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Introduction: Posthumanism and Media Studies

Poppy Wilde[1] and J.J. Sylvia IV[2]

Posthumanism fosters a more inclusive and less hierarchical approach to our entanglements with both human and non-human elements. Posthuman theory, particularly as articulated by N. Katherine Hayles and Rosi Braidotti, has long been influential in media and cultural studies. Ferrando (2020) argues:

> posthuman ethics invites us to follow on three related layers. First of all, as a post-humanism, it marks a shift: from universalism to perspectivism, from multiculturalism to pluralism and diversity. As a postanthropocentrism, it induces a change of strategy: from human agency to agential networks, from technology to eco-technology. As a postdualism, it requires an evolution of our awareness: from individuality to relationality, from theory to praxis. (147)

This Special Issue of the *Journal of Posthumanism* therefore asks, how does such posthuman perspectivism, pluralism, agentiality, eco-technology, relationality, and praxis, apply to the future of media and cultural studies? How might we understand the very concept of "future"?

Media is exploding at an ever-increasing pace across digital platforms, working with, through, and against new technological advances such as artificial intelligence (AI). These developments are also occurring during a time of global shifts that include pandemics and climate change. In light of these changes, it is the ideal time to provoke more conversations between media and cultural studies through posthumanism in more systematic and thoroughly developed methodological ways.

Several approaches have been proposed that align media studies with or explicitly draw on posthuman concepts. In 2021, *Posthumanism in Art and Science: A Reader* was published, making the argument that "aesthetic production is a vital part of posthumanist thinking processes, which thereby grow ever more urgently relevant to social and ecological problem-solving" (Aloi & McHugh, 2021, 2). Art, understood from this perspective, helps break free of established human-centred and anthropocentric forms of thinking by imagining and inventing new ways of understanding the boundaries of what it means to be human and by breaking down human/non-human binaries. Ecological-based thinking can also be leveraged to help think beyond these binaries, as Karpouzou and Zampaki (2023) argue in *Symbiotic Posthumanist Ecologies in Western Literature, Philosophy and Art.* One might even blend art and ecological thinking, as Karpouzou (2023) argues in her chapter that speculative fiction can help us imagine better futures that "encapsulate the mutual beneficial relationships between different lifeforms," (100).

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Other recent studies have developed posthuman approaches to rhetorical practice that embrace a more broadly defined ecological approach. Boyle (2018) argues for rhetoric as a posthuman practice that focuses on "the exercise of tendencies to activate greater capacities," where bodies are defined broadly and can encompass "a human body, a social network, pollination process, [or] a communication infrastructure," (5). Rhetoric so formulated opens up persuasion, or the activation of greater capacities, to the larger ecological network that moves beyond the human. Wiley & Elam (2018) explore how we might understand the combination of humans and technical media as synthetic subjects . Using makerspaces as an example, they argue that the subject can be understood as the subject of composition (*agencement*), rather than the human or the technology involved in that process.

Elsewhere, Iliadis (2013) proposes that a shift away from a cybernetic understanding of communication as a process of pre-existing agents that transmit messages to one another could offer the possibility for the development of a new underlying informational ontology for communication and media studies, which would lend itself to new methods. Such ontologies and methods have been explored in relation to media studies through, for example, posthuman approaches to autoethnographies and subjectivities (Wilde, 2020; 2022). These approaches allow a reconsideration of selfhood beyond a static, fixed, individual, towards fluid, emergent subjectivities through rhizomatic entanglements with "others". This allows perspectives that embrace the intra-dependence between entities, rejecting anthropocentric positions of mastery and control.

Monea and Packer (2016) propose a media genealogy approach that extends the type of work being done in media archaeology. In a special issue, they explore, through a series of interviews, how the work of several different scholars, across a range of fields are already undertaking scholarship that could broadly be considered a form of media genealogy. Examples include Peter Galison's research on the standardisation of time and the emergence of scientific objectivity (Packer and Galison, 2016), Chris Russill's work on how the ozone layer is perceived (Maddalena and Russil, 2016), and Mark Andrejevic's early analysis of big data through the lens of power (Sylvia and Andrejevic, 2016).

Building on this genealogical approach, Sylvia (2019; 2021) has argued that posthuman ethics, ontology, and epistemology could be adopted in media studies through a more explicit embrace of affirmative approaches such as counter-actualization, modulation, and counter-memory. When combined, these approaches could offer the philosophic support, or undergirding, for a robust practice of posthuman media studies. Elsewhere, exploring the tensions and potential contradictions between the history of cultural studies and posthumanism, Cord (2022) asks, "can or should Cultural Studies and the nonhuman turn really be brought into the contact zone?" There are therefore a variety of possible responses and resonances between posthumanism and media studies.

Speculative Futures for Media Studies

For this special issue, we challenged contributors to explore, extend, and develop a posthuman praxis for media studies. This posthuman media studies emerges broadly from the work of theorists such as N. Katherine Hayles, Rosi Braidotti, Karen Barad, Gilles Deleuze, and Michel Foucault, and engages with the ethical, epistemological, and ontological aspects of posthumanism.

Posthumanism and media studies can, we argue, intersect in a variety of productive ways. Both separately and together these fields can help to foster a critical understanding of identities, human relationships, and society – and the nature of being in a mediated world. The critical posthumanism that we and our authors draw on specifically across this volume is anti-transhumanist discourse of

the variety wherein we see minds being uploaded to computers and living on in a post-flesh world. However, our entanglement with technologies, and our mediated existence, is a central facet to arguments from critical posthumanism that seek to destabilise boundaries such as human/machine.

In the contemporary (postdigital) moment, positioning humans as separate from their (technological) others or mediated selves is to deny, or diminish, a large part of our existence. Technologies mediate experiences, while posthumanism analyses the implications of living in a technologically saturated world and how that disrupts taken-for-granted assumptions of what it is to be human. Of course, humans have always been implicated with their media and technologies, but the media and technologies have changed. Now, the media and technologies we are entangled with not only implicitly call into question our human/non-human relations, they also offer ways to consider how different identities are represented and performed in mediated contexts. Thus, it is not only that playing a videogame, for example, calls into question the boundaries between self and other, between player and machine, but also that the content of videogames can present stories and narratives of these same complex identity structures. Media therefore plays a role in our subjectivation, through practices of identity figurations, media fandoms and cultures, and our positions as consumers, audiences, players, watchers, and users.

As Barad (2007, 49) argues, performative approaches challenge the idea that representations are separate from the entities they depict. Instead, considering things as performative focuses on the act of representing and its effects, as well as what makes those acts effective. It is in this way that media relations and representations shape both reality through also shaping the narratives we have and discourses through which we understand reality (such that disruptions can also be made between what is perceived as "real" vs. "not real").

Meanwhile, from a new materialist perspective, we begin to see both the vibrancy of matter through our devices – the agency of smartphones, for example – as well as having to deal with the consequences of ever-expanding technological waste. Whilst "cloud computing" paints a pretty image of fluffy white pillows in the sky, the stark reality of server farms situated in the middle of the ocean begs environmental and economic questions around the cost of digital footprints.

The Anthropocene – a core consideration within certain strands of posthumanist research – is no doubt fuelled by expanding technologies, and our on-demand services are doing material damage to the physical world around us. Simultaneously, however, such forms of media globalisation are bringing us closer to certain forms of shared understanding and shared experiences, offering more diverse representations, and potentially more democratic practices that consider the ethics of whose voice is heard, whose story is told. These offerings might also move us away from anthropocentric perspectives, allowing closer, more accessible and impactful work that highlights the importance of non-human others around us.

There are therefore multiple tensions across posthumanism and media studies. Media texts, media relations, and posthumanism therefore all offer questions about who we are, and who we might become. However, much media is still made by humans, for humans, and continues to enact humanistic hierarchies of control and power. In this special issue, then, we are particularly interested in papers that propose new methods of inquiry and analysis within media studies, and that engage with the potential of an affirmative posthuman turn within critical and cultural theory. In light of these persistent human-centric structures, it becomes crucial to reimagine how media can evolve beyond these entrenched hierarchies. The affirmative posthuman turn offers a transformative lens, prompting a re-evaluation of not just media content but the methodologies and practices within

media studies itself. This issue, therefore, shifts our focus toward the potential of posthumanism to reshape media praxis, as explored in the articles that follow.

Posthuman Media Praxis

Mandy Elizabeth Moore kicks off this special issue with their article "We Have Never Been Acafans: Notes Towards a Posthumanist Approach to Media Fandom". Moore uses this article to propose a theoretical vision for posthumanist fan studies, drawing on the idea that fan behaviours often call into question the traditional Western, humanist, subject in the same ways that posthumanist thought does. For example, Moore suggests that the fan invites the mediated Other into their sense of self, disrupting strict self/other boundaries and binaries inherent in humanist thinking.

From here, Moore argues for an understanding of fandoms as more-than-human, as emergent, and as phenomenon. These considerations draw on key theorists such as Karen Barad and Jane Bennett to articulate both the relations between fans and fannish media (media non-humans that have fans) as well as the relationships within fandoms along the lines of intra-active entanglements. Finally, Moore reflects on possible methodologies to explore fandoms in posthuman ways – including tracing specific material configurations and employing posthuman autoethnographies.

Moving to a medium specific piece, Andrea Andiloro's article "There Is No Videogame: Nishida, Posthumanism and the *Basho* of Gameplay" brings the philosophy of Nishida Kitarō[3] into conversation with posthumanist thought, with a specific analysis of the game *Jetpack Joyride* (Halfbrick Studios, 2011). As Andiloro explains, Nishida's work is not often talked about in posthumanism, yet his whole philosophy focuses on breaking down the divide between subject and object, using a blend of ideas from Zen Buddhism and Western philosophy.

Nishida's (1936/2012) concept of *basho* refers to an underlying, all-encompassing field where opposites like subject and object are unified, transcending dualism and emphasising the dynamic, relational nature of reality. It is this concept in particular that Andiloro applies to the field of videogames, utilising this and Nishida's further work to argue that there is no such thing as *a* videogame, as a separable object, but that there *is* videogam*ing* as an event apprehended within consciousness. This allows Andiloro to analyse gaming not as a dichotomous relation between subject/object or player/videogame, but as an emergence of unified consciousness.

Considering recent the recent TV series, *The Bear* (Calo et al., 2022-), Asilia Franklin-Phipps and Bretton A. Varga's piece "Bear(ing) Down: Encountering Posthuman Critical Media Studies through the (Re)tracing of Object and Embodiment" explores more-than-human relations in the show. The authors argue that, in *The Bear*, agency of objects is emphasised, with specific affects and effects that relate, amongst other things, to status within the human characters of the show.

Drawing on new materialism and Jane Bennett's (2009) notion of "thing-power", the authors highlight the entanglement of "subject" and "object" to demonstrate their emergent connectivity. To explore these connectivities and how they are encountered by the viewer, Franklin-Phipps and Varga each present a reading of *The Bear* that is framed through vibrant, agential materiality as depicted and explored within the show. They demonstrate how "things" in the show become characters in their own right, arguing that, ultimately, objects tell stories.

"Microfascism to Joyful Affects: A Posthuman Approach to Social Media Redesign" by J.J. Sylvia IV makes practical suggestions for interventions in social media design to prioritise joyful affects.

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[3] Here, per Andiloro, we follow Japanese conventions, indicating surname first and first name second.

Social media platforms, Sylvia argues, reward uniformity and penalise deviation from social norms through specific practices and affordances including algorithms and desires (and rewards) for connectivity (for example, chasing the follower numbers). In doing so, Sylvia suggests social media promote forms of microfascism, considered through the works of Deleuze, Foucault, and Braidotti.

To combat these microfascist desires, the author proposes micro-antifascist approaches, drawing on Baruch Spinoza's ethical and political insights around affect and micropolitics. Sylvia's call to affirmative, micro-antifascist action centres around social media redesign including the removal of algorithms, moving away from capitalist measures into nonprofit models, increasing community governance, and building features that promote great inclusivity. If such measures are taken, Sylvia suggests we can create opportunities for a profound transformation of social media into platforms for resistance and liberation.

Claudio Celis Bueno and Jernej Markelj offer a posthuman critique of AI in the form of large language models (LLMs). In "Towards a Posthumanist Critique of Large Language Models," they first engage with existing critiques, particularly those by Emily Bender (2024), which highlight the risks of anthropomorphizing LLMs. Bender's critique, centred on human exceptionalism, calls for maintaining a firm boundary between human and machine cognition. However, Bueno and Markelj argue that this anthropocentric critique is insufficient to address the deeper socio-technical and philosophic implications of LLMs.

They propose a posthuman framework, grounded in concepts such as general ecology, machinic agency, machinic surplus value, and cosmotechnics. This approach shifts focus from the individual human subject to a broader network of human and non-human actors, rejecting the hierarchical distinctions between humans, machines, and the environment. Their critique emphasises how LLMs operate as part of larger socio-technical assemblages and calls for rethinking technology not as an instrument of human control, but as part of a co-constitutive process that shapes both humans and non-humans. This perspective also seeks to explore new forms of engagement with technology beyond the capitalist imperatives of productivity and profit.

Rosa Stilgren's article, "Mutation Materialized: The Concept as Method," explores how concepts, particularly "mutation," can function as methodological tools within posthuman media studies and digital audio production. Building on Mieke Bal's (2009) notion of concepts as socio-material agents, Stilgren critiques the anthropocentric tendencies in traditional concept-ualisation, which fix concepts as static entities. Instead, Stilgren advocates for "concept-ing," where concepts are understood as dynamic, co-evolving entities and are affected by material practices.

Stilgren uses sidechain compression in digital audio production as a case study to illustrate the mutational potential of concepts. Sidechain compression, typically a tool for controlling sound dynamics, is examined as a process that can move between being a functional tool and becoming an aesthetic effect. The "mutation" here symbolises a fluid process that destabilises fixed categories like tool/effect, virtual/real, and linear/cyclical, opening new ways to understand media and technology as an alternative to the fixed, representational logics of traditional media studies.

In the article, "Digital Milieus: a Posthumanist Media Ecology for a Planetary Computation Era," Joaquín Moreira Alonso advocates for a posthuman approach to media ecology that moves beyond the traditional human-centred frameworks. He begins by revisiting Marshall McLuhan's (1964/2003) theory of media as extensions of human capabilities. While innovative, this traditional perspective still views media primarily as tools for human use, emphasising information transmission and human agency.

Moreira Alonso's posthuman media ecology instead recognises the mutual entanglement and shaping of humans, technologies, and the environment, highlighting their interdependence in the context of planetary-scale computation. Rather than media as extensions of mankind, he argues for an ecological approach in which we understand media and humans co-evolving through dynamic, interconnected processes of individuation.

To facilitate this, he introduces the concept of "digital milieus" to replace the traditional idea of media environments. Digital milieus encompass not only software and hardware but also cultural, geological, and political elements. In this context of planetary-scale computation, human agency becomes increasingly diffused as algorithms and non-human actors play more significant roles.

Conclusion

The articles in this special issue present a variety of new thinking, new methodologies, and new articulations between posthumanism and media studies. Collectively, they offer an opportunity to see the crosspollination of ideas: the themes that arise around the agency of the non-human in media, the rejection of anthropocentric thinking and focus, the proposals for new praxis. Media is, and has always been, a part of the human experience, and a posthuman ontological understanding acknowledges and embraces that entanglement. However, the work is not just to recognize it, but to move forward by crafting new practices that allow these media entanglements to unfold into more ethical, affirmative spaces.

As we look to the future of posthuman media studies, it is crucial to consider how these practices continue to embrace those that have historically been "othered" – whether they are human or non-human. Expanding diversity through our media practices offers a way to move beyond humanistic hierarchies and worldviews. However, this imperative must also be considered and carried out in relation to the material becomings of media, understanding the ecological costs. Promising work in this area is already underway. Projects such as SunBlock One, a solar-powered server designed to run the game *Minecraft* (Mojang Studios, 2011), where players monitor their energy consumption in real-time, are excellent examples of how media can engage directly with ecological concerns. This project, run by the Technoculture, Art and Games (TAG) Minecraft Bloc research group at Concordia University, illustrates how media can provoke both ethical engagement and environmental responsibility.

This special issue encourages more such provocations, urging the continued interrogation of onto-epistemological postdualisms and experimental practice. Moreover, it compels us to reflect on the material reality of our media systems and their entanglement with the Anthropocene. By focusing on these complexities, we can not only understand our mediated world more deeply, but also push toward more responsible, equitable, affirmative, and joyful futures for humans and non-humans alike.

Addendum: A Farewell

By all accounts, this special issue will likely be the final be the final issue of the *Journal of Posthumanism*. The chair of the Editorial Advisory Board for Transnational Press London, Ibrahim Sirkeci, has notified the journal's editorial board that he plans to cease publication of the journal due to time constraints. Unfortunately, he has decided not to move forward with our request to transfer the journal to a new publisher.

On behalf of the larger editorial board of the journal, we would like to thank all those who have made the *Journal of Posthumanism* a welcoming home for open-access, free to publish, peer reviewed posthuman research over the last several years. We are proud of the work done by the authors, editors, and peer reviewers that helped create such a strong journal from the ground up. Although our work will no longer continue on this particular journal, we are all looking forward to collaborating on new projects in the future which will continue to highlight the strong posthuman work being done across disciplines. Thank you to all of those who have contributed to the journal.

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We Have Never Been Acafans: Notes Towards a Posthumanist Approach to Media Fandom

Mandy Elizabeth Moore[1]

Abstract

Media fandoms highlight the power nonhuman actors have to move, shape, and perhaps even possess us. In stating, "I am a fan of this thing," we have already signaled a new state of being for ourselves rooted in a deep investment with something nonhuman. However, despite the foundational nonhuman entanglements of fandom, fan studies as a field has yet to engage in a sustained, comprehensive dialogue with posthumanism. In this article, I propose a theoretical vision for posthumanist fan studies, outlining how this framework would both compliment and complicate existing fandom scholarship and explicating an emergent, intra-active view of fandom. I then offer two potential methodologies that would prove useful in posthumanist fan studies research.

Keywords: *Fan Studies; Media Fandoms; New Materialism; Autoethnography*

Introduction

On March 16, 2023, I crawled out of bed in the early hours of the morning, put on a pot of coffee, and settled onto my couch to wait for exactly 3:00 a.m. EDT, the moment when Netflix would release the highly anticipated second season of one of my favorite series, *Shadow and Bone*. I proceeded to watch all eight episodes in one sitting, pausing only to order delivery from Dunkin' Donuts when the sun began peeking through the blinds of my living room windows. My experience with this series encapsulates a key element of my own fan identity, one shared by fans of many different kinds of media: a willingness to rearrange our schedules and behaviors for the sake of that media.

While fan studies scholars have explored these behaviors using a wide range of disciplinary approaches, they have not yet examined the objects of fans' investment on their own terms as *more* than mere objects. The things fans love have not yet been given their due as powerful nonhuman agents that become deeply entangled with human discourse, activity, and identity, a phenomenon clearly at work in my *Shadow and Bone* viewing practices. Although the series is certainly the product of human creativity and labor, it was not some*one* who compelled me to sacrifice my sleep schedule during my all-too-short spring break, but rather some*thing*—a story, a television show, a fictional universe. Even in fandoms centered on people—including musicians, actors, influencers, politicians, and athletes—fans are invested not necessarily in the celebrity as a human but rather in more-than-human things, such as the celebrity's oeuvre and curated persona.

Media fandoms highlight the power nonhuman actors have to move, shape, and perhaps even possess us. The very act of calling oneself a fan represents the subtle but profound creation of an identity; in stating, "I *am* a fan of this thing," we have already signaled a new state of being for ourselves rooted in a deep investment with something nonhuman. However, despite how fandom relies foundationally on the involvement of nonhumans, fan studies as a field has yet to engage in a sustained, comprehensive dialogue with posthumanism (or its intellectual cousins) about the fundamental nonhuman entanglements of fandom. While some scholars have deployed posthumanist theories to discuss specific fan communities,[2] we have yet to imagine what a truly posthumanist approach to media fandom might look like.

In this article, I propose a theoretical vision for posthumanist fan studies, first explaining why I believe such an approach would be generative for the field. I then outline how this framework would both compliment and complicate existing approaches to fandom scholarship by explicating an emergent view of fan communities and identity. From this perspective, I argue that fandom is not a group of individuals with similar interests or even a set of fannish behaviors, but rather a phenomenon through which fan identity is intra-actively performed and produced. Finally, I provide a rough sketch of two potential posthumanist fan studies methodologies, showing how new materialist tracing methods and posthuman acafan autoethnography might illuminate creative and ethical ways of moving across the media landscape. Ultimately, my article provides a starting place and a call to action for further inquiry, offering a brief sample of how posthumanist frameworks might prove useful for research on media fandoms.

Why Posthumanist Fan Studies?

Before elaborating on a group of core premises that I envision for a posthumanist fan studies, I first want to address the usefulness of such an approach. On the most obvious level, as the nonhuman turn continues to reshape how we understand our material-discursive existence (including in and through the media landscape), of course scholars of media fandom should at least engage in conversation with posthumanisms and acknowledge wider theoretical shifts in the many fields that fan studies has emerged from. But my interest in this cross-pollination is not merely a desire to hop on a recent academic trend. Instead, I find foundational parallels between fandom and the discipline of fan studies, on the one hand, and posthumanist theories, on the other, leading me to see these two areas as especially suited to conversation with each other and even as already deeply entangled, even if those entanglements have not yet been articulated as such.

As I briefly describe above, there is something fundamentally nonhuman about the very phenomenon of fandom, given that fan identity results from a powerful encounter with some*thing* that reforms one's sense of self to include a relationship to that thing: *I'm a fan of that*. And, as I will continue to explore in the next section, there is also something about the porousness of fannish behaviors and experiences that mirrors posthumanist challenges to the traditional Western, humanist subject. The fan is a figure who allows and may even excitedly invite some kind of mediated Other—a story, a celebrity, a brand—further into their sense of self than Western rationality typically deems appropriate. Some fannish activities, like fanfiction and cosplay, move nomadically through media texts to borrow, combine, and reimagine existing pop culture materials, dislocating singular authorship and creating endless narrative multiverses. Henry Jenkins (1992) refers to these practices as "textual poaching;" more recently, Ebony Elizabeth Thomas and Amy

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[2] See, for instance, Charlie Gere (2022) on posthumanism and *kawaii* aesthetics among *otaku* fan communities, Jessica Ruth Austin (2021) on posthumanist approaches to furry fandom, or Callum T. F. McMillan (2021) on posthumanism in sci-fi film and video game fandoms.

