natale, 2021; Zhao, 2006). Such a shift disrupts not only how people use technology but also the very nature of the technology itself (Gunkel, 2012) and calls further into question the philosophical underpinnings of theory that eminent scholars such as Haraway (2000) and Turkle (1984) first interrogated as computers and the digital began to pervade aspects of everyday life.

At the same time, many of these technologies have not abandoned their role as mediator altogether (Banks and de Graaf, 2020; Guzman, 2017), but even in this more traditional role, their function often differs from the devices and applications communication scholars typically refer to as media. As discussed within this themed issue, the information that algorithms and AI applications are mediating may be generated by either humans or other automated technologies (or both) and flow across communication networks comprising entanglements of humans and machines (see articles in this issue by Bucher, 2022; Komarraju et al., 2021; Thylstrup, 2022). In addition, these technologies are capable of taking over mediating and curating functions previously performed by humans (see Gaw, 2021), as well as play an increasing agentic role in the formation of media (see Zhang, 2022). What some scholars identify as the most significant difference between communicative AI and other forms of media is the level of agency that AI and algorithms exert in the communication process that, ultimately, helps to facilitate the automation of communication (Hepp, 2020; Reeves, 2016; Zhao, 2006). Such automation is transforming media work, such as the production, distribution, and consumption of journalism, while also affecting multiple other aspects of communication that extend well beyond the boundaries of traditional media and media industries.

Increasing numbers of scholars do not see these significant departures between communicative AI and existing media as a reason to exclude such technologies from

communication and media studies; rather, they advocate for their inclusion precisely because algorithms, AI, and social robots are challenging the boundaries of media studies and of what scholars thought they knew of communication and media (e.g. Fortunati and Edwards, 2020; Gunkel, 2012; Guzman, 2018; Hepp, 2020; Natale and Cooke, 2021; Peter and Kühne, 2018; Reeves, 2016; Sugiyama and Vincent, 2013; Zhao, 2006). Similar to the introduction of personal computers and the internet followed by mobile and social media, algorithms and AI appear to be part of an evolution of media, media systems, and media's place within society, the scope of which will be yet unknown for some time.

The argument for the inclusion of new technologies into the remits of media and cultural studies should not rest solely on the technical attributes of media alone. As has long been the focus of this tradition, the implications of technological change for society (e.g. Innis, 2008; McLuhan, 1994; Mumford, 2010; Ong, 2013) and for how humans conceptualize and understand themselves (e.g., Haraway, 2000) must remain central. For many of the scholars within this themed issue, as well as ourselves, what is even more important are the social implications of these technologies as humans enter into communication – the creation of our very reality (Carey, 1989) – with them. Drawing on Carey's (1989) notion of ritual communication and the work of associated theorists, Marvin (1990) argues that technology has one dramatic role: 'That is to facilitate, organize, and otherwise mediate and provision human relationships, to elaborate the significance of communicative relationships, and to provide opportunities and codes for maneuvering and manipulating those relationships' (p. 224). Marvin's argument is not one of technological determinism but, rather, is an acknowledgment that technology is embedded in culture and comes to have meaning through human action and sense-making. What matters most in communication and media studies, yet can be so easily overlooked in the hype surrounding any technology, is human meaning-making. It is questions regarding how people may come to envision the self with and through AI (Haraway, 2000; Papacharissi, 2019), how such technologies may mediate people's understanding of their world and experiences within it (Hepp, 2020), how human choices and errors reverberate in the functioning and malfunctioning of digital media (Barassi, 2020), and how power dynamics within society may be disrupted or further entrenched (Reeves, 2016) that are at the heart of media studies regarding these emerging technologies – and therefore, at the center of this themed issue.

The contribution of the media and cultural studies tradition

In fact, this themed issue was stimulated by our belief that the perspective of media and cultural studies can provide a crucial contribution to the lively debate on these topics both in the academy and in the public sphere. The essays collected here open several threads in this direction, from the relationship between algorithmic agency and digital labor (Komarraju et al., 2021) to the intertwining of machine cultures with visual cultures (Zhang, 2022), from the communicative implications of biometric technologies (Bucher, 2022) to the technical and social lives of data (Thylstrup, 2022) and the impact of algorithmic mechanisms in the cultural industries (Gaw, 2021). More broadly, the

media and cultural studies tradition offers at least three important correctives to existing debates on the topic.