Stornaiuolo (2016) have proposed a framework of "restorying" to describe how fans—especially young fans—engage in "reshaping narratives to better reflect a diversity of perspectives and experiences" (p. 314), thus creating "infinite storyworlds" (Thomas, 2019, p. 156). These practices of distributed composition resonate with a posthuman conception of distributed subjectivity that "emerg[es] from and [is] integrated into a chaotic world rather than occupying a position of mastery and control removed from it" (Hayles, 1999, 291).

Importantly, neither fandom nor posthumanism is inherently progressive. Refusing to fully interrogate the contradictions of liberal humanism when navigating the posthuman condition can leave us stuck in a dualistic, negative quagmire (Braidotti, 2013), and trying to "graft" posthuman impulses, such as blurred boundaries between humans and technology, onto humanistic desires for mastery and a stable sense of self can lead to regressive transhumanisms that imagine a scientific future rather than an ethical one (Hayles, 1999, 286-7). Within fan studies, early scholarship tended to respond to negative narratives about fandom in both academia and mainstream culture—that fans were perverted, immature, and unworthy of serious study—by highlighting the subversive potential of fannish behaviors and the positive experiences of women and queer fans. However, this initial "Fandom is Beautiful" approach to scholarship[3] has given way to more nuanced frameworks in which the radical potential of some fan activities are enmeshed with practices of maintaining systems of oppression. Fandom may hold the possibility of disrupting top-down models of cultural storytelling hegemony, but both fandom and fan studies also perpetuate structural hierarchies of power, especially along lines of racial, linguistic, and imperial violence (Pande, 2018; Thomas, 2019; Morimoto, 2020). Additionally, just as fan studies scholars have ignored entire genealogies of critical thought on the practices of, for instance, African American fans (Wanzo, 2015), posthumanists have routinely failed to acknowledge Indigenous theories of nonhuman agency and entanglement that long predate the "ontological turn" (Todd, 2016; Rosiek et al., 2020). My point is not so much that fans and posthumanists are always inherently engaged in the same radical projects, but rather that there is something in the kernel of radical potential offered by both fandom and posthumanism that *rhymes*.

Posthuman Fannish Entanglements: A Few Broad Principles

The potential points of conversation between posthumanism and fan studies are numerous, which will become apparent throughout this section as I gesture at just a few of the possible avenues for future research. Certainly, with so many existing theoretical genealogies, definitions, areas of focus, and methodologies all congregating under the posthumanism umbrella, a posthumanist approach to fan studies could take on a number of vastly different forms—and I would be excited to see such forms proliferate in fan studies scholarship. However, I here argue for a specific vision of posthumanist fan studies that builds on a set of key premises from critical posthumanisms and new materialisms. I do not propose this framework as the only or best way to do posthuman fan studies, but rather as an approach that has proved particularly useful in my own thinking and which I believe will prove useful to others. Further, I present the principles below as WIPs (works-in-progress), to borrow a fanfiction term. They are rough drafts that I am still working through myself, and I welcome additions, revisions, and challenges.

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[3] See Cornel Sandvoss et al. (2017) for a more extensive summary of the "Fandom is Beautiful" wave of scholarship and the transition to more complex frameworks.

Fandom as more-than-human

First and foremost, it seems crucial that a posthumanist fan studies acknowledges the more-than-human nature of fandom. While fandom is, of course, a phenomenon specific to human culture, it does not exclusively concern or involve human beings and in fact relies on the participation of nonhumans. This is not to say that fan studies up until now has ignored the nonhuman; on the contrary, there is a robust strain of materialist fan studies that attends to the nonhuman stuff of fandom. See, for instance, the special issue of *Transformative Works and Cultures* on "Materiality and object-oriented fandom" (Rehak, 2014), as well as scholarship on topics like toys and collectibles (Heljakka, 2017), physical locations of fan pilgrimage (Williams, 2020), fan bookbinding (Buchsbaum, 2022), and so on. Research on digital fan communities has also lent itself to examinations of both material technologies and digital/virtual nonhumans, including online fanfiction archives (De Kosnik, 2016) and cell phones (L. Bennett, 2017). Some of this previous literature already demonstrates posthumanist impulses by accounting for nonhumans as more than mere objects of human action, investment, and desire.

Moving to a more explicit, intentionally posthumanist approach involves adopting new materialist ways of thinking about fandom nonhumans, taking the stance that "materiality is always something more than 'mere' matter: an excess, force, vitality, relationality, or difference that renders matter active, self-creative, productive, unpredictable" (Coole and Frost, 2010, 9). Following Jane Bennett (2010), we might pay attention to how "thing-power" functions within fandom, understanding nonhumans as active fandom participants themselves with vibrant and consequential lives worth studying on their own terms. Although Bennett's discussion of thing-power involves mostly "ordinary, man-made items" (xvi) and their "curious ability… to animate, to act, to produce effects dramatic and subtle" (6), I here deploy *thing* as a much more capacious category, less materially bounded than *object* and flexible enough to account for nonhumans like systems, assemblages, narratives, and events. I draw on new materialist perspectives that do not make a fundamental distinction between the material and the immaterial, between the physical and the spiritual/virtual/conceptual stuff of the world (Coole and Frost, 2010, p. 10). In Karen Barad's (2007) terms, the material and the discursive are not discrete spheres of existence, and we must take care not to "write matter and meaning into separate categories" (25). Therefore, a posthumanist fan studies would take a broad view of nonhuman existence, considering not only action figures, signed photographs, computers, physical shrines, and DVDs, but also characters, intangible images, digital counterpublics, affective auras, and stories—as well as the ways in which *all* of those nonhumans operate in material-discursive ways.

Perhaps the most obvious example of thing-power in fandom is that exerted by various media on their fans. It's the pull of some*thing* that leads us to attend events, purchase merchandise, make art, get tattoos, post on social media, and—in my case—wake up before dawn for the singular purpose of consuming a story the moment it became available. But this is only the most obvious application; even just considering my experiences with *Shadow and Bone*, a plethora of other kinds of thing-power come to mind. For instance, watching the series on my phone materially changed the visuals I encountered (arguably for the worse, given the pixelation that occurs on such a small screen). I had financial, technological, and geographical access to food delivery that allowed me to watch without significant interruption for breakfast, but the embodied reality of living with a cat (and ADHD) also meant frequently going back to watch the same ten seconds over again to catch information I missed. In thinking outward to further places for inquiry into the vital role of nonhumans in fandom, I imagine examining, for instance, how the physical construction of a cosplayer's outfit might shape

their experience of a convention, how the tagging infrastructure of a fanfiction archive might perpetuate racism,[4] or how the absence of closed captions on a TV program might impact not only accessibility but also fans' interpretations of the story.

Fandom as emergent

Up until now, I have been speaking of fans and media, human and nonhumans, etc. as separate entities with the power to act upon or with each other—i.e., something nonhuman exerts thing-power on us, and we respond. But the reality, of course, is much more complex when thinking about fandom from a posthumanist perspective. A second broad principle for this approach, therefore, is to consider fandom as emergent, building on posthumanist theories of ontology, subjectivity, and agency. From this view, there are no discrete, preexisting fans, fan-beloved media, or fandoms. Instead, all of these emerge through intra-action (as opposed to *inter*action between established identities), a process through which "boundaries and properties of the components of phenomena become determinate and… particular concepts (that is, particular material articulations of the world) become meaningful" (Barad, 2007, 139). Intra-action is an ongoing phenomenon, a doing or performing that allows particular entities to become distinct even as they remain fundamentally ontologically entangled with one another.

As with the previous section, perhaps the most obvious application of this concept to fan studies is the relationship between fan and "fannish media"—a term I use here to specify those media nonhumans that have fans. Considering the fan/fannish media relationship as emergent and intra-active means acknowledging that neither fans nor the things they love are preexisting entities; rather, fans and fannish media are equally called into being through a process of intra-action. The fannish relationship emerges in a performance that simultaneously establishes the fan as a fan and the fannish media as fannish media. This is not an entirely novel idea within fan studies, and previous scholarship has explored the process of how individual and communal fan identities are constructed.[5] However, some of these existing accounts of fan identity explore how interacting with fannish media, communities, and behaviors *mediates* or *shapes* a fan's identity rather than *produces* it. Adopting a posthumanist framework of emergence allows us to consider how not only fan identity but also those fannish media, communities, and behaviors are all collectively produced through intra-active processes.

An emergent approach to fandom deserves a much more comprehensive theoretical figuration than I have space for here, but I will point towards some potential avenues for future scholarship. How might an emergent understanding of fannish subjectivity work to illuminate the intra-active, embodied experience of cosplaying a character, writing fanfiction, or attending a sporting event? If an emergent view of fandom means seeing agency not as the property of a specific person but rather as an active "doing" that arises within specific intra-active phenomena and allows for "changing possibilities of change" (Barad, 2007, 178), what does this mean for understanding fannish agency? How might this view of agency, for example, help restore collective responsibility for addressing the deeply racist structures of fan spaces rather than unfairly placing the agential burden of "curating your online experience" on fans of color?

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[4] See Alexis Lothian and Mel Stanfill (2021).

[5] For just a few of many, many examples, see Mark Duffett (2013), Libby Hemphill et al. (2020), Agata Ewa Wrochna (2023), André Calapez et al. (2024), and Kashfia Arif (2022).

Fandom as phenomenon

An easy definition of "fandom" might posit that the term refers to communities of fans, whether specific communities of interest around a specific media text or object (e.g., Trekkies, Swifties, Yankees fans) or a more general community of fans who share some common practices and beliefs across their diverging media interests. I am certainly not the first to challenge this definition of fandom as consisting of people or groups of people—Matt Hills (2002), Jen Gunnels and M. Flourish Klink (2010), and others have described fandom as a kind of *doing* that must be performed. Even in popular parlance, fandom can also refer more nebulously to a culture or subculture, a set of behaviors, a way of seeing the world, etc. A posthumanist approach, however, points towards seeing fandom as a *phenomenon* in the sense articulated by Barad (2003), where phenomena are "dynamic topological reconfigurings/entanglements/relationalities/(re)articulations" (818).

From this view, fandom is a particular kind of entanglement of people and media (but which also necessarily involves actors beyond people and media). Fandom-as-phenomenon names the intra-active process that differentially produces fans and fannish media, a phenomenon that emerges as it is performed. While the entanglement of fandom is not always intentional—itself a contested (im)possibility for posthumanists—or even positive—as recent scholarship on anti-fandom[6] demonstrates—it does involve a particular orientation towards media, a "turning towards"[7] media texts, brands, and personas as fans are constituted in relational ways through entanglement.

This perspective overlaps with a recurring theme in fan studies, which is how fandom can challenge the liberal humanist subject. Scholars such as Francesca Coppa (2006) and Kristina Busse (2013) have previously noted the ways that fandom gets aligned with an excess of the physical and emotional, with femininity, with perversion, with disability, etc. Importantly, however, fans are not themselves an oppressed group under the rubric of Western hegemony and often participate in perpetuating that hegemony in violent ways. When fans do experience interpersonal or institutional mistreatment, however, it tends to occur as an extension of the same binary logics of traditional humanism that structure Western hegemony, a response to the ways that fans sometimes fail to adhere to a humanist ideal of white, masculine, abled rationality. Although the normalization of fandom in mainstream culture in recent years has meant less antagonism towards fans,[8] some of the negative stereotypes persist. The figure of the squeeing fangirl at a concert can still activate discomfort in part because she represents our own porousness, demonstrating how easy it can be for some*thing* outside of us to worm its way in and provoke a primal, affective response—the squee. Furthermore, she seems to *welcome* the entanglement with her fan object, excitedly participating in the phenomenon of fandom that not only prompts affective responses but (re)produces her identity as fan, challenging humanist values of the bounded, stable self who is—and should want to remain—master of his own existence.

This stereotypical fangirl is also almost always imagined as white, anglophone, and living in the Global North. Although she troubles a humanist concept of subjectivity, she is only visible because she is already figured as a subject in a racist, colonial humanist framework. Mainstream, academic, and fannish conceptions of fandom-as-phenomenon all hinge on who can be imagined as participating in—and thus produced as fans by—fannish entanglement. For instance, Olivier J. Tchouaffe (2010) notes that inaccurate portrayals of Africa as outside the realm of modern media

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[6] For instance, Dayna Chatman (2017), Jonathan Gray (2005), and Yessica Garcia-Hernandez (2019).

[7] My thinking on orientations is deeply influenced by Sara Ahmed's (2006) work in phenomenology, although a fuller exploration of the correspondences and tensions of Ahmed's work with this strand of posthumanism would take more space than I have here.

[8] See Sandvoss et al. (2017) for a brief overview of this change.

and technology contribute to the tendency of Western academics to erase and ignore African fandoms. In failing to imagine African societies that include media, Western fan scholars cut African fans out of their figurations of who has the potential to entangle with media and therefore become a fan.

Additionally, despite recent work on anti-fandom and the move to acknowledge more nuanced fan relationships with media, scholars still often assume that the default mode of fannish entanglement is positive and all-consuming. But as Rebecca Wanzo (2015) and Jillian M. Báez (2020) have noted, fans of color may experience more ambivalent, complex relationships with dominant media texts that misrepresent and marginalize them; such fans might participate in and emerge from a different kind of media entanglement. Understanding fandom as a phenomenon allows us to examine how both fans and scholars from dominant communities have imagined that phenomenon in particular, exclusionary ways. Future research might utilize a posthumanist lens to address how the overwhelmingly white, Western field of fan studies has assumed normative modes of fannish intra-action which produce only certain kinds of fan identities, objects, and communities, as well as how scholars might rethink the entanglement of fandom in more expansive ways.

Looking for Leia: New Materialist Tracing

In addition to sketching broad premises for a posthumanist fan studies, I would like to propose two potential methodologies that could prove useful to fan scholars working from a posthumanist perspective. These methodologies are not new; in fact, there are already fan studies scholars (and fans) who have employed variations or parts of these methods, even if they have not labeled them using posthumanist terminology. As with my premises above, I offer these methods as WIPs, inviting revision, expansion, and transformation.

The first of these methods draws from new materialist rhetorics, a field that sees nonhumans as rhetorical actors with the agency to affect the material-discursive processes of making meaning. In particular, I pull from the work of rhetoric scholars like Laurie E. Gries, who see the nonhuman *stuff* of the world—including images, technologies, texts, environments, and so on—as intra-acting with people and other nonhumans in consequential ways, variously producing (or inhibiting) communication, prompting emotional and behavioral responses, and rearranging us into new community formations. Working within the area of visual rhetoric, Gries (2015) developed a methodology called "iconographic tracking" for applying this new materialist perspective to the rhetorical power of images, a method that involves following a particular image as it moves through both digital and physical space and recording its complex impacts through thick descriptions. This method aims to be capacious and flexible, accounting for the "life" of an image as it transforms and circulates into an infinitely unfolding future.[9]

My own current research explores how new materialist rhetorical tracing methods might work in a fandom context, experimenting with tracking the lives of several different kinds of fandom nonhumans, including images, hashtags, and things more specific to fan communities, like ships.[10] In one of these case studies, I follow the movement of an iconic image of Princess Leia through fanzines[11] during the earliest years of *Star Wars* fandom (1977-1985). This image of Leia as she

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[9] Other researchers have already taken up Gries's invitation to apply this method to other kinds of nonhumans beyond images; see, for instance, work by Dustin Edwards and Heather Lang (2018) that traces the life of the viral hashtag #YesAllWomen in a similar manner.
[10] Ship, short for relationship, refers to the imagined romantic and/or sexual relationship between two (or more) fictional characters or celebrities; it can also operate as a verb, meaning the act of demonstrating investment in that relationship: "I ship it."
[11] A zine, short for magazine, is a small-batch, amateur genre of publication that can range in content from informational to persuasive to creative. In fandom contexts, fanzines historically included letters of comment, analyses and reviews, fanfiction, fanart, and news; they

appears in *A New Hope*—in a white dress with her signature "space buns" hairstyle, wielding a blaster—continues to circulate in our contemporary visual discourse, often with political and feminist meanings attached. But Leia was not immediately and universally heralded as a feminist heroine upon her 1977 introduction to pop culture, and she was not necessarily overwhelmingly popular among fans, even in the female-dominated fan communities that tended to produce fanfiction- and fanart-heavy zines. Instead, Leia's character was the subject of intense negotiations that took place not only in letter columns and fanfiction but also through visual iconography.

To study these negotiations, I adapted the recursive steps of Gries's iconographic tracking process: collecting a large dataset of Leia fanart through archival research in the University of Iowa Special Collections and the fandom wiki *Fanlore*, identifying themes and connections within the dataset to show how Leia imagery circulated in consequential ways, and composing thick descriptions of the life of my target image (Leia's iconic white dress/space buns/blaster combo). In addition to adjusting Gries's digital methods to fit physical archival research, I also included another recursive step of self-reflexivity to account for how my positionality, embodied experiences, and investments as a *Star Wars* fan influenced the shape of my research. Building on the work of Indigenous scholars like Malea Powell (2008) on researchers' relationships to archives and Vine Deloria (1999) on recognizing our own relational embeddedness in the communities we study, I considered the life of this Leia image not as a preexisting path of data to follow, but rather a path intra-actively produced through my process of searching for it.

I have found that images of Leia in early *Star Wars* zines both catalogued and influenced the ongoing negotiations of how to interpret her character. Fan artists' depictions of Leia reflected some of the debates that were simultaneously taking place in fanzine letter columns, such as whether or not she was a spoiled brat or a courageous leader, whether she was a better romantic match for Han or Luke,[12] what her duties as a princess might have entailed, and if she could possibly be the "other" Yoda mentions at the end of *The Empire Strikes Back*—someone aside from Luke with the potential to save the galaxy (Nowakowska, 2001). Variations in Leia fanart mirrored those conversations through changes in her costume and hairstyles, placement alongside other characters, and so on, especially as that fanart was often juxtaposed with fanfiction, poetry, and analysis. But these works of fanart not only illustrated the ongoing negotiations of Leia's character; they also *participated* in the negotiations as rhetorical actors, contributing to the emergence of a complex, heterogenous Leia.

For example, even though many early images of Leia from Lucasfilm's marketing materials included a blaster and even though she wields two separate guns in *A New Hope*, weaponry did not become central to fannish Leia iconography[13] in the way that it did for other characters, like Han (blaster) and Luke (lightsaber). Her white dress and space buns became key elements of making Leia fanart legible to viewers, while the blaster remained secondary, thus reinscribing a less combative version of Leia for fanzine readership. Another recurring practice in fanart involved depicting Leia as sad, particularly in conjunction with fanfiction or poetry exploring her grief after the destruction of her planet, her loneliness in her multiple leadership roles, or her distress after Han is frozen in carbonite.

were usually distributed via snail mail or at fan conventions for a small fee to cover printing and mailing costs. For large fandoms like *Star Wars* and *Star Trek*, there were frequently hundreds of zines in circulation at any given moment, allowing fans to build a sense of community across geographical distance in a pre-internet era. Fans still create zines today, although they tend to do so now in digital formats. Those who do publish print zines are more likely to make small, easily reproducible zines that require only a few sheets of paper, unlike the fanzines that circulated before online archives became a possibility for sharing long-form fanfiction, which sometimes ran upwards of 100 pages.

[12] Prior to the reveal that Luke and Leia are twins in *Return of the Jedi*, she and Luke were a popular couple among fans, especially those who felt that Han and Leia's bickering was too antagonistic to ever become romantic.

[13] See E. J. Nielsen (2021) for a discussion of how fannish iconography operates and is developed in fanart and cosplay.

While Leia is only given a few moments to express sadness on-screen, the repeated visuals of mourning and solitude across fanzines helped to cement those as key elements of her character. Occasionally, letters of comment and zine reviews reveal moments when fans explicitly mention how Leia iconography impacted their understanding of her character or inspired them to imagine their own versions of her story. Fanart thus contributed to rhetorically *producing* Leia for those fan communities.

Other fan studies scholars can similarly adapt new materialist tracing methods, including Gries's iconographic tracking, to apply to other kinds of nonhumans in fandom. Furthermore, following a nonhuman through fandom spaces in order to imagine a new path through fan histories is not limited to academia. Annalise Ophelian's 2019 docuseries *Looking for Leia* performs a similar trace by seeking out stories about the deep affective connections female and non-binary *Star Wars* fans have with Leia. Although Ophelian may not use the language of new materialism, they are effectively tracking the circulation and transformation of a nonhuman entity—the character of Leia—as she intra-acts with fans across the globe in consequential ways. Their docuseries operates as both an act of fandom in and of itself *and* a kind of affirmative posthumanist theorizing that serves as an "exercise in shifting the traditionally cis male narrative of geekdom to tell the story from another set of perspectives" (Ophelian, 2023). Whether in traditional scholarship or beyond, new materialist tracing methods thus offer the potential for revising narratives of fandom to include the intra-active role of nonhumans.

We Have Never Been Acafans: Posthuman Autoethnography

Since the emergence of fan studies as its own academic discipline, the field has been haunted by questions about the role of the scholar in relation to the fans they study. When the scholar is an outsider to fandom, they might be met with mistrust and suspicion;[14] when the scholar is embedded in fandom, they run the risk of losing the critical distance that is—presumably—necessary for producing analysis. Often attributed to Jenkins, the term "acafan" (a mashup of academic and fan, sometimes written as "aca-fan") refers to the thorny hybrid identity of simultaneously being a fan and a scholar who studies fans (Jenkins et al., 2011). The sometimes contentious debates in fan studies history around the definition, utility, and proper deployment of acafandom have included discussions of the need for both academic and fannish expertise (Popova, 2020), the (in)ability of acafans to be critical of the media they love (Bogost, 2010), the tendency for acafans to create a canon of fandom scholarship based on their own tastes (Ng, 2010), and the questions of whether or not academia is fundamentally different from fandom in the first place (Coker and Benefiel, 2010). However, what most of these approaches have in common is an understanding of acafandom as a preexisting role—or the hybrid of two preexisting roles—that we as researchers can inhabit, reject, try to balance, or adjust as needed. The posthumanist position, however, sees acafandom as emergent in the same way that fandom—and academia—is emergent, called into being through intra-active processes.

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[14] This was especially true in the pre-internet and early internet fandom eras, when fannish practices had a higher barrier of entry due to both technological and social factors and when pathologizing narratives of fandom in both mainstream culture and academia—as well as some particularly poorly-conducted studies—led some fan communities to distrust scholars who wanted to study their behavior (Larsen, 2021). However, even in a moment where technological access and cultural normalization have lessened some of that suspicion, a divide between fans and academics persists when, for example, non-fan scholars (or those perceived not to be "real" fans) attempt to conduct fan studies research and receive pushback. See, for instance, the controversy over a 2019 digital humanities fanfiction project as explored by Katherine Larsen (2021) or the experiences recounted by Daisy Pignetti (2020) studying online "Hiddleswift" fandom.

Some work on acafan autoethnography already points towards this perspective. Busse and Hellekson (2006) aim to shift away "from a dichotomy of academic and fannish identity to subject positions that are multiple… Our identities are neither separate nor separable" (24). Hills (2002) considers autoethnography as a method for negotiating the idealized imagined subjectivities of the rational academic and the passionate fan, which are frequently and problematically juxtaposed in a binary moral dualism. More recently, he notes that the process of self-learning through acafannish autoethnography is generative even though it may not—or cannot—result in a "singular and unified" understanding of the self (Hills, 2021, 151).

A posthumanist perspective pushes these ideas a step further: acafandom does not entail simply *occupying* inseparable identity positions or *uncovering* their contours through self-reflection, but rather constitutes a boundary-making practice, a performance that enacts and produces the division between fan and academic, thus allowing those identities to emerge. The negotiation of various roles—fan, academic, acafan—is the same intra-active process which creates and differentiates those roles. In this framework, acafandom is not something we *are* or even a predetermined function that we *do*; instead, acafandom is a fragmented and fluid phenomenon produced through the very act of trying to conduct acafannish research.

As Cécile Cristofari and Matthieu J. Guitton (2017) have noted, it is critical that we delineate acafandom not only in theory but also in practice, exploring specific research methods for deploying acafandom in ethical ways. While most acafannish praxis understandably concerns the logistics of ethnographic research, I propose posthuman autoethnography as a generative method for studying how acafandom emerges. This method would build on explorations of posthuman autoethnography from scholars like Poppy Wilde. Although autoethnography might seem like a strange choice for exploring a posthuman conception of subjectivity—in which the self is an emergent fiction deeply entangled with other humans and the nonhuman world—Wilde (2020) explains that this method proves useful in accounting for the intra-active formation of entangled subjectivity. Reflecting on, in Wilde's case, the intra-action between player and avatar in *World of Warcraft* allows Wilde to both study and perform a fluid, multiple "I."

Similarly, posthuman acafan autoethnography would provide space to examine how one's own acafannish subjectivity and behavior come to exist, without assuming either the fannish self or the academic self—or any self, for that matter—as a preexisting entity. Instead, such autoethnography would both describe and perform the emergence of the researcher's acafandom, producing differentiated fannish, academic, and acafannish roles in an ontologically entangled manner. This method would build on the way that fan studies scholars have already narrated their experiences of acafandom—negotiating issues like participation in fan spaces, transparency, confessional modes, interaction with survey participants, etc.—by explicitly reflecting on how acafandom emerges through those moments of negotiation as a particular way of being in the world.

I might, for example, perform an autoethnography reflecting on writing this article, thinking through how I navigated what to "confess" about my *Shadow and Bone* fandom and when to deploy more a fannish (rather than strictly academic) authorial voice, *producing* acafandom through those navigational choices that tried to distinguish my ontologically entangled fannish and academic identities. I could discuss the version of "me" that came into being through the intra-active process of composing this article, which involved me simultaneously being *composed by* the article, as well as by the sources I consulted, by the embodied experience of writing in a Panera, by the TV shows I watched to take a break from writing, by the helpful comments my acafan friends made on my draft,

and by my cat once again interrupting to demand attention. In writing this article, a new posthuman authorial voice—a new "I"—emerged, and with it, another iteration of acafandom was produced.

Posthuman acafannish autoethnography might also provide a space for fan studies scholars to reflect on how to engage in scholarly reciprocity not only with the human fans involved in their research (see, for example, Lee, 2021) but also with the nonhumans that are necessarily entangled in the process of producing acafandom. Jerry Lee Rosiek et al. (2020) note that Western new materialists lag behind Indigenous scholars in thinking about how to build ethical relations with both humans and nonhumans when conducting research, where nonhuman entities like the land and even stories themselves are active participants deserving of respect rather than mere resources to be exploited for knowledge. The work of scholars like Powell (2008) and Eva Marie Garroutte and Kathleen Delores Westcott (2013) might serve as examples for how researchers can reflect on—and ethically contribute to—their relationships with the nonhumans they study. Using posthuman autoethnography to explore what nonhuman entities are involved in the production of their acafannish subjectivity and research in the first place, acafans could take this opportunity to critically engage with Indigenous scholarship on ethical coexistence with nonhumans—not through appropriation of Indigenous practices but through consideration of what it means to intra-actively perform acafandom alongside nonhuman actors.

Despite the repeated suggestion that we jettison the concept of acafandom altogether, the continued conversations on the topic—and the way that the concept has already shaped many fan studies scholars' understanding of their own lived experiences—seem to suggest that acafandom remains a crucial component of our field. And if that crucial component is not merely something we are, a set of predetermined behaviors we do, or a dual allegiance we must balance, but is instead a phenomenon that emerges through the performance of anafannish research, posthuman autoethnography provides a useful methodology for understanding that phenomenon. Reflecting on the intra-active processes that produce acafandom will hopefully grant us a better sense of what acafandom, exactly, we are producing, and how we might go about producing it more ethically in the future.

A Prompt in your Ask Box

Given the nature of this article as a broad, initial sketch of what posthumanist fan studies might be, in lieu of a traditional conclusion, I will end by reframing my proposed approach in terms of a fannish practice that has been crucial in developing my own posthuman subjectivity: fanfiction. In a way, this piece is a work of academic fanfiction, exploring an alternate universe (AU) version of what the field of fan studies could look like: *what if we did a crossover with posthumanism?* I do not claim posthumanism as the only way forward for fan studies or even the singularly best approach, seeing it instead as one story among many possibilities. That story is also a work in progress, or perhaps merely an idea in progress, the skeletal outline of an endless AU that has already generated too many "plot bunnies"[15] for me to ever write myself. Therefore, I will deploy the time-honored fan practices of adopting out my plot bunnies—rather than allowing them to languish in my notes forever—and creating prompts to spark the imaginations of my fellow writers.

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[15] Plot ideas that seem to reproduce like rabbits, generating more potential story ideas than the author has time to write.

I leave you with a prompt in your metaphorical ask box,[16] to do with as you please. I've specified the pairing I'd like to see depicted: posthumanism/fan studies. (It's a "scholar-ship," if you will.) I've described the canon divergence I'm interested in exploring, one in which fan studies doesn't rely on liberal humanist conceptions of subjectivity, agency, and binary logic. I've also suggested a few potential genres—new materialist traces, posthuman acafan autoethnography—but I'm open to other ideas. Otherwise, I don't have a lot of specifics in mind for what this kind of academic fanfiction could look like, so I leave it to the capacious posthuman imaginations of others: *What happens next?*

Acknowledgements

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[16] "Ask box" refers to a function on Tumblr for sending someone an "ask," which functions differently than a direct message in that the receiver of an ask responds publicly by publishing their answer as a new Tumblr post. In fanfiction circles, people will often send prompts as asks, requesting that the writer create a (usually short) work of fanfiction about a particular pairing or premise.

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There is No Videogame: Nishida, Posthumanism, and the Basho of Gameplay

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Abstract

This article traverses from humanist to posthumanist philosophies to analyse videogame ontology. It challenges Cartesian dualism, understood as emblematic of humanist thinking, by bringing the philosophy of Nishida Kitarō in conversation with posthumanist thought. Nishida's rejection of the subject-object split and his concepts of 'pure experience', 'basho' and 'action-intuition' provide a framework for understanding games as dynamic events in a relational matrix of nothingness rather than as discrete entities. The game Jetpack Joyride is analyzed through this lens, illustrating how gameplay is a co-creative experience within a complex interplay of technology and human agency. This approach promotes an inclusive and global understanding of the interconnected nature of videogames and player identities, challenging entrenched Western paradigms in game studies and posthumanist thought.

Keywords: *Ontology; Meontology; Games; Nothingness; Flow*

Introduction - From Humanism to Posthumanism

What happens when playing a videogame? What establishes its boundaries? How do rules appear, and why must we follow them, or feel compelled to? What is a player? Are they different from a non-player? If I am a non-player at work, do I stop being a non-player when experiencing a videogame? What even is a videogame?

The answers to these questions may seem common-sense. Yet, it is precisely the common-sensical that most deserves scrutiny. One of the most common-sense set of ideas adopted by Western cultures are those associated with the philosophy of René Descartes (1641/2008), who introduced the split of subject and object, that of mind and body, and the idea of a rational self. These ideas define humanism, which typically also involves seeing knowledge as a product of rational subjects observing objects, distinguishing between mental and physical realms, denying the supernatural, and viewing the self as an independent agent. This perspective also typically includes a belief in progress and anthropocentrism (Gumbrecht, 2020; Law, 2011).

Posthumanism addresses the shortcomings of this *ethos*. Posthuman approaches, include different frameworks such as new materialism, actor-network theory (ANT), object-oriented ontology (OOO), assemblage theory, speculative realism, and more, reject subject-object dualism and the belief in a stable, autonomous self, instead acknowledging the entanglement of reality and the embodied, local, historical, cultural and, importantly, the technological (Braidotti, 2013; Hayles,

1999; Nayar, 2014; Wolfe, 2011). Such approaches are well-suited for analysing videogames and their players, and to answer the questions posed at the beginning of this article. It is unsurprising, then, that posthumanism has been frequently deployed within game studies, with scholars exploring what happens when players enter into a relation with the machine (Keogh, 2018), extending their bodies into gameworlds (Conway & Trevillian, 2015), assembling with avatars and digital objects (Cremin, 2016), and the consequences this has for matters of identity, affect, embodiment, aesthetics and ethics (Wilde, 2023).

Additionally, posthumanism critiques humanism for its lack of attention to race and gender, often defaulting to white, male perspectives. This critique extends to the Western-centric nature of canonical humanist thinkers. Posthumanist scholars, recognizing this issue, advocate for a broader intellectual dialogue that includes non-Western contributions to challenge this dominance (Heise, 2020; Hinton et al., 2015; Jackson, 2018; Sundberg, 2014; Wilde, 2023; Winnubst, 2018). Yet, Western authors still prominently feature in posthumanist discourse. For this reason, I propose a posthuman framework for understanding videogames inspired by the philosophy of Kyoto School thinker Nishida Kitarō.[2] Nishida's philosophy, echoing posthumanist goals, rejects subject-object dualism, the fixed nature of entities, including the self, and highlights the interwoven fabric of existence. According to Shizuteru Ueda (1995) Nishida puts into question "the background of European thought structure" (34), centred around notions of substances, essences and transcendental subjects. Utilizing Nishidian concepts of *junsui keiken* (pure experience), *basho* (place), and *koiteki chokkan* (action-intuition), I argue against the essentialist view of videogames as isolated, definable objects. Nishida's perspective enriches posthumanist game studies investigating the dynamic between human and machine, by revealing the foundational level where these elements intersect and become distinct.

This article contributes to the posthumanist game studies discourse while also responding to calls to look beyond Western ontologies. My approach includes a review of significant posthumanist game studies scholarship, pinpointing how Nishida's philosophies contributes to this scholarship. I will present the *basho* as the foundational ground for the emergence of the videogame. Lastly, I will employ *basho* in a concrete analysis, drawing on Nishida's later work, to examine *Jetpack Joyride* (Halfbrick, 2011), explaining how we may understand a videogame event prior to the subject-object split.

Posthuman Game Studies

Posthumanism has significantly influenced game studies. Scholars have focused on representations of cyborgism and post-apocalyptic narratives in games (Boulter, 2015) and films (Krzywinska & Brown, 2015). Others explore the idea of a posthuman, post-anthropocene condition (Ruffino, 2020), and the evolving player-avatar relationship that fosters posthuman identities (Wilde, 2023). This relationship is examined through concepts like cyborgism (Keogh, 2018), collective identity (Cremin, 2016), and the avatar as a prosthetic extension of the player (Aliano, 2020; Boulter, 2015). Research has also reconceptualized the gaming experience from a posthuman perspective, recognizing the influence of non-human factors in gameworlds (Conway & Trevillian, 2015; Taylor, 2009), and the phenomenon of human-less gameplay (Fizek, 2022).

Posthumanist game studies aim to move beyond human-centred perspectives, but often, these very humanist elements reappear. Boulter (2015) and Aliano (2020) discuss games as practical

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[2] I follow Japanese naming conventions when referring to Japanese scholars, indicating surname first and first name second.

prosthetics, echoing Marshall McLuhan's idea of technology as extensions of the body ([1964]1994). As Poppy Wilde (2023) argues, such a viewpoint is essentially humanist, or at most transhumanist, emphasizing the enhancement of human capabilities rather than the fusion of human and technology.[3] Moreover, Boulter (2015) depicts gaming as a u-topian act, suggesting that physical location and identity become irrelevant in play, thus neglecting the material factors—like poor internet or faulty hardware—that shape gaming experiences (Conway & Trevillian, 2015). This notion aligns with immersion theories suggesting players can escape physical reality, overlooking how players' bodies and social contexts are integral to immersion. Contrary to this view, Brendan Keogh (2018) stresses that "the videogame is touched, seen, heard, and ultimately understood through a perceiving, located, and augmented body – a body the player often works hard to forget in order to feel that sense of 'immersion' within the virtual" (15).

Ian Bogost's *alien phenomenology* (2008, 2012) aims explicitly to move beyond human-centric perspectives, drawing from OOO (Harman, 2005) and speculative realism (Meillassoux, 2008), but ends up adopting a decidedly Cartesian perspective (as will become clear later in the article). Bogost (2012) critiques the Kantian idea of correlationism, which posits we can only understand reality through human cognition, leaving the true thing-in-itself unknowable. Bogost (2012) argues that posthumanism remains too tied to this concept and advocates for an 'alien phenomenology' that appreciates the perspectives and experiences of non-human entities. Bogost proposes three methods through which one may perform an alien phenomenology: *ontography*, *carpentry* and *metaphorism*. Ontography consists in the meticulous cataloguing of the material components in videogame creation and interaction (Bogost, 2012). Carpentry is a practical method for hands-on game analysis, such as using emulators to deconstruct game mechanics and other methods of tinkering with the machine (Bogost, 2008). Metaphorism is "a way to grasp alien objects' perceptions of one another" (Bogost, 2012, 67) through the use of metaphor. Metaphorism in particular seems to contradict Bogost's goal of surpassing correlationism and anthropocentrism. More crucially, despite its intent, Bogost's methodology still reflects humanism by viewing objects as separate entities for human analysis, a notion reminiscent of the 'agential Cartesianism' implied by Boulter (2015).

Other scholars, such as Wilde (2023), Justyna Janik (2021), Conor McKeown (2021) and Sonia Fizek (2022), try to avoid the anthropocentric pitfalls by drawing from Karen Barad's (2007) *agential realism*. Barad, inspired by quantum physics, blurs the line between subject and object, suggesting reality is crafted through *intra-actions*, where entities come into existence and acquire properties within relationships rather than interacting as separate pre-existing units. Phenomena, as a result, become the primary ontological unit (Barad, 2007, 33), highlighting the merged nature of observer and observed, and the entanglement of all agentic components. Wilde (2023) discusses the intertwined relationship between a player and their avatar, highlighting the symbiotic creation of human and digital realities. Janik (2021) combines Barad's theories with Tadeusz Kantor's avant-garde theatre, rethinking how meaning emerges through the intra-action between player and game, viewing them not as separate entities but as a single, intradependent bio-object. Fizek (2022) challenges the separation of material computational elements and immaterial aesthetic elements in gaming, arguing

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[3] When this perspective is presented as one of 'masterful extension' and traced back to McLuhan, we are in the presence of a misreading. McLuhan never claimed humans have mastery over technology. In fact, by highlighting that "the medium is the message", he was insisting that technologies *do things to us*, shaping how we perceive the world and our possibilities. This is as far as it gets from an argument of mastery over technologies.

that all aspects intra-act in the gameplay experience. McKeown (2021) asks us to focus not only on the emerging intra-active identities, but also those that do not originate due to choices not made. Together, these scholars posit that games are dynamic spaces of shared agency, where human and non-human elements intra-act, co-creating their reality and challenging the view of games as systems with passive environments.

These approaches, while innovative, are not immune to critique. Justin Keever (2022) points out that despite efforts to decentralize the human subject through Baradian concepts like entanglement and intra-action, these works may still position the human as central in interpreting reality. Additionally, Keever (2022) challenges Barad's notion of "agential-separability" (Barad, 2007, 140), which posits objectivity as stemming from the resolution of ontological uncertainty but still acknowledges a human-influenced dichotomy between subject and object. Keever (2022) argues that this does not completely move beyond human-centric thought, as it does not fully articulate how subjectivity contributes to shaping material conditions. Ultimately, Keever (2022) suggests that agential realism doesn't completely break with anthropocentric tradition, as it continues to revolve around human engagement with reality.

It is here I propose an intervention to address the lingering elements of anthropocentrism and dualistic thought within game studies and posthumanist theory at large. By integrating Karen Barad's concepts of agential realism, entanglement, and intra-activity with Nishida's notion of pure experience (1911/1992), his metaphysics of *basho* (1926/2012a), and his concept of action-intuition (Nishida, 1933/1970), we deepen the challenge to anthropocentrism. This synthesis promises a more philosophically robust framework to examine agency, materiality, and reality, particularly within digital spaces.

From Pure Experience to Nothing

Nishida's work is rarely discussed within posthumanism, and yet his whole *oeuvre* is concerned with the overcoming of the subject-object split through a highly syncretic approach drawing in equal parts from Zen Buddhism and Western philosophy (Krummel, 2012). As explained by Shizuteru (1995) Nishida's ultimate concern was to understand "reality 'before the opposition of subject and object' as the point of departure, while sticking to the most immediate and concrete facts and further maintaining that they become the original self-awareness of the subject that is 'without I' in its adaptation to these facts" (34).

In his foundational work, *An Inquiry Into The Good* (1911/1992), Nishida introduces the concept of 'pure experience', drawing on the American pragmatic philosopher and psychologist William James and the intuitionism of French thinker Henri Bergson to describe the undifferentiated reality preceding the distinction between subject and object. From this fundamental reality, conceptual thought, reflection and judgment arise, allowing the subject to emerge. Nishida asserts that subjectivity develops within the realm of experience, stating, "it is not that there experience exists because there is an individuals, but that an individual exists because there is experience" (Nishida, 1911/1992, xxx). Nishida (1917/1987a) successively developed the concept of self-consciousness (*jikaku*), trying to reconcile the subjective nature of pure experience, which exists before self-awareness, with objective knowledge. Self-consciousness, for Nishida, is an introspective state that unifies the act of reflection with the subject reflecting. It fuses "thought and experience, object and act" (Nishida, 1917/1987a, xxv), laying the groundwork for all knowledge.

While self-reflective awareness challenges the conventional separation between the knower and the known, Nishida (1917/1987a) acknowledged that it also risked an endless regress of self-reflection. To surmount the limitations of both transcendental subjectivism in *jikaku* and the psychological subjectivism in pure experience, he introduced the concept of 'place', or *basho* (Nishida, 1926/2012a). John Krummel (2012) explains that *basho* is a foundational unity encapsulating dualities such as subject-object and observer-observed. Nishida was influenced by phenomenology in his development of *basho*, particularly by Edmund Husserl, though he also critiqued Husserl for objectifying consciousness as a transcendental ego, while Nishida (1926/2012c, 56) sought instead to describe the pre-reflective consciousness conscious of itself. To escape dualism and objectification, *basho* is understood as a primary 'place' of experience. One cannot grasp this conceptually without falling into what Nishida called 'object logic'. The *basho* is ultimately something that must be experienced bodily through action-intuition prior to the subject-object split. *Basho* is the pre-differentiated unity of "reality-cum-experience" (Krummel, 2012, 13), existing before any split whatever, the foundational 'place' allowing self-consciousness and all knowledge to emerge. *Basho* signifies an indivisible link between experience and reality, a dynamic place that underpins and contains cognition as well as emergent subjects and objects. I argue *basho* could further inform Barad's framework already popular within posthumanist game studies by identifying the ground where intra-action unfolds.

Nishida posits *basho* as a logical necessity to overcome the subjectivism of his early theories. He is inspired by Plato's (c. 360 BC/1888) idea of *khôra*, which in the *Timaeus* is described as a *triton genos*, a platial third kind, neither the eternal realm of eidetic forms, nor the impermanent material world, but the receptacle where the former are received and embodied within the latter (Nishida, 1926/2012a). Nishida's *basho*, while reminiscent of the *khôra*, reflects different philosophical and religious perspectives. Plato's *khôra* mediates between ideal truth and material illusion, suggesting a transcendent ontology where true Being is eternal. In contrast, Nishida's *basho*, inspired by Zen Buddhism, suggests an immanent meontology, the ontology of non-Being. Additionally, and differently from Plato, who dealt with the interaction of eternal forms with the impermanent world, Nishida's goal was to transcend dualism, creating a unified field incorporating both the subjective and objective.