First, this tradition stimulates us to question not just the notion of machine but also the notion of the human (e.g. Haraway, 2000), which is constantly called upon in discussions with AI (Rhee, 2018). As a wealth of research has shown, approaches to AI and computer science emerged through and within very restrictive representations of the human user, which often corresponded to the white, middle-class men that were envisioned as the key users for the new technologies (Broussard, 2018; Hicks, 2017; Natale, 2021; Ruha, 2019). Acknowledging such bias not only invites scholars and practitioners to pursue more inclusive and fair approaches to theoretical and practical work in areas such as human-computer interaction. More generally, it reveals the sheer impossibility of universalist approaches to the 'human' (or to the machine used by humans) and the need to constantly interrogate and problematize such a notion. Reclaiming the human in machine cultures, in this sense, means first and foremost to consider that technologies do not interact with abstract models of users but with diverse communities, individuals, and groups.

Second, existing perspectives on AI and automation make too little effort to contextualize machine cultures more firmly within a global dimension. This does not entail only the need to investigate how these technologies are adopted and interact with people in different parts of the world. It also means, as recent reflections in this same journal have convincingly argued, to eradicate the primacy of Western theory and practice and open up appropriate pathways through which non-Western perspectives and approaches from the global South not only participate in the dialog but are able to shape theory and practical work. Cheruiyot and Ferrer-Conill (2021) have noted, for instance, that even when scholarship addressing social phenomena and dynamics in Majority World countries finds appropriate space, it often needs to justify its relevance through a region-centric approach that emphasizes the specificity of the studied context; this, however, ultimately diminishes their ability to offer theoretical, conceptual and methodological guidance to an international scholarship. In this regard, a global approach to AI, algorithms, and data informed by media and cultural studies entails not just an expansion of the field of contributions but a more drastic change of the way we encounter, build, and apply theory.

Third, the contribution of media and cultural studies is needed to envision, support and develop more ethical designs, ideas and applications in the AI field. AI ethics has recently become a hot topic in corporate and academic spheres, to the point that the mainstream media are increasingly weighing in. Ethics, however, is not to be articulated in terms of merely whether to use or not use a technology, but dealing with the larger social and cultural implications of the design and adoption of technologies across different geographic, economic, and cultural spaces in everyday life. In this context, as the contribution by Ricaurte (2022) hosted in the Crosscurrents section of this journal demonstrates, feminist and critical approaches can provide strong theoretical and analytical tools to advance ongoing conversations toward a more nuanced and culturally situated understanding of 'AI ethics'.

For all the much-heralded novelty of AI, therefore, the perspective advanced here is in continuity with the critical work that the journal hosting this themed issue has advanced since its foundation in 1979. Most recently, *Media, Culture and Society*

animated a timely conversation about the question of how users' perceptions, beliefs and cultures inform their reactions to algorithms and therefore the outcome of interactions with digital media (Andersen, 2020; Lomborg and Kapsch, 2020; Ytre-Arne and Moe, 2021). This posed firmer ground to the effort, which this themed issue shares, of recovering the role of human agency alongside and within so-called machine agencies and cultures. Additionally, the debate on digital platforms and infrastructures, which the journal has hosted and stimulated (see, among others, Hill, 2020; Nieborg and Helmond, 2019; Plantin and Punathambekar, 2019), feeds into our efforts to tackle the complex intersections between human and technology, material and discursive formations that inform current societal directions and dynamics. All these ongoing conversations find their root in long-standing theoretical, critical and empirical intervention that has posed the notion of culture(s) at the very center of media and communication studies (see, among others, Franklin et al., 1991; Hall, 1980; Preston, 2006; Scannell, 2015) – to which this themed issue endeavors to contribute. The challenge that this themed issue poses to scholars interested in the relationships between communication, algorithms, data, and AI is to reconceptualize the notion of culture while also drawing upon, adapting, and, when necessary, expanding existing theoretical and methodological tools that have guided scholarship within this research tradition for several decades.

Themed issue overview

The issue opens with Taina Bucher's 'Facing AI: Conceptualizing "fAIce Communication" as the Modus Operandi of Facial Recognition Systems' that interrogates the meaning and function of 'face' within a world increasingly dependent upon facial recognition and surveillance. Bucher situates face as a socially constructed medium of communication, arguing that while face has been predominantly theorized as a key aspect of nonverbal communication with humans, it increasingly has become a nexus of communication with machines, as it is scanned and judged within algorithmic systems. As Bucher writes, '. . . faces are no longer (if they ever were) meaningful only for humans'. Instead, people now are engaged in a type of human-machine communication through algorithmic facework, which Bucher denotes through the neologism 'fAIce communication', that unfolds within hierarchies of human power.