Nishida (1926/2012a) conceptualizes *basho* as the coexistence and mutual reflection of universals and particulars within entities. Moving away from Neo-Kantian logic and Aristotelian substantialism, he argued that predicates, rather than subjects, mirror universals. For instance, in the statement "red is a colour," 'red' exists within the broader universal or *basho* of 'colour', which encompasses both 'red' and 'non-red' hues yet does not contain the concept of 'colour' itself. Meanwhile, the universal 'colour' is also reflected within each individual instance of 'red'. In other words, the *basho* of colour is the necessary ground for any colour to exist at all. 'Colour', meanwhile, will be a part of a different, 'more universal' *basho*. Robert Wargo (2005) offers the metaphor of the force field to describe the *basho* in less logical terms. According to field theory, objects are not simply 'in' space, rather the relations between objects and space are the determinations of the place within which they exist. Simply put, objects lose their substantiality and are seen as accumulation of energy "related not in space, but in the energy field of which they are part" (Wargo, 2005, 102). Objects are then nothing more than determinations of the field as a whole, which is not just the sum of the relationships of the energetic accumulations, but instead is what establishes the ground for the various relations. "As a result", Wargo (2005, 102) explains, "if one were restricted to the field, one would encounter only particular concentrations and there would be no particular concentration that one could call the field".

Nishida constructs a hierarchy of *basho*, culminating in the fundamental universal, the *zettai mu no basho*, or place of "true nothing" (Nishida, 1926/2012a, 68). This concept represents a realm beyond objectification and is the ultimate context for all determination. Following this hierarchy, one progresses from existence as Being, i.e. as substance and presence, to a domain contained within 'nothingness'. Nishida, influenced by Buddhism, understands 'true nothing' as *Śūnyatā*—not a void, but the foundation of all existence and the intrinsic nature of Being (Yusa, 2002). Masao Abe (1992, xxiii) describes this culmination as the field of consciousness, where the hierarchy of universals ends in 'place' or nothingness. The *zettai mu no basho* is "a self-differentiating undifferentiatedness, a unity of transcendent contradictories" (Krummel, 2012, 18), a place containing all universals and particulars. In this field, each universal is a locus for its particulars—such as the place of 'colour' being the field for 'red', 'green', 'blue', and so on. The *basho* is Nishida's philosophical resolution to dualistic distinctions, uniting matter and meaning, Being and nothingness, subject and object, in an attempt to provide "an adequate account of the whole of experience" (Wargo, 2005, 4).

Nishida's *basho* holds significant value for posthumanist thought, potentially addressing criticisms like Keever's (2022) regarding agential separability and lingering anthropocentrism within Barad. While there are several points of contact between Barad and Nishida, a key difference lies in their ontological grounding. Barad's (2007) framework operates within a materialist ontology, rooted in quantum physics, where relationality unfolds through specific material-discursive practices, i.e. reality emerges through the ways in which entities are measured, observed, and defined - herein lies the agential cut: distinctions between entities are made within a field of entanglement. Nishida instead advances a metaphysical approach, where the *basho* posits a deeper, pre-ontological unity in which all entities - subjects, objects, and even relationality itself - emerge from a ground of nothingness. Unlike Barad's (2007) intra-actions, which rely on specific practices to produce entities, Nishida suggests that entities and relations arise as self-differentiations within the field of nothingness, a process that precedes not only interaction but existence itself. This difference means that objectivity does not arise through an agent's cut, but from the immanent unfolding of nothingness - a continuous, non-substantial field giving rise to all distinctions. Ultimately, Keever (2022) argues that Baradian posthumanism does not move beyond anthropocentrism by remaining fixated on human engagement with reality. Integrating Nishida with posthumanism, we see that the point is not to think 'away' human engagement with reality, but rather to understand how human and reality itself originate together within a unified field of nothingness and split only following a process of self-differentiation of this primary field.

Basho transcends Western metaphysical limitations for understanding reality beyond dualistic thinking, signifying the foundational ground where experiences are anchored. For Nishida, there is no transcendent eidetic reality where true eternal essences reside, as opposed to the everchanging illusory phenomenal world of matter. Rather, the phenomenal world *is* reality as the setting for a relational and inessential "co-dependent origination" (Maraldo, 2011, 152). Reality is a field of nothingness, allowing distinction only as self-differentiation, with the self here being fundamentally different from the ego, not the self as a subject but the self as the ground of the subject (Shizuteru, 1995). Reality in this sense does not necessitate a privileged transcendental subject or God, functioning instead as an agency without an agent. Once more, we see that this philosophy resembles agential realism, in that distinctions arise through relationality rather than existing independently, but it also goes beyond it by providing a more radical approach to entanglement and intra-action, suggesting the primordial field from which intra-action itself arises, i.e. consciousness as a place of nothingness. Objectivity, in this view, is thus part of a continuum of experience rather than something originating only in opposition to a subject, as in traditional Western epistemology.

Following Nishida, we envision a state of intra-being where divisions between self and other, subject and object, human and non-human, being and nothingness are fluid and negotiable. His meontology may challenge the uninitiated in Buddhist metaphysics but encourages an intuition, what Nishida (2012a) refers to as a pure act "for unity of contradiction" (94). This intuition refers to the *basho* where any division occurs as a self-contradiction or self-differentiation of a unified field of nothingness, offering a challenge to anthropocentrism. This no-thingness is not an absence but an enveloping field facilitating the dynamic relationship of observing, observed, and observer, providing a profound basis for existence and cognition.

To sum up, Nishida attempts to overcome the Western philosophical tradition founded upon the separation of subjects and objects. In such tradition, reality stands against a rational subject, who observes, represents and knows it in a detached, objective manner. Contra this, Nishida argues that reality is primarily something experiential and undifferentiated, unfolding within an unsubstantial field of consciousness defined by relationality, i.e. nothingness, prior to any subject-object split. This is what we understand as the self. Any secondary objectification, conceptualisation, and judgment involves self-differentiation of the unified field.

The Basho of Videogame

Incorporating Nishida's non-dualistic philosophy we recognize the entwined nature of reality without making the human subject central. Nishida's shift from the grammatical subject to the predicate in analysis illuminates the dynamic interplay within reality, helping to overcome the strict subject-object divide. In game studies, this translates to a shift from "(video)games *are*" to "*is* (video)gaming", emphasizing the mutual emergence of subjects and objects from a shared meontological field. This approach addresses Keever's (2022) concerns with Barad's (2007) framework by offering a view of objectivity that emerges immanently and not from a transcendent observer's cut. Nishida also advances beyond the anthropocentrism of alien phenomenology by questioning what precedes object formation. It is not enough for approaches influenced by ANT, OOO or assemblage theory to say that (video)games are a coming-together of various entities including human bodies, code, graphics, sounds, bits of plastic and silicon chips, and so on. Nishida would see such descriptions as a series of judgments cleaving a fundamental non-distinct unity. Describing videogames as "rules, avatars, story, hardware, code, player, genre, (…)" as per Bogost's (2012) ontography, would be a fracturing of a fundamental unity for Nishida. Saying "videogames are…" is an answer to the question "what are videogames?". By asking this question we remain trapped in "object logic" (Nishida, 1945/1987b), assuming that there is some essence of videogames. Thinking about videogames as networks, assemblages, or arrangements, recognising their complex nature is still a type of ontological thinking that assumes a truer, deeper, "more eternal" reality behind the illusion of the videogame as an individual, whole, substantial entity.

Nishida instead would invite us not to interrogate what videogames are but to witness *that* they are. Knowledge of videogames, in the Nishidian sense would involve not their abstraction but their existence within experience. This type of knowledge is different from that associated with the objective logic of the sciences and instead relies on a type of intuition relying on the logic of *sokuhi* or the "logic of contradictory self-identity" (Nishida, in Yusa, 2002, 300). Robert Carter (1989) describes this as "the absolute identification of the is, and the is not" (59). This may be symbolically represented as 'A is A; A is not-A; therefore A is A'. The logic of contradictory self-identity moves us from seeing things as self-contained, substantial objects (I see the thing), to recognizing the no-thingness that undergirds everything (I see that there is no 'thing'), to finally acknowledging that,

yes, in fact there is something phenomenally there in front us. The thing is transformed insofar I do not seek its essence in a distant world of eternal forms beyond the illusory phenomenal one, but rather recognize that the phenomenal *is* real (as is change, flux, impermanence, and so on). Nishida here moves from ontology (A is A) to meontology (A is not A), finally recognizing the non-duality of the two, allowing us to move from a logic of either/or (either a thing 'is' or 'is not') towards one of both/and (a thing both 'is' and 'is not'). The result should be a renewed appreciation for the phenomenal reality of the thing, *that* it is. Thinking about the contradictory self-identity of videogames, we start with 'I see a videogame' (a statement we may associate perhaps with ludological and formalist approaches interested in finding an essence of videogames, but amongst which I would also include alien phenomenology insofar as it relies on object logic); we proceed to 'I see that there is no videogame' (a statement we may associate with posthumanist approaches of the Baradian flavour); we finally recognize that 'there is in fact videogaming', and it is real in its phenomenal manifestation as experienced within its *basho*.

Videogames, from Nishida's perspective, are thus *events* apprehended within consciousness, which is not reducible to brain activity or neurological mechanisms, but is rather the field where the notions of 'brain' and 'consciousness' become possible to begin with. Within this field videogames unfold taking form out of the nothingness of consciousness in the present moment. *There is no videogame.* What there is the experience in the *here* and *now* of something arising as form out of formlessness which then becomes a videogame. In this framework, the player is not as a separate entity but rather an integral part of the unified field of the *basho* of videogaming. Player and videogame are not distinct as subject and object; they only manifest as such within the empty self's unitary field. The individual's identity is fluid, encompassing multiple roles simultaneously—a social being, a player, a character (Conway & Trevillian, 2015)—within the contradictory self-identity logic, embodying the both/and structure. Thus, I can be Andrea *and* the player *and* Lara Croft, embodying various identities at once.

I propose a theory of the *basho* of the videogame, envisioned as a dynamic, relational field-event. Within this field, elements like game mechanics, code, hardware, and player expectations indeed intra-act and co-determine each other. However, simply listing these elements, as in alien phenomenology, does not surpass object logic. Acknowledging that these elements have no substantial existence outside of their intra-actions, as done in Baradian approaches, progresses us past Cartesian views, but we may go further. With Nishida, we shift focus from intra-actions to the field where these occur - the *basho* of the videogame - moving beyond the subject-object split. This is different from how Barad (2007) conceptualizes phenomena, i.e. entities originating through their intra-actions as specific material-discursive entanglements. Thinking of *basho* as an event points to a deeper metaphysical unity preceding the relationality of entities. While Barad's phenomena arise from the interplay of material and discursive practices, Nishida's event emerges from the undifferentiated field of nothingness, where distinctions between subjects and objects are not only absent but unnecessary until they arise through a self-differentiation within consciousness. The 'videogame', then, is seen as the primary context for the emergence of players and other entities, allowing gameplay subjectivity and objectivity to emerge. We apprehend gameplay as an *event* within consciousness, a "pure act" of intuition (Nishida, 1926/2012a, 54), resonating with Nishida's earlier concept of pure experience. In these moments, the contradiction between subject and object of knowledge is resolved within the *basho*.

The Heart-Mind of Play

Nishida's concept of *basho*, arrived at through logical abstraction, encountered criticism from his student Tanabe Hajime for overlooking the historical, embodied, cultural, and political dimensions that mediate our existence and interaction with the *basho* of nothingness (Sugimoto, 2011). Nishida responded in *Logic and Life* (1936/2012b), discussing the dialectical nature of the historical world and our reciprocal shaping it through tools, technology, and action-intuition within our tangible environment. This shift might appear to move from meontology to ontology, from nothingness to a historical world of things. Yet, it does not fall back into Cartesian dualism, rather it resonates with Martin Heidegger's (1927/2012) concept of being-there.[4] This framework enhances our understanding of players, viewing them not as Cartesian agents acting unto an environment but as posthuman entities transformed through ongoing intra-actions with their surroundings.

In this later work, Nishida develops the concept of *basho* identifying it with the historical world wherein individuals are implaced. He introduces action-intuition as the fusion of practical engagement (action) and self-awareness (intuition). Nishida understood intuition not as a Cartesian disembodied insight but as an active participation in a concrete world, stating, "The world that determines itself as the *basho* of action-intuition is the world that is concrete" (Nishida, 1936/2012b, 114). Action-intuition, in this view, is a dual process: we give form creatively to the world and are also formed by it, an intra-active existence that Fujita Masakatsu (2020) describes as "seeing things by means of action" (409). Action-intuition refers to the world's self-awareness forming itself through our creative actions (Krummel, 2012, 33). Our world, which influences and is influenced by us, is identified with the *basho*.

Nishida suggests self-awareness springs from an awareness of our bodily self, with action-intuition lying "in the fact of the body" (Krummel, 2012, 33). Our bodies are entwined with the world, with individual actions being part of the world's broader activity. This dialectical relation means we shape and are shaped by the world (Krummel, 2012, 34). Nishida (1936/2012b) views the historical body as a lived, creative force that is more than biological, engaging with and transforming its environment, like a cybernetic system. Technology is pivotal in action-intuition, with *technē* allowing the historical body to reshape its world, which in turn reshapes us. Nishida states "the human body must be technological" (1936/2012b, 115), aligning with thinkers like Marshal McLuhan (1964/1994) and Maurice Merleau-Ponty (1945/2005). He posits that by using tools, the body extends its capabilities, interweaving self and environment (Nishida, 1936/2012b, 154). Thus, the body and its tools merge, both becoming elements of the world-body continuum.

I proceed to apply a Nishidian framework to a case study, but before doing so I shall reiterate: videogames do not exist as separate entities but as *events* within a unified field of consciousness preceding the subject-object split. In this view, the focus is not on the player and the game as distinct, but on gameplay as an event including both prior to their separation. The *basho* of the videogame is a self-determining process within consciousness, with the player's 'appearance' being a manifestation of the subject-object split within this unified field. Recognizing the primacy of the unified filed does not negate awareness, rather it reconnects us to the pure experience where subject and object are still undivided.

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[4] As argued by Gavin Rae (2014), Heidegger casts a major, yet unacknowledged influence, on posthumanist thought. In the specific, Heidegger's project of destruction of the binary logic of traditional metaphysics, his attempt at overcoming anthropocentrism and Cartesianism, and his early accounts of technology in *Being and Time* strongly resonate with posthumanist notions of originary technicity, and are a major influence on Jacques Derrida and Bernard Stiegler, who are a more 'canonical' influence for posthumanism.

Let us look at an example. *Jetpack Joyride* (Halfbrick Studios, 2011) is a 2D mobile game of the infinite runner genre, where the character controlled by the player runs for as long as possible while avoiding obstacles. In *Jetpack Joyride*, the player controls Barry Steakfries who breaks into a secret laboratory to commandeer a machine gun-jetpack hybrid. The player controls Barry as he automatically runs and flies through the laboratory, collecting coins, avoiding obstacles and obtaining power-ups. The controls are simple, players tap on the touchscreen to ascend or descend to avoid obstacles. When playing, individuals enter a *basho* understood as a context setting the parameters for meaning, i.e. a world. Within this concrete *basho*, for example, the smartphone is not (only) a device to contact people and browse the internet but is primarily a means of projecting intentionally within a digital space. Said digital space, if approached through object logic is nothing more than a mix of pixels, code and electrical signals, but within the *basho* of *Jetpack Joyride* it is instead a navigable space. The *basho* also provides context and meaning for why this is an action worth engaging in: numbers are not just abstract digits but become 'scores' measuring player performance, which may be optimized.

Within this *basho*, players incorporate tools and technologies, both hardware (smartphone, headphones, perhaps glasses) and software (Barry Steakfries becomes an extension of the player's intentional acts, and the various power-ups that he picks up are also incorporated by the player). Through these technological incorporations, players' action-intuition modifies the environment which modifies them in return. For example, coins can be found in great number in the digital space, and they are picked up when touched by Barry. These coins may then be used to purchase gadgets, character skins, power-ups and other bonuses. These bonuses may impact what type of actions and movements are perceived as possible, the number of coins that a player may collect, and so on.

The gameplay of *Jetpack Joyride* involves simple controls that are challenging to master. Novices may struggle with the game's rhythm, determining the precise moments to ascend and descend to avoid obstacles, especially as the game speeds up and the obstacles become more frequent. However, with practice, players move beyond conscious timing to a more intuitive experience, defined by feeling rather than conceptual thinking (Dreyfus & Dreyfus, 1986). This intuitive state is akin to Nishida's concept of pure experience, where action flows without conscious deliberation - agency without a distinct agent.

Tensions arise when referring to intentionality alongside agency without agent. We must, however, remember that within Nishida's framework, intentionality is not a projection of an isolated subject, but rather something arising from the relational dynamics within the *basho*. Agency without a distinct agent refers to the fact that, within the *basho*, actions and decisions are not merely the result of a conscious agent imposing their will on the game, rather they emerge from the player's embodied engagement with the game's environment unfolding through action-intuition. This intuitive state resolves the tension between intentional acts and the absence of a distinct agent. Within action-intuition, the player does not consciously decide every movement, rather the game "plays itself" through the player, since intentionality is embedded in the self-differentiating *basho*, rather than within a separate, distinct subject. In other words, from a Nishidian perspective, agency is not a property of a subject acting on an object, but rather an emergent process within the self-differentiating field of experience.

We may compare pure experience to what in gaming discourse is commonly referred to as 'flow'. Flow, associated with the name of positive psychologist Mihály Csíkszentmihályi, is typically understood as an engrossed state during an activity that balances challenge and skill, marked by concentration, merged action and awareness, loss of self-consciousness, a feeling of control, an altered sense of time, and intrinsic reward (Nakamura & Csíkszentmihályi, 2014). Players may

sometimes describe it as 'being in the zone' (Soderman, 2021). Nishida (1911/1992) parallels this, describing a state where "an incomprehensible power beyond the self functions alone" (174). However, Csíkszentmihályi (2002) defines flow as a subjective state, while pure experience precedes subjectivity; it is the "true union of subject and object" (Nishida, 1911/1992, 174-175). In other words, within pure experience it is not that the player acts onto a gameworld and experiences flow once they have become skilful enough, but rather the *basho* "plays itself". Actions unfold without effort and feel right, there is no need to cogitate and represent mentally to oneself the action one wishes to perform. This intuitive cognition through praxis (Fujita, 2020) is not that of a thoughtless automaton but is rather an integrated heart-mind (*kokoro*) experience, combining thought, feeling, and emotion (Carter, 1989, 117). In pure experience, the dichotomy between thinking and feeling dissolves, leading to actions that express thought-feelings in the moment.

In these moments, players are not yet divided into subject and object; neither the gameworld nor its components are seen as distinct objects. The experience is one of nothingness—a unified consciousness expressing itself through *kokoro*, the intuitive heart-mind. This emergence occurs before any subject-object split, as a self-determination within the field of consciousness. Subsequent splits might occur; for instance, encountering an obstacle might prompt a reflective strategy, or a notification might shift the device's role from gaming to communication. I may also in these moments self-consciously reflect on my gameplay experience, objectifying and comparing it to previous sessions, or reflecting on how much fun I had, how much I like, or dislike, the game. These moments of self-conscious reflection, however, differ from the direct knowing of pure experience, which is not about *what* or *how* the game is, but *that* it is.

Conclusion

This essay has navigated posthumanism and game studies, forging links with Nishida Kitarō's philosophy. It represents a cross-cultural dialogue, uniting distinct philosophical traditions. In doing so, it responds to the posthumanist invitation to engage with ontologies and epistemologies beyond the Western canon. This discussion sheds light on the intra-active, co-creative relationship between player and videogame, transcending traditional notions of interaction. The *basho* serves as an important concept through which we may extend beyond posthumanist approaches within game studies that are still Cartesian at their core. Often still, scholars present games as self-contained, substantial entities, while players are assumed to be isolated subject, acting through their mind, and somehow using their body as a machine, with the consequence that the body and what it can do falls completely out of focus. Yet, as Nishida (1933/1970) himself pointed out the "'cogito ergo sum' should be rephrased, such that it is not a matter of 'I think therefore I am' but rather 'I act therefore I am'" (91). A number of posthumanist thinkers have already adopted and advanced this position, as elaborated previously in the literature review. This article adds to this body of scholarship by integrating Nishida's work within posthuman game studies.

Through Nishida we also add to agential realism, by allowing us to intuit the place where intra-action unfolds. This place is the *basho* of videogame, where all the various components of the videogame assemblage intra-act and come into being, the necessary ground from which any isolated entity emerges at a second moment of objectification. The *basho* intended as such may seem like a deworlded abstraction. Nishida realised this too, and by referring to the *basho* as a historical world which moulds, and is moulded by, an embodied individual able to extend their body through tools through action-intuition he addressed those concerns. In many ways Nishida was describing a quintessential posthuman condition, where the boundaries between environment and human are

malleable, if they can even be said to exist, and where the technological blends with the biological in service of the phenomenological. It is in the world, engaged in concrete action, that we intuit the unitary condition of subject and object, "through the standpoint of the active self" (Nishida, 1933/1970, 91), as opposed to that of the detached Cartesian/humanist subject.

This exploration adds to the posthumanist discourse within game studies, challenging the dominance of Western philosophical paradigms and inviting us to consider a more global, interconnected philosophical heritage. I finally wish to stress once more in this conclusion the importance of interdisciplinary thought and the possibilities that emerge when we allow diverse philosophies to inform and transform our understanding of human experience, and invite scholars and players alike to delve deeper into the spaces where our selves merge with the Other.

Acknowledgements

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Bear(ing) Down: Encountering Posthuman Critical Media Studies through the (Re)tracing of Object and Embodiment

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Abstract

This paper explores the how of posthuman theory by a collaborative and conversational visual reading of FX's The Bear. In both the shared and individual encounters with the show, we consider how objects produce relational affects across characters, objects, time, and space. We insist that unique shows like The Bear, expand beyond a "use" orientation of objects, instead producing objects as central to the narrative. Some objects become, in one way, another character as the action does not occur separate from the objects. We argue that while that is often the case, this is not often made visible. The Bear, while still being a character-driven show, emphasizes the agency of the objects. Objects get long takes, close-ups, and meaningful space in dialog, making the show a meaningful text for temporary withdrawal from human-centered ways of seeing and knowing.

Keywords: *Agency; Objects; Posthuman, Television; FXs The Bear*

Introduction

Human relationality and mutuality are complex—nested and knotted within shifting conditions and kaleidoscopic circumstances. As these relationships (d)evolve, they become imbued with the agency to alter ongoing unfoldings surrounding each encounter. Put differently, and toying with Sara Ahmed's (2010) thinking, as people make relationships within the more-than-human world, the more-than-human world in turn, makes relational people. Finding ourselves within this paradoxical logic brings into focus static/inert objects and materials that play a central role in how people connect to one another. In this sense, ontologically, objects and materials are more than passive and benign, they abound with a sense of vibrancy—thus animating how human relationships (pro/di)gress (Bennett, 2009; Snaza, 2019). According to Jane Bennett (2009), "[i]f matter itself is lively, then not only is the difference between subjects and objects minimized, but the status of the shared materiality of all things is elevated. All bodies become more than mere objects, as the thing-powers of resistance and protean agency are brought into sharper relief" (13). Extending the trajectory of what constitutes as a body collapses logistics upholding the binary of human and non-human through a redistribution of agency. Here we take a cue from Karen Barad (2007) who wrote, "[c]rucially, agency is a matter of intra-acting; it is an enactment, not something that someone or something has. Agency is doing/being in its intra-activity" (235). In this sense, agency becomes the capacity to (re)act *through* two (or more) bodies encountering each other. Going further, when these encounters are framed as trans-corporeal (Alaimo, 2018), agential bodies become "intermeshed with

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the dynamic, material world, which crosses through them, transforms them, *and* is transformed by them" (435, our use of emphasis).

Sara Ahmed (2018b) discusses the politics of attention, emphasizing that how we attend to encounters impacts how we can know and be in the world. Nathan Snaza (2021) writes that "a particular social order—we can call this Enlightenment, or imperial Western modernity—dulls us to particular aspects of our world, and to considering how that world has come into existence, even as it shapes us in other way" (21). Of interest to our work, is engaging in techniques that allow for expansive ways of sharpening that which is easily backgrounded. Concurrently, alongside being guided to consider the politics of attention, we also practice attending to the politics of human relationships as depicted in popular culture, revealing themselves through material entanglements. Further, we wonder how different ways of looking allow for alternative readings to emerge toward ruptures in assumptions of bounded liberal subjects and colonial ways of looking and knowing.

We know that despite commitments to looking in new ways that this takes ongoing practice. Guided by Judith Butler's 2004 position that "[t]here is a certain departure from the human that takes place in order to start the process of remaking the human" (3-4), we use thing-power (Bennett, 2009) to (re)read the first season of the popular television series, *The Bear*. While Jane Bennett (2009) discusses the agency of objects, putting into question taken-for-granted cause-and-effect relationships, Stacy Alaimo (2012) positions bodies as being unable to be disentangled from "the flows of substances and the agencies of environment" (476). Avery Gordon (2008) reminds readers to account for in-between spaces of materiality, those imprinted with a "seething presence" (8). That is, a (re)orientation of our attention as readers and consumers of media that accounts for spaces, bodies, and relationships that cannot be touched, yet nonetheless continue to touch those on screen (Varga & Helmsing, 2022). Again, socialized in Western epistemologies and colonial ways, it takes ongoing practice to think and see differently (hooks, 1992) in order to become and relate differently. Posthuman and more-than-human theories provide a place to start unlearning habits of only noticing the humans in any given scene-fictional encounter or otherwise. Following Alaimo (2018; 2012), Barad, (2007), Bennett (2009), and Gordon (2008), if objects have (ephemeral) agency and are affective[3] (Ahmed, 2004; 2008; 2010), we must (re)imagine relationships that produce consequences and entanglements.

We turn to prestige television because despite it being deeply implicated in market forces of entertainment, it departs from mainstream television in that viewers take interest, and perhaps find pleasure, in complex and challenging narratives. Prestige television is a shared visual, sonic, and narrative encounter that, when intentionally read through theory, allows for creative frames for viewing and thinking to emerge. In the case of *The Bear,* food becomes central to the action of the narrative in a way that allows the viewer to recognize the leakiness of the humans (Manning, 2020). The reason prestige television holds the attention of all kinds of people is because it is a space to (re)imagine what matters, while also resonating with what always-already does (Bignell & Woods, 2022; Levine, 2008). *The Bear* did this—and continues to do this—for millions of people.

In the summer of 2022, FX's first season of *The Bear* premiered on Hulu. The show's protagonist, Carmen (Carmy), returns home to manage his deceased elder brother's sandwich shop after traveling the world working as a fine dining chef. Home in this sense is also the site of (childhood) trauma.

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[3] Along with Ahmed's work, our understanding of affect is informed by Gilles Deleuze and Félix Guattari's (1987) notion, via Baruch Spinoza (1677/2005), that, as a register of myriad sensibilities and "shuttling intensities" (Seigworth & Gregg, 2010, 2), affect seeks to understand the "ability to affect and be affected" (xvi).

The protagonist returns to find a family that is worse off than when he left, reeling from the loss of his older brother Michael. While the show is about Carmy, the restaurant, and multiple forms of loss, these things are entangled with the day-to-day of cooking, eating, and keeping a business running. Unlike many television shows, the less central characters are also developed and provide relevant texture to the arc of the story. The show is anxiety-producing, complicated, difficult, and on occasion, heart-warming. It is "good television" in that the characters are relatable; they each have traits/flaws that draw viewers into their individual/collective stories, and the narrative resonates with the experiences common in human life. *The Bear* resonates as prestige television because it is unexpected, unpredictable, and challengingly sensory—food, and all its presence/absence is central to the story.

One does not watch *The Bear* to escape the difficulties of everyday life—rather one watches to *feel* and *sense* both the best and worst of being alive in contemporary times. As television further entrenches its dominance as a cultural text, different ways of reading visual texts are required to theorize the place of television in critical media studies (Cord, 2022; Gripsrud, 2010). For as Erin Manning (2020) reminds us, "[t]o do this work, modes of knowing differently must be valued" (53). Thus, we see this posthuman viewing of *The Bear* as a mode of knowing that is not bound by neoliberal subject positions that seek singularity through static repetition. A posthuman viewing is concerned with difference through simultaneity and modes of not just knowing, but *becoming* situated with/through the material world.

Television is in a renaissance. Since *The Sopranos*, the 1999 HBO television show featuring a mob family's complex lives, a genre of television has emerged that is meant to be difficult, upsetting, and challenging to the assumptions of viewers (Bignell & Woods, 2022). Engaging with media through a materialist lens holds the potential for deeper understandings of the multiplicitous ways in which matter animates how humans connect with/to each other. By (re)tracing workings and materials composed of metal in the popular show *The Mandalorian*, Bretton Varga and Erin Adams (2022) identified "the direct and indirect role that metal plays in shaping everyday social, intellectual, and technological performatives" (176). Importantly, Varga and Adams (2022) noted that the relationships between the show's characters and metal traverses the contours of merely identifying a material discursive bond. That is, bringing to light how such relationships "will provoke new ways of thinking about identity, responsibility, justice, and perhaps more significantly, co-existence across more than human world" (Varga & Adams, 2022, 177) holds implications for how people might come to understand their own entangled alliance with/to technological devices (e.g., phones, televisions, computers). An alliance that is underpinned by deeply problematic and extractive policies/practices relating to how devices used to consume media are produced.

Adjacently, Paulo Saporito (2020) conducted a posthuman (re)reading of three Italian films by Micheloangelo Antonini *L'avventura* (1960)*, La Notte* (1961), and *L'eclisse* (1962) to explore the relationships between female protagonists, material conditions on screen, and the role the camera plays in how each scene is constructed. Framing this analysis through Barad's (2007) agential realism, Saporito (2020) keyed in on the intra-activeness of how the female body becomes materially (re)produced through relationships that are not represented on screen (e.g., director, camera). While this suggested absence conjures Gordon's (2008) notion of haunting and the significance of how "understanding it is essential to grasping the nature of our society and for changing it" (27), it underscores the thing-power (Bennett, 2009) inscribed upon objects used during the performance and production of media. Expounding upon the agency of camera, Saporito (2020) writes, "[t]he camera fully embodies its tactile-eye and aims to register haptic stimuli, beside the visual and aural

ones, both acknowledging the agency of matter in its reconfigurations and claiming its agential space in the enacted material entanglement" (290). In essence, Saporito's (2020) work advocates for an interrogation *and* indexing of relationships underpinning—or we would argue haunting—on-screen liaisons between bodies both human and non-human.

While it is common to discuss television by focusing solely on the characters, we tread down a similar path of these articles by investing in the agency of objects (Barad, 2007; Bennett, 2009; 2010) and the affective implications of what they produce (Ahmed, 2004; 2008a; 2010). This re-read, re-watch, and re-trace of *The Bear* provides different ways of understanding how objects and affects entangle with the agency of the characters across time(s) and space(s). We see this posthuman approach as a resistive act of troubling how media is traditionally consumed. Ultimately, this work seeks to complicate the assemblage that is visual storytelling through an attunement of human and non-human relationality.

Tracings of Thing-Power

By modelling a collaborative practice of "reading" a visual text, we imagine this paper as a pedagogical offering, accounting for the different paths toward visual texts. Visual culture frames and facilitates ways of seeing and imaging. In a media-rich environment, the stories that we encounter help us make a temporary sense of the world and can frame the politics and social interactions that come to make up a life. Donna Haraway (2016) writes, "It matters what thoughts think thoughts. It matters what knowledges know knowledge. It matters what relations relate relations. It matters what worlds world worlds. It matters what stories tell stories" (35).

Thing-Power

Why advocate the vitality of matter? Because our hunch is that the image of dead or thoroughly instrumentalized matter feeds human hubris and our earth-destroying fantasies of conquest and consumption. It does so by preventing us from detecting (e.g., seeing, hearing, smelling, tasting, feeling) a fuller range of the nonhuman powers circulating around and within human bodies.

In the introduction of *Vibrant Matter*, Bennett (2009) references other thinkers and writers who have learned this "attentiveness to things and their affects" (xiv), concluding that "[w]ithout proficiency in this countercultural perceiving, the world appears as if it consists only of active human subjects who confront passive objects and their law-governed mechanisms" (xiv). The lack of proficiency at this kind of perception, as she describes, is a failure of the imagination and a block to reframing the social and political in ways that may come to matter in significant ways. Removing or reducing this block shift necessarily facilitates different kinds of relationality but requires ongoing practice. The argument for its value and use is insufficient for developing a "countercultural perceiving" (Bennett, 2009, xiv). Attunement, attentiveness to "non-human forces" is difficult because accounting for the more-than-human remains counter with the most dominant frameworks disciplined and surveilled in the broader society. Critical media studies account for the effects and impacts of media on power relations. Combining critical media studies with vital materialism attends to the potential of reading and re-reading media to differently imagine and know the media artifact, but also the world that media represents. We argue that media, in this case a television show, can become a space to practice looking and therefore an opportunity to become better attuned to the role that the non-human plays

in producing the actions/inactions that make up a life. We think *The Bear* is particularly suited for developing a practice of reading visual texts that engages the agency of objects and their vitality.

According to Bennett, "thing-power" is when a thing "issues a call" that may or may not be understood or heard. The hearing or understanding is not required for a thing to call. Bennett (2009) writes that a limit to the term is that it "lends itself to an atomistic rather than a congregational understanding of agency" (20). Things have the capacity and ability "to make things happen, to produce effects" (Bennett, 2009, 5), alone and in *confederations*. In our discussion, we want to engage the "collaboration, cooperation, or interactive interference of many bodies and forces" (Bennett, 2009, 21). By differently paying attention to objects that figure prominently in not just the action of the show, but specifically the way relationships manifest, we also want to think about them in relation to other objects, humans, and non-humans, working together to produce action and stasis, sometimes both at the same time. Knives cut, their absence or loss disallows further cutting, and stops the humans from cooking in the kitchen. Knives represent status and skill, or the lack thereof. The outcome of a dish could depend on the knife used by the hand to cut. Fire burns skin causing it to bubble, while simultaneously cooks (and overcooks the meat) in a kitchen, where people of different races, genders, neighbourhoods, ages, and histories are brought together around a shared goal. Fire, along with human willingness to transgress the law, facilitates lucrative insurance fraud, allowing a failing business to continue. The failing business continues, allowing patrons to receive beef sandwiches that melt in their mouths and give them a feeling of gastric satisfaction. The business can continue, thereby extending food, family, community, and geographic entanglements and relations, while also becoming central to new relationalities and the possible encountering of future intensities.

We next present fragments of our shared discourse about how we each re-read *The Bear*—specifically the emergent connectivity between humans and more-than-humans featured in the show. While each author presents a "reading" of *The Bear*, this section is sutured together by the theories that underpin this work. That is, material framings meant to position more-than-human objects as vibrant and agential.

Proliferation: Describe how objects animate the emergence of relationships

"*Something* throws itself together in a moment as an event and a sensation; a something both animated and inhabitable" (Stewart, 2007, 1, original use of emphasis).

Asilia: I want to start with Carmy's fancy knife and the *Noma* book to think more about Tina and Marcus' becomings. The book is introduced in the second episode and features colour photos and descriptions of Carmy's culinary creations. The book represents the old Carmy. The Carmy before his brother died and before he returned home to hold together the pieces left behind by his brother. Marcus and Tina both work in the kitchen. Tina is a middle-aged working class Latina woman and Marcus is a working-class Black man. Marcus is curious about Carmy's past kitchen experience, while Tina is outwardly mocking and dismissive. She does not want the restaurant to change and resents Carmy's attempts to "elevate" the establishment in ways that reflect his skill and experience. Both Marcus and Tina's backgrounds are alluded to at different points, but only in vague terms. The details that are revealed frame them in terms of narratives familiar to the viewer–working class, Black/Brown, people living in an urban metropolis, stuck in dead-end jobs. This is ordinary and familiar.

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Despite the lack of exposition, it is clear that their kitchen training is limited to a lower tier, fast-casual eatery serving other working-class people. Tina initially has a flexible role in the kitchen, doing prep and other jobs as needed, but Marcus exclusively bakes the bread used for the famous beef sandwiches. Both initially seem to understand their jobs at the restaurant as just that—a job. They work for a paycheck and have a laugh with their coworkers, but they do not expect that their time at The Beef will expand their economic or personal possibilities. This changes when Tina encounters Carmy's knife and Marcus encounters Carmy's *Noma* book, thereby shifting both of their trajectories in ways that unfold over Seasons One and Two. "Each transition is accompanied by a variation of capacity: a change in which powers to affect and be affected are addressable by a next event and how readily addressable they are—or to what degree they are present—as futurities" (Massumi, 2002, 15). The assemblage of forces—knife/book, worker in dead-end job, kitchen, Carmy, *The Beef of Chicagoland*[4], and beef—combine to facilitate a future that neither had been able to previously imagine. Both Tina and Marcus will "[b]e changed by the encounter" (Massumi, 2002, 15) with the objects that they previously likely would not have otherwise seen or touched had Carmy not returned from his time away to run the restaurant after his brother's tragic demise.

To further explore Tina and Marcus' trajectory we can start literally on the ground. *The Bear* is unusual in that the camera often captures that which is commonly obscured in television shows–dripping grease, stained countertops, and the floor of a kitchen tasked with serving food in a working-class Chicago neighbourhood. The viewer sees the spills, onion peels, and other items that you would find on the kitchen floor of a busy dysfunctional restaurant. In episode 1, "System," the viewer is introduced to Carmy's knife less than ten minutes into the episode. The introduction happens before the viewer meets characters that become central. As viewers, we learn that his knife is of a superior quality to those that are most available in the kitchen of *The Beef*. We learn that the knife is from Carmy's time in fine dining. Carmy says to no one in particular, "Where is my knife?" over and over again (Storer, 2022a, 10:40). Then: "Chefs we gotta sharpen our knives when we get a second. All these knives are dull" (Storer, 2022a, 11:16). The camera pans to the ticking clock on the wall. The knife is associated with the constant threat of passing time. The knife is a threat and a potential. The dull knife slows times while the sharp knife quickens. Time is also a threat and a potential in a restaurant. More time means more delicious foods—as emphasized with the slow cooking meat that the old timers worry takes too long until they tasted it when it was done. But also, time passing means that things might not be done in time, which has a lot of unwanted implications in a struggling restaurant. If time is not used appropriately, the restaurant might fail leaving precarious people without stable employment. Time is of great importance to the trajectory of their lives. And a dull knife slows time.

In this episode and many others, Carmy focuses on the details because in his view, all the small details add up to become the kind of restaurant he hopes to run, serving the kind of food that goes far beyond what The Beef is used to serving. The details are an accumulation of his hopes entangled with sharp knives, clean countertops, cut (not torn) tape, and beef cooked and cut to perfection. Humans' ability to use these objects in ways that serve the broader goal of keeping the restaurant open are also essential to the confederation. Later in episode 1, at 15:36 Carmy looks down, the camera follows his gaze to find his knife lying on the floor partially visible lying under the sink. Time slows again, the camera lingers on the knife. Carmy picks up the knife and the screen flashes to him

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[4] *The Beef* is the name of the restaurant in season 1, but ultimately—through countless relational encounters—becomes *The Bear* in season 2.

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in the morgue, then flashes again to the seasoned, juicy cut of meat. Some dead bodies are eaten, others lie in the cold morgue.

There are many ways to read the knife and its ongoing (e/a)ffects and impacts, but here we will focus on Tina. The knife, the very same one that Carmy loses and then finds carelessly discarded on the floor (possibly by Tina in a move toward disorder and confusion) becomes one of the things that allows for Tina to develop a set of skills that transition her from line cook to chef, shifting her sense of herself from low wage worker to skilled chef. This change in status impacts her life in ways that are never detailed or explained, because viewers familiar with precarity, labour, and late-stage capitalism can easily recognize how the expansion of possibilities might impact someone like Tina. The character development is not only a result of the knife, but also *not only* the outcome of Carmy and Tina's will and efforts, as might be a more common reading.

In the season opener, viewers' attention is drawn to everyday items that produce a range of effects over the course of both season 1 and 2. For example, the show begins with Carmy entering a work atmosphere that has been largely established. The staff already know each other and have ways of working in the kitchen that is familiar and comfortable. Carmy wants to change the restaurant, so it more closely reflects what he believes matters about running a restaurant. To do this, he must socialize them into a new way of doing things. They resist this socialization, management, and surveillance to varying degrees. They ignore him, argue with him, mock him, neglect to do aspects of their job, and in some cases, outright sabotage him. Tina is the most overtly resistant to Carmy's management. She talks badly about Carmy to the other employees, ignores his directions, and does tasks in the way that she prefers, even when this derails the productivity of the kitchen. Tina calls Carmy "Jeff" instead of "Chef," refusing to comply with the restaurant norm of addressing colleagues. This annoys Carmy, but he chooses his battles and avoids pulling rank on small matters. He wants to change the restaurant but does not want to change the community that has developed among the workers.

In contrast to Tina, Marcus' resistance to change is minimal. He complies without argument, even as sometimes he shows his annoyance. Marcus is immediately interested in Carmy's background as a celebrated chef. Carmy does not directly discuss his experience in fine dining, often shrugging it off or changing the subject when it comes up. The *Noma* book, thick with beautifully shot pictures, becomes a stand-in for what Carmy avoids discussing–his past, his brother, and the knotted trauma of both. Marcus does not know any of this context and engages the book in its most obvious use– a guide and inspiration for baking.

At 26:22 in episode 1, Marcus asks Carmy to check the bread he has just baked. He previously baked a batch, but Carmy told him it was too crumbly and told him to do a steam bath. During this interaction, the *Noma* book is behind him on the shelf foreshadowing season 2 and Marcus' evolution as a baker. The book had been placed there after it had fallen to the ground in the previous scene. In subsequent episodes, Marcus is inspired by the book, printing out colour photos and placing the photos around his workstation. He shows Carmy what he has done with the book, the photos communicating Marcus' appreciation of Carmy's experience and his desire to learn. The book brings the two together, momentarily flattening the divide between boss and worker. These moments with Carmy and the book allow Marcus to visualize something (maybe, a different future, a pastry, a skillset) that he could not have had an image of prior to encountering the book *and* Carmy. Carmy, flesh and blood in front of him, brings the images of the book to life. This "to life" becomes *both* literal and figurative, as Marcus later learns to make some of the desserts featured in the book.

In the following season, Carmy sends Marcus to Copenhagen to study at the very same restaurant featured in the book that he picked up and displayed on the kitchen shelf so many months prior.

Bretton: I think *The Bear* uses materials in many ways to resist the reproduction of uncritical assumptions about how relationships within the more-than-human world are developed and are always-already haunting. In episode 2, "Hands" (Storer, 2022b), relational texture emerges between two characters that have different racial identities, backgrounds, perspectives, and dispositions through the stickiness of objects. Here, I am thinking about Sara Ahmed's (2004) positioning of material connectedness within the "histories of contact between bodies, objects, and signs" (90). Tracing the contours of this thought, objects stick to other objects thus im(br/pl)icating the trajectory of human connectedness.