Face is but one aspect of people's existence that has become increasingly datafied, and it is the collection, ordering, and analysis of such data and the resulting implications for individuals and society that are at the center of Nanna Bonde Thylstrup's, 'The Ethics and Politics of Datasets: Deleting Traces, Encountering Remains'. Thylstrup identifies growing efforts to problematize the conceptualization and function of datasets as an emerging discursive formation that she terms, 'critical dataset studies'. Such inquiry into the nature and implications of datasets, Thylstrup continues, shares important conceptual and theoretical overlaps with critical archival studies and can be informed by this body of work. Although datasets are created by, through, and for machines, as Thystrup explains, they are sites of human power and 'serve as material reminders that machine cultures rely on scattered human remains'. Thus, they need to be approached within a framework of ethics that centers the human.

The next three contributions focus on the entanglement of humans and machines within the context of specific algorithmic and AI applications used for employment, entertainment, and photography respectively. In 'Agency and Servitude in Platform Labour: A Feminist Analysis of Blended Cultures', Sai Amulya Komarraju, Payal Arora, and Usha Raman examine the power dynamics among workers, engineers, and technology at Urban Company, a gig-economy business in India that provides in-home beauty services coordinated through its app. Through interviews with beauty workers who perform the services and the engineers who design the app, Komarraju et al. demonstrate that the negotiation of power among the different human and technological actors and the ultimate social and economic outcomes for workers are much more complex than the dominant 'master-slave' narrative that often surrounds algorithmic gig work. They put forth the idea of 'blended culture' to replace the concept of 'algorithmic culture' to guide people's thinking about 'the ways algorithms and human cultures mutually re(make) each other'.

Theory building surrounding the interplay between human action and algorithmic function continues in Fatima Gaw's, 'Algorithmic Logics and the Construction of Cultural Taste of the Netflix Recommender System'. Gaw approaches the Netflix Recommender System as a contemporary intermediary that serves as cultural 'tastemaker'. Through a socio-technical analysis, Gaw interrogates how the NRS is technologically, socially, and culturally constructed and contributes to the construction of culture. Building off the theoretical conceptualizations of 'media logic' and 'computational logic', Gaw proposes the concept of 'algorithmic logics' to serve as a 'conceptual framework that undergirds the inextricable relations among human agency, cultural processes, and technological infrastructures in constituting algorithmic cultures in everyday life'.

The conversation regarding the agency of humans and technology next shifts from the process of identifying and recommending art to its creation in 'Algorithmic Photography: A Case Study of the Huawei Moon Mode Controversy' by Yolanda Zhang. At the center of this controversy in China was the debate regarding whether a particular AI-enabled mode used for capturing images of the moon on a smartphone enhanced the image taken by the human or algorithmically created an image. Through an examination of Moon Mode and the discourse surrounding it, Zhang reveals that the function of AI-enabled photography 'distributes the activity of seeing transversely across camera lens, sensor, file, database, screen, and the human operator'. The larger, cultural issue then is not whether the AI technology enhanced or created a new image, Zhang explains, but how Moon Mode serves as a contemporary instantiation of the ongoing negotiation of the roles of humans and machines in photography.

In this issue's *Crosscurrents* article, 'Ethics for the majority world: AI and the question of violence at scale', Paola Ricaurte interrogates and reconceptualizes AI ethics. Drawing upon critical race and feminist scholarship, Ricaurte articulates how AI, its conceptualization, development, and deployment enacts varying forms of violence (e.g. symbolic, economic, political, environmental, and physical) at the individual, institutional, and societal levels. It is the majority world – a term referring to the spaces in which the largest global populations reside – that bears the greatest burden and exploitation from datafication, algorithmization, and automation. Yet, Ricaurte continues, the

debates surrounding AI ethics are defined from the perspective of powerful actors within the Western world that stand to benefit to most from the global power disparity. Therefore, AI ethics must be reimagined through a 'transversal, longitudinal, and multidimensional ethical framework' that replaces the status quo of violence with a new ethic aimed toward conviviality and responsibility toward the majority world.

These articles collectively demonstrate that meaning-making surrounding emerging technologies rests neither solely within the function of the machines (as popular discourse would posit) nor solely within the actions of humans (the focus of previous academic paradigms). People's understanding of AI and algorithms and the personal, social, and cultural implications of the use of such technologies are constructed in the space where humans and technology meet. This space is one of 'situated actions' (Suchman, 2009) in which the interactions among humans and machines and human meaning-making unfold in specific cultural and technological contexts. The study of communication and technology within and as culture has been the hallmark of a long trajectory of academic research focused on the integration of media, from newspapers to film to the internet, into daily life and the implications thereof. It is from this rich tradition that the ongoing discussions about machine and algorithmic cultures can find the methodological and theoretical keys to move forward.

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