This holds true for how Richie who is an unmotivated white, male, vulgar, and antagonistic character intra-acts with Sydney, a determined, Black, female, thoughtful, and generous character. Richie is Sydney's foil. Richie's history working at the show's restaurant, The Beef, is extensive and Sydney is the newcomer. Immediately, Richie is hostile to Sydney upon her arrival, but an encounter *through* three different objects (that become linked) begins to thaw Richie's surly disposition (even if momentarily). During a visit from the Health Inspector, a pack of cigarettes are found left on the stove. Carmy believes they belong to Ritchie[5], who he angrily tasks with going to the hardware store to buy caulking to fix a problematic hole in the wall that was discovered by the Health Department (contributing to the grade of C, along with the cigarettes). However, Ritchie has a suspended license triggering Carmy to assign Sydney to the role of driving Ritchie. Once at the hardware store, Ritchie's contumacy influences the product he selects for the repair job—which of course is wrong. Several moments later, the two are back in the car and Ritchie begins questioning Sydney on why she would want to work for Carmy. To which, she affectively replies, "You know the restaurant could be good. Like, I know you know that. Like, it doesn't have to be a place where the food is shitty, or everybody acts shitty and feels shitty" (Storer, 2022b, 19:36). Weaving itself into the fabric of this scene is another object, a cell phone, which further animates intensities and happenings layered within the unfolding relationship between Richie and Sydney. After answering an incoming call, viewers hear Richie talking lovingly to his five-year-old daughter, as he begins to console her on her fear of starting a new school. For the first time, Richie's character becomes humanized and, after he hangs up, Richie admits that he "fucked up with those cigarettes…and I got the wrong caulk, I think" (Storer, 2022b, 22:23). Sydney simply holds up a plastic bag and replies, "You did. But I didn't" (Storer, 2022b, 22:36). The two characters share a laugh and the scene closes.

A vital materialist reading of this scene—and relationship—embraces Bennett's (2010) use of the material term *entelechy*, which "attempt[s] to name a force or an agency that is naturalistic but never fully spatialized, actualized, or calculable" (63). From this perspective, each of these three objects: cigarettes, caulk, and cell phone traverse the literary category/register of MacGuffin—which flattens objects embedded within fictional narratives as merely being propulsive actants. Instead, objects become *vibrantly* (re)positioned with thing-power (Bennett, 2009) and agency (Barad, 2007) thus drawing our attention to the "necessarily intimate relationship between entelechy and the regular, observable operations of matter" (Bennett, 2010, 55).

Crucially, each of the objects transcend their usual/intended purpose and contribute to the making—and later in episode 7 "Review" in which Sydney stabs Richie—and unmaking of the material self which, as Alaimo (2012) reminds us, "cannot be disentangled from networks that are

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[5] In the final scene of this episode, Carmen realizes that the cigarettes were indeed his and not Ritchie's.

simultaneously economic, political, cultural, scientific, and substantial" (476). Concomitantly, following the pattern of the non-humans throughout the duration of the scene works to spatialize where—and ultimately how—the relationship between Richie and Sydney progresses. While the three highlighted objects apply pressure to how the characters begin to relate to each other, the portion of the scene that perhaps could be defined as being the most intimate, occurs within the most intimate space that viewers see, the front seats of a car. Going further, spatiality plays a role throughout the season as many relational and affective encounters proliferate within perhaps the *restaurant's* most intimate space, the walk-in refrigerator. Perhaps material intimacy, and all its nuances, begets relational intimacy—time and time again.

Through a posthuman reading of *The Bear*, arrangements of time—and thus matter—flow in multiple directions at once, gesturing towards a pastpresentfuture (Varga, 2024) conceptualization of both registers. As we learn throughout the show, Carmy, his sister (Sugar), uncle (Jimmy), and most of the characters that worked at The Beef before Carmy's arrival are haunted by the death of Michael, who battled substance abuse and eventually took his own life. The undercurrents of this trauma are palpable in the show—individual recollections of Michael, comments about Michael, and questions about how Michael ran The Beef all tug at the viewer's attention. Carmy's hauntings however reveal themselves *through* the food itself and works to position his character at the nexus of two distinct culinary worlds: a Michelin Star[6] winning fine dining restaurant and his brother's floundering establishment "long known as a family joint, the purveyor of sloppy but tasty Italian beef sandwiches" (Storer, 2022c, 3:18).

In many ways, food for Carmy is pharmakonian—that is, both trauma/joy and love/hate simultaneously. His success in the fine-dining world did not come without scars, whether it be relentless strain to perform, missing familial activities, or being told by his boss, "You have a short man's complex. You can barely reach over this fucking table, right? Is this why you have the tattoos and your cool little scars, and you go out and you take your smoke breaks? It's fun, isn't it? But here's the thing. You're terrible at this. You're no good at it. Go faster, motherfucker. Keep going faster. Why are you so slow? Why are you so fucking slow? Why? You think you're so tough…you are not tough. You are bullshit. You are talentless…you should be dead" (Storer, 2022b, 2:06). This example locates how "[g]hostly matters are part of social life" (Gordon, 2008, 23) and the paradoxical nature of ghosts/hauntings. That is, the material-discursive entanglements that are braided within how people come to relate to each other and the more-than-human world (Alaimo, 2012; 2018). Matter in this way is always-already haunted and produces myriad affects for people *within* material-discursive relationality.

Significance and Concluding Thoughts

The Bear is a show that features humans who intra-act across class, race, and gender differences. Read on this level, the show is familiar, but less common in prestige television. Shows that involve the workplace are often the only realistic settings for such diversity. Shows like *Abbott Elementary*, *The Office*, and *The Jury* are all examples of very differently socially and culturally positioned kinds of people coming together to produce comedic situations. These comedic situations are often the result of misunderstandings, cultural differences, or personality clashes. This is true in *The Bear* to a lesser

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[6] Michelin Stars are given to restaurants around the world that demonstrate cooking excellence. The recognition—which can also be also be removed if the same quality of dining is that earned the award is not being met—takes into account "the quality of the ingredients, the harmony of flavours, the mastery of techniques, the personality of the chef as expressed through their cuisine and, just as importantly, consistency both across the entire menu and over time" (Michelin guide, 2022, para 1).

degree.[7] There are funny moments in the show but funny is not the most immediate tone and the source of humour is not the cultural, class, or racial differences that make up the staff of the restaurant.

In the case of *The Bear,* the differences among the people are not the main source of conflict, rather it is how those differences manifest in/across/through entanglements with things. Sydney's Blackness, her gender, or middle-class upbringing is not source material for plot. It is more her enthusiasm for Carmy's vision for the restaurant, her eagerness to wear the crisp blue apron without any eye rolling or snorting, her unconcealed reverence for the kitchen, and how she uses French words that she learned in cooking school that rub her coworkers the wrong way and create distance between her and them. These things create Sydney's character—without them we would not know her. As we have argued, the show is about fire, meat, knives, pastries, bread, anxiety, fear, Post-Traumatic Stress, death, and debt. The show could be described as character-driven with the relationships between the humans being central to the narrative, but *The Bear* is also equally or even to a greater degree about food and all the things that must be skilfully and thoughtfully combined to conceptualize, procure, make, and serve (good/great) food.

The things in the show must speak to and through the characters, their intra-actions, and their challenges because each episode is only approximately 25 minutes. In some ways, the things must also become characters in their own right. This means that the show must rely on the objects to also develop stories within the overarching story. These constellations of things come together at crucial moments to facilitate encounters that produce (a/e)ffects. Carmy does not have enough meat to serve and must barter his vintage denim. Things for things to make things needed to connect to other things. Once the meat is procured the action shifts away from the action of the humans (even as they remain essential) to focus on the food. The meat is lovingly slow-cooked, tended to, and monitored, then deftly cut with sharp knives. The meat is then placed gently by hands between two slices of bread and then tasted with moans and groans of appreciation. In these scenes, the food—in whatever state it is in at the time—is central, the hands belonging to the human become background to seared and juicy cuts of meat that will be exchanged for money.

All character-driven shows are about more than the humans involved, but *The Bear* emphasizes the more-than-human by tight close-ups of the objects that are also central to the storyline in that without them the action could not occur. Plastic containers, blue labels, olive oil, salt, herbs, flour, mixers, pans, clean surfaces, clocks, walk-in refrigerator, electricity, stoves, and hands to combine, cut, sprinkle, drizzle, sear, and boil. The food could not be cooked, tasted, and eaten with relish without the human and non-human assemblages.

In sum, *The Bear* is more than a (dark) comedy about a motley crew of characters searching for something. A posthumanist orientation of the show as a visual text can be capacious in helping viewers begin "to recognize that phenomena are caught in a multitude of interlocking systems and forces and to consider anew the location and nature of capacities for agency" (Coole & Frost, 2010, 9). Put simply, it is *through* the vibrancy and intra-connectedness of the objects existing throughout the various spaces depicted in the show that *become* animating forces entangling the characters in the material ecologies of their work environment, their affective affiliations with/to food, and perhaps most significantly, their relationships to each other (pastpresent). While Ahmed (2023) reminds us that "[w]e tell stories. We carry them. We are them" (116), posthumanism indexes the different ways that the static and inert are imbued with both thing-power (Bennett, 2009) and, consequently,

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[7] At the prestigious 2024 Emmy Awards, *The Bear* won the category "Best Comedy Series."

narrative power. As a revision of Ahmed's (2023) thought, perhaps *The Bear* is revealing in the sense that *objects* tell stories. *They* carry them. *They* are them.

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From Microfascism to Joyful Affects: A Posthuman Approach to Social Media Redesign

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Abstract

This paper scrutinizes the micropolitical fascism latent in social media platforms' algorithmic designs, which, according to Deleuze & Guattari (2009) and Crano (2022), foster desires for uniformity and control that may escalate into authoritarianism, threatening democracy and free speech. It considers the paradoxical nature of social media in enhancing connectivity while potentially inducing loneliness, an emotional state Arendt links to fascism, and their role in amplifying negative emotions, spreading disinformation, and conspiracy theories, such as QAnon. Delving into the mechanics of such designs, the paper leverages a monist informational ontology to dissect subjectivation processes and envisage overcoming these microfascist inclinations. It suggests a radical redesign of social media platforms that eschews analytics-driven narratives in favor of fostering joyful affect and novel subjectivities. This reimagining aims to detach social media storytelling from analytics and data exploitation, promoting a posthuman model for platform design that resists the generation of microfascist desires.

Keywords: *Microfascism; Informational Ontology; Posthuman Media Studies; Processes of Subjectivation; Social Media*

Introduction

This paper scrutinizes the micropolitical fascism latent in social media platforms' algorithmic designs, which, according to Deleuze & Guattari (2009) and Crano (2022), foster desires for uniformity and control that may escalate into authoritarianism, threatening democracy and free speech. Social media emerged prominently onto the world stage in the early 2010s, hailed as tool of democracy wielded by protestors around the world, but particularly in the Middle East as part of the Arab Spring movement (Hermida et al., 2014; Howard & Hussain, 2013). The role of platforms like Twitter and Facebook in these movements seemed to signal their use in ways that went beyond merely connecting friends or creating a Marshall McLuhan-esque global village. For a brief moment, social media was envisaged as a liberatory tool that had the potential to connect multitudes. However, authoritarian regimes around the world took note of how these tools were used for protest and relatively quickly found ways to both block those types of uses as well as leverage social media platforms for their own political gain, often in the form of dis- and mis-information campaigns (Tucker et al., 2017). Social media is now embroiled in academic debates about fake news, post-truth, authoritarianism, and media literacy (Farkas & Schou, 2020; Mihailidis & Viotty, 2017).

This paper extends the debate on social media's role in fostering microfascist desires by examining the very architecture of social media platforms. It contends that the design and operational logic of these platforms are not neutral but are imbued with ideological biases that shape user behavior and desires in profound ways. By combining the insights of posthuman media studies (Sylvia IV, 2021b**)** and critical theory, the paper aims to unpack how the algorithmic cultures of social media platforms contribute to a form of microfascism by rewarding uniformity and penalizing deviation from the norm.

The paper will explore how the interface and algorithmic structure of social media platforms create a constant drive for uniformity, not just in terms of content but also in the actions and interactions they elicit from users, impacting their processes of subjectivation. It argues that this drive for uniformity is a manifestation of microfascist desires, subtly conditioning users and reinforcing a homogenized digital environment. In this context, the paper will also examine the broader societal implications of these microfascist tendencies, such as the stifling of diversity, the suppression of individuality, and the reinforcement of power structures (Noble, 2018).

Furthermore, the paper will delve into the potential of posthuman media studies to offer alternative frameworks for understanding and interacting with social media. By embracing the posthuman call for the co-creation of change and the acknowledgment of non-human forces in our networked existence (Braidotti, 2013; 2019), the paper will argue for a reconceptualization of social media platforms that prioritizes ethical interactions, diversity, and the fostering of non-fascist desires. It will propose a shift from a user-experience driven by algorithms that promote microfascism to one that encourages creativity, dissent, and a multiplicity of voices.

In conclusion, the paper will offer a critical reflection on the need for continuous vigilance and critique of the digital spaces we inhabit. It will advocate for an active engagement with the design and function of social media platforms, aiming to cultivate a digital ecosystem that resists the allure of microfascist desires and instead promotes a more inclusive, diverse, and democratic form of digital engagement.

Posthuman Media Studies

This project adopts an approach to posthuman media studies as explicated by Sylvia IV (2021b). This approach foregrounds a shift in media studies to incorporate a posthuman framework, which heavily integrates the ethical, epistemological, and ontological dimensions inspired by critical posthuman theorists such as N. Katherine Hayles (1999) and Rosi Braidotti (2013; 2019). This new direction advocates for an affirmative approach to critical and cultural theory, encouraging the reconfiguration of subjectivities through a relational ontology. It underscores a move beyond deconstructive critiques towards practical, constructive theoretical work that actively engages with political composition and public discourse.

The field emphasizes nomadic ethics and the co-creation of change, focusing on the material and the environmental responsibilities of subjects in their interactions. It fosters the idea of subjects as 'desiring machines', interconnected through a network of non-human forces, technology, and societal structures. It extends into political and ethical domains, highlighting the interdependence across mental, social, and environmental ecologies, drawing inspiration from Félix Guattari's (1989b) ecosophy and urging a reimagining of societal relations and a redefinition of subjectivation processes.

Posthuman media studies should involve a methodological shift to processes rather than fixed entities, focusing on becoming and deterritorialization. It calls for a methodological innovation in media studies through the use of counter-actualization, modulation, and counter-memory, advocating for a media studies that is experimental, actively engaging in the creation of future possibilities through the exploration of untapped resources and connections.

Media holds an important role in this approach, as "understanding the role of media in such assemblages becomes a priority for understanding the subject," (Sylvia IV, 2021b, 149). However, posthuman approaches to social media have been relatively under-explored.

Microfascism

While only a small portion of the vast writings of Deleuze and Guattari, both together and individually, directly addresses the question of fascism, it can in many ways be seen as an underlying theme or concern of nearly all their work. Rosi Braidotti has argued that Deleuze's philosophy "is committed to detoxifying the practice of philosophy from the appeal of methodological nationalism and authoritarianism," (Braidotti, 2019, 51). Further Deleuze's anti-fascist work aligns with multiple different definitions of fascism, including "Erich Fromm's definition of fascism (2001 [1941]) as the abdication of personal responsibility and Wilhelm Reich's (1970) idea of a popular, eroticized desire for a strongman to relieve us from the freedom to make our own choices," (Braidotti, 2019, 184).

However, for Deleuze and Guattari (1972), the underlying, and perhaps more important, question that they collectively raise is *why* people desire fascism. Deleuze and Foucault have discussed the importance of understanding fascist desire. Deleuze claimed that:

> We must be willing to hear Reich's cry: No, the masses were not fooled, they wanted fascism at a particular moment! There are certain investments of desire that shape power, and diffuse it, such that power is located as much at the level of a cop as that of a prime minister. (Deleuze, 2004, 212)

Foucault responded:

> When fascism comes into play, it happens that the masses want particular people to exercise power, but those particular people are not to be confused with the masses, since power will be exercised *on* the masses and at their expense, all the way to their death, sacrifice, and massacre, and yet the masses want it, they want this power to be exercised. (Deleuze, 2004, 212)

Here we see Deleuze and Foucault noting that the fascist desire goes so far as desiring one's own death or massacre. Why? Deleuze and Guattari's rather unique answer, as outlined in *Anti-Oedipus* (1972), is that this desire is connected to a micropolitics of desire for uniformity and control. Importantly, there is a connection between microfascism and the macro-level fascism that is most often discussed in politics. In short, microfascism can take hold in one's own subjectivity and makes one more susceptible to fascism writ large: "Fascism as a political movement connects all the tiny fascisms of self, of race, of control and makes them resonate together," (Adkins, 2015, 132). Considering this, even though every microfascist desire does not lead directly to fascism, it is important nonetheless to root out these microfascisms before they have a chance to resonate with one another. It is worthwhile exploring this concept in-depth to understand its relation to our processes of subjectivation, and ultimately, what role social media plays in those desires.

In an interview about their *Anti-Oedipus* book, Guattari notes that their project as a whole is indeed a warning against rising fascism (Deleuze, 1990). Their collective project, which involves finding new lines of flight[2], creating bodies without organs[3], and the methods of schizoanalysis, are all strategies for identifying the potential dangers of fascism and seeking alternative paths. They end that interview by noting that, "if you take *délire*, we see it as having two poles, a fascist paranoid pole and a schizo-revolutionary pole. That's what we're interested in: revolutionary schisis as opposed to the despotic signifier," (Deleuze, 1990, 24). Writing during the post-World War II era, Deleuze notes that while fascist governments may not have been entirely eliminated, microfascism may be even more concerning in the long term:

> Old-style fascism, however real and powerful it may still be in many countries, is not the real problem facing us today. New fascisms are being born. The old-style fascism looks almost quaint, almost folkloric… compared to the new fascism being prepared for us. It is global agreement on security, on the maintenance of a "peace" just as terrifying as war. All our petty fears will be organized in concert, all our petty anxieties will be harnessed to make micro-fascists of us; we will be called up to stifle every little thing, every suspicious face, every dissonant voice, in our streets, in our neighborhoods, in our local theaters. (2007, 138)

Braidotti (2019) argues that Deleuze is referring to the Cold War period when he writes about the peace that is just as terrifying as war. But this process of harnessing our anxieties into forms of surveillance can help us better understand the microfascist connections to social media. Foucault's (1975) concept of the panopticon, which describes a disciplinary mechanism that induces a state of constant visibility and self-monitoring, can also be applied to the surveillance culture fostered by social media platforms. Joshua Reeves (2017) has traced the way American organizations have built a long tradition of surveillance culture, most recently in the form of civil defense against terrorism ("if you see something, say something"). In the era of frequent mass shootings in the U.S., the social media accounts of these mass murderers are often scoured for signs that might have foretold their terrible actions ("what could we have seen?"). This form of constant alertness or vigilance for such signs is only one extreme in which we are encouraged to actively take the role of monitoring others. Further, the very use of social media requires that we constantly monitor and stifle *ourselves* as part of our use of such platforms, as the next section explores in further detail.

Social Media's Microfascism

In this section, I argue that the very design of most of today's social media platforms are inherently microfascist, owing to their algorithmic imperative to conform in order to garner likes or other interactions on posts. Ricky Crano (2022) has previously argued that there is a microfascist element to social media, though his argument focused primarily on the joy of following and the aesthetics of images produced and viewed on platforms. He argues that this aspect of microfascism is actually rooted in the pleasure of affiliation and goes beyond the negative affects of hatred: "This is what Sontag, interrogating the appeal of the Third Reich, calls the 'joy of followers', a joy in fascist belonging," (2022, 277). My posthumanist argument goes one step further, arguing that the need to comply to the underlying algorithm actually supports and extends microfascist desires for uniformity and control. This is an argument about platform design and logistics rather than content.

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[2] A concept that refers to a path of escape or a way to break free from constraining structures and patterns.
[3] A term used to describe a state of being that is free from constraints and limitations imposed by societal norms and expectations.

Exploring this question has been not only a practice in theoretical methodology, but also a personal undertaking, taking seriously Braidotti's imperative that we must seek out the fascist inside each of us: "Importantly, the fascist has to be traced not only in the 'other', but also within yourself… One can undo the fascist inside by acknowledging one's attachment to dominant identity formations and power structures," (Braidotti, 2019, 179). Social media has been and remains a significant part of personal and professional life, so striving against its microfascist elements is also of personal importance to my own anti-fascist work.

At first blush, we can begin to understand the uniformity that arises from regular social media use through Hannah Arendt's analysis of loneliness and its connection to totalitarian movements. In her work "The Origins of Totalitarianism", Arendt (1973) argued that loneliness, as a profound sense of abandonment and lack of connection to the world, rendered individuals susceptible to the grandiose promises of fascist ideologies which offered a manufactured sense of belonging.

Arendt distinguished loneliness from mere solitude or being alone. It was a more existential condition of rootlessness and alienation from others and society at large. This inner vacuum, she posited, created a breeding ground for the appeal of totalitarian propaganda and its mirage of collective purpose. Social media, with its curation of idealized virtual worlds and emphasis on performance metrics such as likes and shares, can induce a similar state of loneliness, one disconnected from authentic human bonds yet perpetually hungry for validation within the platform's constraints (Turkle, 2011).

Just as totalitarian regimes actively cultivated isolation to achieve compliant masses, socially mediated interaction governed by proprietary algorithms funnels us into microbubbles tailored to our quantified selves. This atomization of experience mirrors the erosion of public spaces and plurality that Arendt warned against. Under the illusion of connectivity, we are alienated into individualized bubbles, our digital traces endlessly segmented, made void of real worldly relation. The self is doubled into metrics to be incessantly gamified and optimized, residual facets of human essence reduced to inputs constantly craving feedback loops of validation. We become strangers even unto ourselves, our sense of identity increasingly mediated through the platform's coded gaze.

It is important to note that social media's impact is not solely negative. Platforms have also been used for collective action, social movements, and fostering genuine connections (Tufekci, 2017). The aim is not to paint a one-sided picture, but rather to critically examine the specific ways in which social media's algorithmic design can nurture microfascist desires, particularly among lay users who may not be as savvy in navigating these digital landscapes.

The very mechanics of algorithmic feeds enshrine conformity as a prerequisite for visibility and ephemeral belonging. To pierce through the content avalanche, we must model the types of posts, emotions, and perspectives that trigger the highest engagement within our isolated silo. Divergence from these programmed trajectories of predictive modeling relegates us to silence and obscurity. Arendt recognized such stifled pluralism as the precondition for totalitarian domination. In this way, social media's fundamental operating architecture conditions a modern reformulation of loneliness primed for microfascist control - an algorithmically-induced self-alienation bombarded with individualized media injecting normative currents, yet bereft of the public spaces that could counterbalance this descent into solipsistic performance for an audience of code and quantified selves.

It is important to explicate the connection between microfascist desire and social media. Sideeq Mohammed (2020) has explored this in a fascinating article that links microfascism to the emerging

genre of works created by management guru genre. In this text he argues that "fascism is not only an organized political philosophy but a stifling of thought, of otherness, of difference; an aggregate destructive yearning for power here understood as manifested in the profound desire for and proliferation of homogeneity, uniformity, and control," (2020, 6). While he argues that management gurus design simple rules to follow to achieve desired outcomes ("the four-hour work week!"), we can see how a very similar logic operates through social platforms. If the goal is to have one's posts seen by others, then one must conform to the algorithm. What this conformity entails is, of course, always shifting. Facebook's algorithm, for example, has at times emphasized the inclusion of photos in a post before later shifting to videos hosted directly by Facebook, rather than linked through another platform. Brent Adkins explains how continuously changing layers of algorithmic rules can connect to fascism:

> Here [referencing a cancerous body without organs] we can imagine an organization that continuously spawns new layers of management that increasingly micro-manage every situation. Or, on a smaller scale we can image a person constantly generating new rules to live by, rules of conduct, driving, diet, that stratify life to an ever-greater degree. The danger here is that we give the fascist inside us the power to increasingly organ-ize our lives. (2015, 106)

This proliferation of ever-spiralling rules is cancerous because it consumes everything else. Rather than following a new line of flight that emerges out of moments of subjectivation, these layers of rules foreclose those possibilities, sticking them within a closed loop. For social media platforms, the ever-evolving algorithm takes on the role of these new rules to live by—for one's account to continue to get views and reactions, they must make sure they stay abreast of the latest trends being emphasized by the algorithm. As an example, this might mean creating content that makes use of the currently trending sound clip, so it is more likely to show up in people's feeds. This algorithmic conformity, as explored by Adkins (2015), creates a loop in which it is at least significantly harder, though not impossible, to follow new lines of flight. But more importantly, this capitulation to the algorithm nurtures the fascist in inside us that craves this conformity. Follow the algorithm, create new content, pitch products through affiliate partnerships, and consume more and more. This process is deeply intertwined with issues of digital labor, commodification, and neoliberal logic that pervades social media platforms (Duffy, 2017; Srnicek, 2017). Feel rage at the fascism you see in the news headlines on your feeds but go no further than the headlines. Laugh at the cat meme. Buy a "smash fascism" mug on Etsy that features a cat image. Scroll more. Scroll more. More. Let the algorithm guide and manage you as the hours slip by. Fall asleep with the phone in your hands. "Technocratic fascism assembles, negotiates the relations between interests and desires at a small scale, in a much more subtle way… Manipulated as they are by the *mass media*, people stick to the right path all by themselves," (Guattari, 2016, 89). Wake up. Scroll. Consume.

We can understand this process even better through Deleuze and Guattari's concept of binary segmentation[4]:

> Ultimately, their goal is to give a new account of fascism. Binary segmentation functions on the basis of a series of exclusive disjunctions. It is a flow chart that assigns us a discrete position in relation to other discrete positions. Are you male or female? Are you rich or poor? Are you an adult or a child? Are you straight or gay? The middle term is always excluded. There is always a price to be paid for deviance. Circular segmentation organizes

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[4] A process of dividing and categorizing individuals and groups based on rigid either/or distinctions.

us according to ever-larger circles of engagement. There is a private circle, a familial circle, a social circle, a community circle, a national circle, and a global circle. (Adkins, 2015, 128–129)

In this description of segmentation, we can already see echoes of how social media platforms filter us into bubbles and serve ads based on these segmentations. The short-lived Google+ used a circle model that nearly mimics this: "Most people begin their Google+ Circle usage by setting up Circles around relationships and interests. You might have a 'Friends' or 'Family' circle, and other circles for different hobbies and topics you're interested in," (Allton, 2013). All social networks segment like this, Google+ just happened to be a bit more explicit about this and give users more control. This segmentation along molecular lines could potentially introduce new lines of flight, but also features dangers. At one extreme, this can lead to microfascisms arising through resonances, while at the other extreme: "Instead of the great paranoid fear, we are trapped in a thousand little monomanias, self-evident truths, and clarities that gush from every black hole," (Deleuze & Guattari, 1980, 228). Mircrofascism and monomania[5] lurk around every corner of social media.

Toward a Micro-antifascist Social Media

Imagining social media that takes a micro-antifascist approach will require thinking about this from both the level of content and the platform design. Ultimately, these two approaches must converge, as both are needed if any success will be possible. Thus far, existing work has approached this question of microfascism almost exclusively through the lens of content, which is absolutely necessary, but not sufficient. So how can we move forward? It may be helpful to start with a warning from Guattari:

One must not forget, of course, that all left-wing organizations had already been destroyed in Italy and Germany—but why should they all have collapsed like card-houses? They had never presented the people with any real alternative—certainly not with anything that mobilized their will to fight or their force of desire, anything that even tempted them away from the religion of fascism. (1977, 226)

This alternative is of vital importance. To take a pressing contemporary example, many have argued that it is a lack of a vision of something to build *toward* that contributed to Russia's collapse into Vladimir Putin's fascism after the end of the Soviet Union. In *The Invention of Russia*, Arkady Ostrovsky argues that, "If you have no real vision for the future, nostalgia for an idealized past is more appealing than the reality of the present," (2017, xx). This is the trap of social media – because of algorithms, hate and disinformation spread faster than affects of joy (Vosoughi et al., 2018). We see these same affects with Donald Trump in the U.S.—a nostalgia for an imagined better past and the joy of simply spreading hate toward others. Jack Bratich has explored this in detail in *On Microfascism*:

Within digital culture, microfascist subjectivity is performed as freedom, irony, and fun transgression. The network plays a key role not just through education and information, but by initiating others and creating a (de)sensibility. This subject forms a body that is sealed, armored, and numbed in order to act against others. (Bratich, 2022, loc. 1162)

The irony and fun transgression–the "I was just joking" approach–is combined with training in tactics that were used by elite spies only a generation ago. In *This Is Not Propaganda*, for example,

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[5] A pathological obsession with a single idea or subject

Peter Pomerantsev explains how far-right forums train users in "how to use the values of your enemies against them," and how to crack consensus using fake personas arguing opposing views (Pomerantsev, 2019, 159–160). But even more than that, the far-right has gotten extremely sophisticated at digital storytelling. The *Reply-All* podcast explored how QAnon uses methods like random information drops, cliff-hangers, and encouraging the sharing of individual interpretations of information as a way to engage their audience (Vogt, 2020). In many ways, they are doing some of the best and most sophisticated storytelling on the internet, at least in terms of the methods. It can be difficult not to be taken in by this approach, especially if one is not aware of it at a theoretical level.

Our current approaches to media literacy in the U.S. focus rather narrowly on the skill of identifying bias, which largely makes students untrustworthy of all information sources and leads to paranoia if they don't also have detailed instruction in how social media platforms work (boyd, 2018; Carrigan & Sylvia IV, 2022). Putin's troll factories have easily appropriated this post-truth narrative, encouraging others to question everything and mixing in memes and humor as part of their disinformation warfare (Sylvia IV & Moody, 2019). BreadTube, a group of loosely affiliated leftist YouTubers, has tried to appropriate the algorithmic methods of cultural production mastered by the right to attempt to spread more leftist ideals (Sylvia IV & Moody, 2022). However, this approach has led to significant in-fighting, with many of the channels closing amid conflict. Using the same tools in the same way, even when aiming toward a different ideological goal, still leads to the same outcome. Following the algorithmic rules nurtures our inner fascist.

A micro-antifascist approach will ultimately require a social media platform that allows a constructive approach to offering an alternative to fascism. Being antifascist cannot only mean being *anti* – there must be an affirmative and joyful alternative that is co-constructed. Bratich notes something like this in his recommended strategy:

> Information-based antifascism has a role to play but it reduces "platforms" to message delivery devices. Micro-antifascism is less interested in epistemological claims and speech statements and more on the shaping of reality through memory and myth, initiation rites, mobilizations of desire, self-sealing subjectivities, desensitized bodies, and affective investments. The cultural sphere, as the production of subjectivity with all the ways we have been examining here, attunes itself to something more subtle, such as affects and other micrological interactions. Micro-antifascism deprives microfascism of the conditions of becoming compositionally activated. (2022, loc. 3,362)

This is certainly on the right track, but many of Bratich's suggestions remain at the level of rhetoric – the use of squads wielding humor, for example. These are mostly focused on ways to counter fascist communication.

What must be combined with this approach is adjusting existing platforms or creating new ones that are micro-antifascist by design. For this we should consider an informational ontology[6] approach. Spinoza's philosophy suggests that an individual's capacity to act is influenced by the stability of their environment, such as a city (Sylvia IV, 2022). A city's identity emerges from the collective minds within it, including non-human ones. It functions as a large composite being whose actions are shaped by the emotions and interactions of its members. This concept relates closely to Spinoza's idea of "transindividuals," which are entities that exist within a network of relationships

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[6] An ontological framework that emphasizes the primacy of information and its processes in the constitution of reality.

and are constantly evolving through the exchange of influences. Spinoza's concept of an affect refers to the impact of interactions between entities, which alter their state of being. His ontological framework, which deals with change and interaction within a collective context, prefigures the informational ontology that Simondon would later develop. Spinoza also considers the political dimensions of this ontology, an aspect with which Simondon does not extensively engage.

Later philosophers, such as Deleuze, Guattari, and especially Rosi Braidotti, expand upon these ideas, linking Spinoza's ethical and political insights to the philosophical discourse on ontology in the context of technology and society. Rather than thinking about this from the level of the city, we can instead analyze it at the level of social media platforms. I argue that the synthesis of Spinoza with Deleuze and Simondon forms a comprehensive monistic ontology that not only grasps the essence of being in a technological era but also addresses the ethical and political ramifications inherent in such a worldview. For Guattari, this further means that we must leave the realm of the discursive regime and consider affect and a-signifying enunciations – or rather, micropolitics (1989a, 2015).

Spinozan ethics argue for the need of joyful affects through increased connections, but unfortunately give us very little guidance in how to do that. This is largely because there can never be a single correct answer, these connections require constant experimentation. It is in this spirit of experimentation that I offer ideas for experimenting with platform design, rather than definitive solutions. Some of these recommendations are already being tried by various platforms, but no single approach will make enough impact on its own – we need further experiments that offer different combinations of these suggestions.

Nonprofit: Suely Rolnik (2018) has argued that the colonial-capitalist regime micropolitically pimps out our life. We must find sustainable alternatives to social media that aren't fully entrenched in these capitalistic frameworks. This is a core requirement and must be combined with any other experimental approaches. This could take multiple forms, such as donation based federated servers run by volunteers or government funded digital public infrastructures (see below).

Remove algorithms: On one hand, this seems like the easiest and more obvious change, but it has proved controversial. Users have very mixed feelings about whether they like algorithmic as opposed to chronological social media feeds, and shifting to chronological feeds means people spend less time on a platform (Sunstein & Reisch, 2023). This could potentially drive users to other platforms that use algorithms. The Mastodon platform currently only has chronological feeds, but this has been a barrier to entry for many users who sign up and then are faced with nearly empty timelines that are rarely updated. Some have argued that rather than removing algorithms, an important step could be exploring new and more transparent ways of designing algorithms that are biased toward something other than engagement for profit (Ovadya, 2022). Another alternative could be finding new methods of engagement for platforms without algorithms. This might include better guidance for new users in building their timeline (by using lists, to give one example) or engaging them with groups or communities that offer a different form of engagement from the standard timeline. This can be envisioned as a path away from connecting individuals and toward connecting groups. Removing or significantly altering algorithms would go a long way toward preventing the microfascist joy of conformity and control.

Remove favorite and comment counts: In much the same way as users attempt to create content in a way that allows their content to be algorithmically spread, measuring interaction on content through analytics offers a similar path to normalization. The dopamine hit users get with every new

"like" reinforces a particular type of posting as a way to chase future likes. These are relatively new features in the history of social media and do not inherently need to be a part of the experience. Instagram has made efforts to hide like counts on posts, but this feature is optional and can be turned on and off by users (Warren, 2021).

Community Governance: One of the challenges in combating fascism is that even many of those who live in democratic societies feel quite removed from the process of governance, which can lead to hopelessness or apathy. But building social networks that are designed to require community governance can subjectify users in new ways, by letting them experience the messy complexity of governance themselves. Nathan Schneider (2024) has advocated widely for this approach and offers strong suggestions for how to go about this that include ideas like elections for group chat leaders and juries for controversial posts. It also matches community-engaged teaching practices which require students to mediate conversations that allow for civic approaches to complex societal issues rather than trying to determine a correct answer or single truth (Sylvia IV, 2021a).

Digital Public Infrastructure: Scholars like Ethan Zuckerman (2020) have argued that much like roads and water are key aspects of public infrastructure, social media platforms might benefit from an approach in which governmental agencies offer these services as a form of infrastructure. One benefit is that these could be scaled to community levels – each city or even neighborhood might have a public social media platform for its local users to access, just like they do the local library, for example. Importantly, these would be designed in ways that encourage civic engagement as opposed to the sale of ads.

Inclusivity and Diversity: Platforms can be built with features that nudge users toward greater inclusivity. There is a significant room for exploration of best practices in this area, but one small example would be requiring alternative text for images that can be used by a screen reader for those who cannot see an image. If a post features an image that doesn't have this alternative text included, the post button could simply be disabled. To take another example, drawing on a community moderated database, sentiment analysis might flag potentially biased language before it is posted, as a warning to the user, with a notification that will it be submitted to the community moderation queue if submitted as is. Diverse approaches might mean intentionally popping filter bubbles. This could take the form of something like Twitter's community notes, or even a feature that inserts opposing views for controversial posts. There have been experiments in this direction with features like the *Wall Street Journal's* Red Feed Blue Feed project (Keegan, 2019).

Beyond the Human: Censors and other forms of automated reporting could be used to create social media accounts for aspects of the world beyond the human. Perhaps you can follow your neighborhood park to get updates about current pollution levels or your local pond to get regular reminders of the water conditions. Moving up to further ecological levels might mean each user is given an ecological budget that considers things like energy use, allowing them to use the site for only so long each day or week.

Emphasizing Imagined Futures: Bringing together function and content, we might completely re-envision the traditional social media approach in which one user authors individual posts. How might we integrate this with more collaborative approaches? What would a social media platform look like if it featured spaces, groups, or pages that could be collaboratively edited, much like Wikipedia or even Google Docs? Let us explore how these spaces might allow us to think and tell stories collectively, while developing positive visions of our collective future?

Importantly, **t**hese changes are meant instead to impact how we engage with platforms through their design. Further, the suggestions shared here begin to build on efforts and ideas that are in some cases already under way. It will be necessary however, to combine these approaches and continue generating new experiments.

Conclusion

In conclusion, this paper has illuminated the insidious ways in which social media platforms, through their algorithmic imperatives, engender and capitalize on microfascist desires, steering users towards uniformity and control. It advocates a reimagining of these digital spaces, drawing from posthuman media studies to foster an ethical restructuring that honors diversity and nurtures anti-fascist modes of being. By challenging the prevailing architectures of desire that shape our digital interactions, we open avenues for a radical reconstitution of social media as sites of resistance and emancipation. This work serves as a clarion call for ongoing vigilance and critical engagement with our mediated environments, urging a collective endeavor towards platforms that not only resist fascist impulses but also celebrate the cacophony of democratic life and the generative potential of diverse subjectivities. It posits a future where digital spaces empower users to co-create a multiplicity of narratives, fostering a vibrant tapestry of connections that resist the seduction of uniformity and control, and instead, thrive on the chaotic beauty of unfettered, posthuman expression.

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Towards a Posthumanist Critique of Large Language Models

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Abstract

This article develops a critique of large language models (LLMs) from a posthumanist perspective. The first part focuses on Emily Bender's critique of LLMs in order to highlight how its conceptual and political axioms have informed recent critiques of ChatGPT. We make a case that this anthropocentric perspective remains insufficient for adequately grasping its conceptual and political consequences. In the second part of the article, we address these shortcomings by proposing a posthumanist critique of LLMs. To formulate this critique, we begin by drawing on Eric Hörl's contention that the age of digitalization (what he calls "cybernetization") demands a radical redefinition of the concept of "critique" (Hörl et al., 2021, 7). Relying on Hörl's intervention, we then gradually develop a posthumanist framework by grounding it in four interlinked concepts: general ecology, machinic agency, machinic surplus value, and cosmotechnics. After advancing the said theoretical framework, our conclusion mobilises it to outline a posthumanist critique of LLMs.

***Keywords:** Critical Posthumanism; Machinic Agency; Large Language Models; Anthropocentrism; General Ecology*

Introduction

Since its public release in November 2022, *ChatGPT* has triggered a significant amount of both enthusiastic and critical responses. A substantial part of the critical responses focuses on the disruptive effects that this technology is having on existing practices (e.g., education, journalism, creative labour, computer programming, etc.). Other responses focus on the economic and environmental toll that this technology might entail. Finally, more conceptual critiques highlight the philosophical, societal, and ethical implications of large language models being used in a systematic and widespread manner.[3] Yet, it is important to note that the systematic critique of large language models (LLMs) precedes the release of *ChatGPT* and the current hype around "generative AI".

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[3] In this third group we find a range of arguments. Some authors criticize *ChatGPT* for its inability to infer causal explanations (Chomsky et al., 2023; Chiang, 2023). These authors stress that *ChatGPT* is limited to identifying statistical correlations between words, and incapable of abstracting from them any kind of causal laws or principles (like, e.g., the basic principles of algebra). Other critiques have been levelled against *ChatGPT* for its inability for critical and contextual thinking, but also for its lack of moral thinking (Chomsky et al., 2023). The latter is a matter of the capacity to constrain "the otherwise limitless creativity of our minds with a set of ethical principles that determines what ought and ought not to be" (Chomsky et al., 2023). There are also critiques that highlight that LLMs "black-box" their training data (Burgess, 2023); that they reproduce socio-political biases (Bender et al., 2021; Motoki et al., 2024); disseminate misinformation (Bell, 2023; Bridle, 2023; De Angelis et al., 2023; Hsu and Thompson, 2023); or on account of their "hallucinations", the non-sensical or counterfactual statements that *ChatGPT* and other LLMs occasionally produce (Chiang, 2023; Emsley, 2023; Metz, 2023). Finally, large language models have been also criticized for their huge environmental costs (Bender et al., 2021; Bridle, 2023), the precarious ghost labour behind their training process (Perrigo, 2023), and the appropriation of collectively produced (and likely copyrighted) texts for its training purposes (Bode and Goodlad, 2023).

Several of the concerns outlined above have been most notably discussed by computational linguist Emily Bender (2022; 2024; Bender and Koller, 2020; Bender et al., 2021). For Bender, the most prominent risk posed by LLMs stems from our tendency to anthropomorphise their ability to process natural language. While LLMs are mere probabilistic machines without access to "meaning", she observes that we tend to imagine a mind behind their output and, thus, treat this output as "meaningful". By anthropomorphising LLMs, Bender (2024) suggests, we risk "dehumanising" our particular relation to language and, with it, undermining human politics and ethics. To avoid this, the line that separates human from machine language must be alertly policed. As we show below, Bender's anthropocentric position informs many of the recent critical responses to LLMs, in particular since the release of *ChatGPT* (Chomsky et al., 2023; Bridle, 2023; Chiang, 2023; Gupta et al., 2024; Metz, 2023; Weil, 2023).

Building on critical engagement with Bender's work, this article argues that most of these recent critiques presuppose conceptual and political axioms that (sometimes inadvertently) reinforce an anthropocentric understanding of LLMs. We make a case that this anthropocentric perspective, which frames human-technology interactions as instrumental relations between autonomous subjects and essentially passive and unintelligent technologies, remains insufficient for adequately grasping its conceptual and political consequences. We address these shortcomings by proposing a posthumanist critique of LLMs. In line with the critical posthumanist approach proposed by Sylvia IV (2021), our critique proceeds by shifting focus from human subjects understood as stable, unified and self-determined, to wider socio-technical systems that constantly (re)produce these subjects. To formulate this critique we begin by drawing on Eric Hörl's contention that the age of digitalization (what he calls "cybernetization") demands a radical redefinition of the concept of "critique" (Hörl et al., 2021, 7). Relying on Hörl's intervention, we then gradually develop a posthumanist framework by grounding it in four interlinked concepts: general ecology, machinic agency, machinic surplus value, and cosmotechnics.[4] After advancing the said theoretical framework, our conclusion mobilises it to outline a posthumanist critique of LLMs.

Anthropocentric critiques of anthropomorphised technologies

Warnings about the detrimental effects of anthropomorphising the output of statistical machines issued by Bender echo in recent critiques of LLMs. Still, concerns that draw attention to the distinction between human understanding and the ways in which machines process language have been raised before. An early version of this critique can be traced back to John Searle's (1980) famous "Chinese Room" experiment. Searle imagined an English speaker being placed in a room and provided with a set of instructions (in English) detailing how to process Chinese symbols written on cards and produce appropriate responses based on those symbols. When prompted with Chinese utterances, this person can produce coherent answers even though they do not understand Chinese. With this thought experiment, Searle sought to challenge the claim that computers exhibit true human-like intelligence and understanding. In his view, computers can produce seemingly meaningful statements and create an impression of understanding, but they do so only by blindly manipulating symbols.[5]

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[4] We define "posthumanist framework" in a twofold sense: a) by following Hörl's (2021) call for a radical redefinition of critique in the current context of digitalisation; and b) as "critical posthumanism", a "theoretical approach" developed by authors such as Rosi Braidotti and Katherine Hayles aimed at the "deconstruction of humanism" (Herbrechter, 2018, 94).

[5] Searle (1980) distinguishes between a "syntactic" and a "semantic" relation to language. According to him, when computers are trained to perform the former, we can speak of "weak AI". Only in an eventual scenario in which computers were able to establish a semantic relation to language could we speak of a "strong AI", or "human-like intelligence".

Unlike Searle, whose critique of computer simulation is grounded in analytic philosophy, Bender advances her analogous critique of LLMs from the perspective of computational linguistics. Together with other scholars (Bender and Koller, 2020; Bender et al., 2021), she suggests that LLMs are nothing more than "stochastic parrots" as they operate by means of probabilistic mimicking of previously existing texts. Bender's argument is based on establishing a distinction between linguistic form and meaning (2020, 5186). While Bender takes linguistic form to be any symbolic manifestation of language, be it "marks on a page, pixels or bytes in a digital representation of text, or movements of the articulators", she defines meaning as a relation between linguistic form and the communicative intent of a speaker (2020, 5186-7). For her, understanding the meaning of language corresponds to grasping the communicative intent behind the linguistic form, which is achieved by connecting the latter to "objects outside of language", that is, to "the speakers' actual (physical, social, and mental) world" (Bender and Koller, 2020, 5188). Since language models do not have access to these external referents, but are instead trained on, and operate with, exclusively linguistic form, they are incapable of relating linguistic signs to their referents, which is in Bender's view the very connection that constitutes meaning.

Bender thus sees LLMs as probabilistic machines that mindlessly produce texts by rearranging their training data. Still, the main issue for her is that we tend to interpret these texts as though there was a communicative intent behind them. Due to the perceived fluency and coherence of these texts, we habitually consider their conventional meaning and their context to construct the mental state of an interlocutor (their thoughts, intentions, credibility).[6] Put differently, by interpreting LLMs' responses as if they were human or human-like Bender suggests that we anthropomorphize them. This habitual tendency, coupled with the chatbot's design that deliberately encourages it by mimicking humans (Bender in Weil, 2023), bring about different forms of risks and dangers (Bender et al., 2021). At the more extreme end, Bender warns that anthropomorphising LLMs can lead to the dehumanization of humans (Bender, 2024). She defines this dehumanization as "(a) the cognitive state of failing to perceive another human as fully human, (b) an act that expresses that cognitive state […], or (c) the experience of being subjected to an act that expresses a lack of perception of one's humanity and/or denies human experience or human rights, or combinations thereof" (Bender, 2024, 115). While Bender is critical of our tendency to anthropomorphise LLMs, her critique ultimately aims at reinforcing the boundary between humans and machines. In her view, this boundary needs to be policed to ensure that politics do not become pure technical calculation and that humans do not end up being denied their "human experience or human rights".[7]

Bender's claim that LLMs are incapable of grasping the meaning of language is echoed by a series of recent critiques of LLMs, particularly of OpenAI's *ChatGPT*. James Bridle (2023), for instance, sees *ChatGPT* as "inherently stupid" and actively dangerous. Like Bender, Bridle grounds his claims about LLMs' stupidity in its inability to connect words to their reality. He proposes that *ChatGPT* "has read most of the internet, and it knows what human language is supposed to sound like, but it has no relation to reality whatsoever" (2023). Since it is capable of creating the appearance of meaning, Bridle fears that it will be taken as a reliable source of information. Comparable claims about *ChatGPT*'s stupidity are made by Ian Bogost (2023). In his view,

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[6] Similarly, Gupta et al. (2024) suggest that the metaphors we use in relation to ChatGPT can also contribute to its anthropomorphizing.
[7] Bender (2024) identifies six ways in which this dehumanization can take place: a) using computational metaphors that equate the brain with a computer and a computer with the brain; b) digital physiognomy; c) ignoring the human (hidden)labour behind AI; d) the belief that datasets are "representative"; e) the "irrelationality" of AI models; f) and the reinforcement of the "white racial frame".

> *ChatGPT* lacks the ability to truly understand the complexity of human language and conversation. It is simply trained to generate words based on a given input, but it does not have the ability to truly comprehend the meaning behind those words.

In line with Bender and Bridle, Bogost emphasizes the probabilistic nature of texts generated by *ChatGPT*. Since the chatbot has no access to the embodied referents of language, he observes that the generated utterances lack in depth and insight. Corresponding limitations of *ChatGPT*, when compared to a human mind, are glossed by Chomsky et al. (2023) and Ted Chiang (2023). While the former argue that LLMs "differ profoundly from how humans use reason and language", the latter differentiates between the lossless compression of human understanding and the lossy text-compression performed by *ChatGPT*.

According to some (Coeckelbergh and Gunkel, 2023; Tufecki, 2022), the argument made by Bender and others can be traced all the way back to Plato's *Phaedrus*. There Plato condemns the sophistic practice of teaching with the aid of writing. For him, learning from written texts (as opposed to *via* dialogues with a teacher) produces false knowledge, "the conceit of wisdom" (Plato, 1997, 157). This false wisdom corresponds to abstract, non-assimilated knowledge. "By telling them of many things without teaching them", suggests Plato (1997, 157), writing "will make [students] seem to know much, while for the most part they know nothing". In his view, the knowledge contained in, and disseminated by, the written word is deceptive as it is not substantiated by lived experience. Plato adds that written texts "seem to talk to you as though they were intelligent, but if you ask them anything about what they say, […] they go on telling you just the same thing for ever" (1997, 158). To the mute symbols on a page and the defective ideas they engender, Plato (1997, 159) opposes knowledge that "is written in the soul of the learner" and is transmitted by means of living speech. "It is speech", suggest Coeckelbergh and Gunkel (2023),

> and its connection to the living voice of the speaker—the embodied human being who lives in the world and know what it is they speak about—that authorizes and guarantees the truth of what is said. Speech has a direct and intimate connection to the real.

Unlike the written texts condemned by Plato, LLMs do have the ability to "respond". At the same time, however, it can be said that the logic of Plato's critique of writing is still aligned with the critique of LLMs articulated by Bender and others. Firstly, both critiques are grounded in the distinction between mere symbols on the one hand, and the immediacy of the living voice and embodied experience on the other. Moreover, they both define the former as inferior to the latter. This hierarchical distinction between the embodied mind (and speech as its pure and immediate expression) as the privileged site for accessing meaning and writing as its derivative technological representation is what Jacques Derrida (1976) refers to as "logocentrism". For him, logocentrism is in fact a tendency that underlies the entire tradition of Western science and philosophy.

Derrida (1976) famously deconstructs the hierarchical binary that grounds logocentrism. In short, he argues that writing is not merely an artificial and corrupting supplement that is secondary to speech. Instead, Derrida suggests that writing is what shapes the subjectivity of a speaker in the first place. Thus, writing not only precedes living speech, but actually makes it possible. Derrida's critique of logocentrism is further developed by Bernard Stiegler (1998), who extends this critique from writing to technology in general. According to Stiegler, human subjects are characterized by "originary technicity" (1998): we are not autonomous agents fully in control of our external technological prostheses, but instead animals that have invented ourselves as humans only through the use of technologies. If writing does not merely exteriorize our pre-existing thoughts but is a

condition of possibility for their constitution, the same constitutive relation applies to every other technology that we interact with as they too, for better or worse, shape our sensory, cognitive, and affective capacities.

Coeckelbergh and Gunkel (2023) suggest that the critique of logocentrism has significant consequences for understanding LLMs. In particular, they claim that this critique "undermines the very notions of authority, authorship, and responsibility" (Coeckelbergh and Gunkel, 2023). If human subjects are constituted and shaped by their interaction with technology, the idea of an autonomous author, who is the sole source of their words, and can be held responsible for them, is no longer tenable. Instead, authorship becomes distributed between humans and non-humans, who can be said to co-produce textual outputs.

This critique of the anthropocentrism of Bender's approach is also advanced by N. Katherine Hayles (2022). She draws attention to its anthropocentric bias and suggests that the claim that LLMs are nothing but a stochastic parrot requires "an implicit assumption that human cognition is the only cognition that really counts" (2022, 652). Unlike Bender, who sees humans alone as capable of using language and thinking, Hayles maintains that "parrots—like all life forms—also have cognitive capabilities, as do large language models such as GPT-3" (2022, 652-3). Instead of dismissing LLMs as mindless and incapable of adequately possessing language, Hayles (2022, 647) seeks to understand their non-human intelligence by reconstructing what constitutes its 'umwelt' (its algorithmic architecture, training input, functioning, etc.).[8]

Another critique of Bender's anthropocentricism is articulated by Tobias Rees (2022), who historicizes the concept of meaning. While Bender presents her definition of meaning as universal, timeless, and hence inevitable, Rees situates it in a specific epistemic paradigm that first emerged in the early twentieth century. In the wake of enlightenment and industrial revolution, and the rise of science and individuality, this paradigm sees language as the human ability to assign and navigate meaning in a meaningless world. According to Rees, the rise of LLMs disrupts this current epistemic paradigm and allows us to formulate more productive ways of thinking about language and intelligence, and the relation between humans and machines.[9] In his view, this is possible as the emergence of LLMs provides us with a practical embodiment of a structuralist theory of language (as advanced by de Saussure, and further developed by others), which frames it as a combinatorial system that functions independently of (the communicative intent of) human subjects. "The power of this new concept of language that emerges from GPT-3", writes Rees (2022, 180), "is that it disrupts human exceptionalism". It does so by undermining the idea of language (but also of thought and intelligence) as something exclusive to humans and makes way for extending them to the domain of animals, microbes, and machines. From the perspective of this developing epistemic paradigm, human intelligence would differ from the intelligence of the latter only in degree, and not in kind. Following these critiques of the anthropocentrism of Bender's framework, the remainder of this article is aimed at setting the ground for a posthumanist critique of LLMs.

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[8] By focusing on the "umwelt" of LLMs, their world-horizon, Hayles (2022; 2023) seeks to investigate the interactions between the components that shape and enable this "non-human intelligence". As it zooms in on the enabling (and disabling) connections that constitute LLMs' ecology, her approach is similar to the posthumanist approach that we propose in this article. In fact, one important link between Hayles' approach and some of the Deleuzian concepts deployed below can be found in the notion of umwelt developed by Jakob von Uexküll (see Deleuze, 1988).

[9] Similarly, Weatherby and Justie (2022) argue that we require a new theory of signs in order to fully grasp LLMs. They call this an "indexical" understanding of AI and distinguish it from the more traditional understanding of AI (which they call "symbolic"). From the perspective of Weatherby and Justie, it could be argued that Bender's critique of LLMs reproduces a symbolic notion of language.

Towards a posthumanist critique of digital technologies

To move towards a posthumanist critique of LLMs we follow Eric Hörl's suggestion that the current context of digitalisation demands a radical shift in "the meaning of critique" (Hörl et al., 2021, 7). This shift entails a twofold redefinition of the notion of critique. The first part of this redefinition concerns critique in a Kantian sense: the analysis of the conditions of possibility of a given phenomenon ("transcendental critique"). For Kant, the object of critique is the "transcendental subject", locus of all legitimate knowledge and experience (Hörl et al., 2021, 9). The general process of digitalisation, Hörl et al. (2021, 9) argue, has decentred the "transcendental subject" as the "central actor" and replaced it with the notion of the "environment". As we show in the following subsection, environment for Hörl does not refer to the "natural environment" (a concept that still requires the anthropocentric opposition between nature and culture), but rather to the result of a process of "environmentalization" which blurs the culture-nature-technics divide that is characteristic of modern critique.

The second part of the redefinition of critique refers to critique as a practice (an "ethos" or "attitude") characteristic of modernity. The central question posed by this second form of critique has been the following: what are the "structures" through which a given phenomenon appears as if it were "universal and necessary"? (Hörl et al., 2021, 7). Conversely, Hörl suggests that the key question any "critical project" should ask today is this: to what extent does the passage from the "transcendental subject" to "environmentality" as the condition of possibility of knowledge and experience demand new concepts to analyse the reproduction of power relations in the contemporary world?

According to Hörl et al. (2021, 8), the current context of digitalisation confronts us with the task of an "urgent reproblematization of critique under the conditions of digitality", which requires reformulating the concept of critique in relation to these two aspects. In what follows we present four concepts that, we claim, are instrumental in formulating this reproblematization of critique in the current conditions of digitalisation. In doing so we seek to shift the critique of LLMs from an anthropocentric framework (as adopted by Bender and others) towards a posthumanist and post-anthropocentric one.

A. General Ecology

In recent years several authors have raised the issue of the environmental footprint of machine learning (Bender et al., 2021; Crawford, 2021; Hao, 2019; Kanungo, 2023; Ligozat et al., 2022; Perucica and Andjelkovic, 2022; Valdivia, 2022). These critiques often highlight the high energy consumption of training processes, the powering and cooling of data storage for training datasets, the negative impact of the mining industry required for the production of the digital components, and the digital waste produced by increased demand for faster processes and larger storage. Most of these critiques, however, reproduce anthropocentric notions of environment and ecology that continue to oppose nature to culture. As such, these arguments are insufficient for a posthumanist critique of these technologies.[10] Following Eric Hörl, we argue that the concept of "general ecology" (2013; 2017; 2021) offers a key starting point for a post-anthropocentric critique of LLMs that goes beyond the traditional dichotomy between nature and culture.

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[10] Coeckelbergh (2022) explores a potential "posthumanist" critique of AI by focusing on "environmental politics". Still, his analysis does not seem to move beyond a definition of ecology grounded in the nature-culture divide.

The "general ecology", Hörl tells us, is a new "image of thought", a new "historical semantics", which is "critical of all anthropocentrism" (2017). This new image of thought describes the world from the perspective of a "radical relation" (a "machinic collaboration") between "human and nonhuman agents and forces" (Hörl, 2018, 174). As such, the "general ecology" emerges as a response to the changes brought forward by the growing digitalisation (or "cybernetization") of society since the 1950s. In consequence, Hörl (2018, 174) argues, the general ecology is a central concept for understanding "our posthuman situation".[11]

The concept of general ecology involves both a proliferation and a redefinition of the concept of ecology (Hörl, 2017).[12] In this sense, it puts forth a "denaturalisation" of the concept of ecology, an "undoing of the sutures" that link this concept to an anthropocentric definition of nature (2017, 2). Hörl speaks of the current context of digitalisation as a process of "cybernetization". He argues that this new historical semantics began with Cybernetic Theory. As such, the concept of general ecology results from a project of "regulation and control" (2017, 3). After cybernetics, he contends, a serious "revaluation of the sense of ecology" is needed (2013, 128). Hence, instead of speaking of a "human condition" that establishes a sharp separation between humans, nature, and technics, Hörl invites us to speak of a "techno-ecological condition" (2017, 2), in which digital technologies are redefining the boundaries between these three domains.

Hörl suggests that the concept of general ecology responds to a broader turn in theory that can be referred to as the "relational turn" (2017, 6). The relational turn, he tells us, defines relations as "something that precedes the forming of [its] terms (subject, object, individual, groups, indeed all forms of collective human and non-human agents)" (Hörl, 2013, 122). This means that the mediation between an organism and its environment precedes the constitution of the organism and the environment as separate entities. Significantly, the relationality entailed in the general ecology exceeds the domain of human (social) relations and "designates the collaboration of human and nonhuman agents" (2017, 3).

One of Hörl's main contributions towards a critique of "our posthuman situation" has been introducing the concept of "Environmentality" (2017). If the general ecology refers to our new episteme, the new "historical semantics" of our digital age, then Environmentality refers to the changes in the technologies of power that underlie this epistemic transformation. The term Environmentality is deployed as an expansion of Foucault's concept of Governmentality (Foucault, 2009; Hörl, 2018, 175; Hörl, 2017, 49 n.19). In this sense, Environmentality refers to a technology of power that does not focus on the individual subject (as disciplinary power did), but on the regulation and control of the relation between environment and organism. Politics is thus reduced to the regulation of cybernetic environments (involving human and non-human elements). Relations become the object of power, leading to a series of new conceptualisation of politics such as "algorithmic governmentality" (Rouvroy and Berns, 2013), "feed-forward" (Hansen, 2015), "machinic enslavement" (Lazzarato 2014), and "modulation" (Cheney-Lippold, 2011). In the following sub-sections, we flesh out Environmentality as a new technology of power by disentangling the issues of agency, value and technics from their modern, anthropocentric, and universalising frameworks.

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[11] Hörl explains the idea of "posthuman situation" by referring to the work of Rosi Braidotti (2013).
[12] Hörl speaks of "a thousand ecologies" as a multiplication of Felix Guattari's (2014) "three ecologies".

B. Machinic Agency

By decentring the transcendental subject as the locus of knowledge and experience and replacing it with the notion of general ecology, the current process of "cybernetization" entails an "explosion of agencies" (Hörl, 2017, 12). This defies the "anthropocentric illusion" characteristic of modernity according to which agency takes places solely on the side of human actors, who use technological means in order to transform nature. The general ecology, instead, acknowledges a proliferation of "environmental agencies" (human and non-human) and thus unveils the "illusionary character of the [human] monopoly on agency" (Hörl, 2017, 12). The proliferation of agencies unleashed by cybernetization corresponds to a series of other approaches to theorising non-human agency, including "agential realism" (Barad, 2007), "material agency" (Bennet, 2009), "deviant agency" (Alaimo, 2010), "distributed agency" (Rammert, 2008), and "environmental agency" (Hansen, 2009).[13] As Marchand (2018, 293) contends, the development of an "expanded notion of agency" capable of accommodating the "multiple non-human 'actants' with whom we share and constitute our common world has become a chief concern among many posthumanist writers".

Within this broad palette of non-human conceptualisations of agency, we argue that the notion of "machinic agency", as conceptualised by Deleuze and Guattari, offers a productive framework for a posthumanist critique of algorithmic technologies. The concept of machinic agency (Markelj and Celis Bueno, 2023) locates agential forces within the productive connections between human and nonhuman entities; it is these affective connections that constitute and exercise their capacities to act. As argued (Markelj and Celis Bueno, 2023), we maintain that the concept of machinic agency is relevant for a critique of contemporary technologies for at least two reasons. First, it allows overcoming the dualism between mechanism and organicism that has informed Western philosophies of technology (Markelj and Celis Bueno, 2023). This is important because this approach breaks away from (a.) the culture-nature divide (that aligns agency with human intentionality); (b.) the nature-technics divide (that aligns agency with living beings); and (c.) the culture-technics divide (that aligns agency with human, non-mechanistic judgment). In this sense, the concept of machinic agency manages not only to blur the distinction between culture, nature, and technics that informs anthropocentrism, but also to bring together the different attempts to conceptualise an expanded (posthumanist) notion of agency mentioned above.

Furthermore, we argue that the notion of machinic agency allows displacing the limits between these three domains while still being able to account for asymmetric relations of power in contemporary capitalism (Markelj and Celis Bueno, 2023). This is an important feature that safeguards the possibility of a critical standpoint. The project of cybernetics, or Environmentality, aims at dissolving the differences between culture, nature, and technics to impose a universal regime of regulation and control based on the relation between organisms and their environments. An approach that blurs these boundaries without accounting for asymmetric power relations risks being complicit with a cybernetic project of total control. Hence, a posthumanist critique of digital technologies must, on the one hand, overcome the anthropocentric definition of agency, but on the other, account for the new power asymmetries that stem from these new forms of control.

C. Machinic Surplus Value

As mentioned above, Hörl defines the second modality of critique as the analysis of the specific structures that, in a given episteme, appear as "universal and necessary" (Hörl et al., 2021, 7). Central

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[13] For an overview of a non-human definition of agency see Marchand (2018).

to Marx's (1976) critique of capitalism is his analysis of the "value form". In the terms laid out by Hörl, Marx's analysis belongs to the modern episteme since it requires a sharp distinction between culture, nature, and technics. According to Marx (1976), only humans produce value. This claim is grounded in a sharp differentiation between the intentionality of human labour, the instinctive character of animal behaviour, and the mechanical rules governing technical objects. As the concept of "value form" seeks to unveil the exploitation of human labour, it is at the core of Marx's critique of capitalism. Yet, according to Hörl (2021), an analysis of contemporary capitalism must go beyond this anthropocentric critique of exploitation. He maintains that critique today must focus on how Environmentality (as a new technology of power) begins to operate as an "apparatus of capture" aimed at the "exploitation of relationality" (Hörl, 2021). Put differently, whereas Marx's anthropocentric framework developed a critique of capitalism based on the exploitation of human labour, a posthumanist critique of capitalism must focus on the exploitation of the relationality that characterises the general ecology (Hörl, 2017, 8). While Marx's notion of the "value form" sums up the former, we believe that Deleuze and Guattari's (1983) concept of "machinic surplus value" better illustrates the latter.

Writing in the early 1970s, Deleuze and Guattari (1983) argue that the growing digitalisation of production is causing a shift from a form of exploitation based on human surplus value towards an exploitation of the relationality between different types of machines (human, biological, social, technical, etc.).[14] In light of this, they claim, the Marxist definition of surplus value "must be modified in terms of the machinic surplus value of constant capital, which distinguishes itself from the human surplus value of variable capital" (1983, 239). This does not mean simply that machines become sources of "human-like" surplus value. Rather, it entails a shift in the conceptualisation of surplus value that resonates with the relational turn characteristic of the "general ecology". What becomes the object of capitalist exploitation is a process of "amplification by connection" (Markelj and Celis Bueno, 2023; see also Pasquinelli, 2015). In the context of Environmentality, capitalism becomes an "apparatus of capture" aimed at the capturing of the relationality between an organism and its environment (Hörl, 2021). As such, power ceases to be associated "with ownership of the means of production" and becomes associated with ownership of means of capturing a relation and modifying it (Hörl, 2021, 120).[15]

D. Cosmotechnics

The concept of general ecology leads also towards a non-modern appreciation of the notion of technology (Hörl, 2017, 3). In this sense, Hörl calls for a "non-modern mapping of Environmentality" (2013, 129) and a "perspectivist" approach to technology (2017, 7). The general ecology entails not only the "historical undoing" of Western anthropocentrism but also opens the door for a "plural techno-ecology" (Hörl, 2017, 12).[16] We propose that this shift can be summed up through Yuk Hui's concept of cosmotechnics.

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[14] For an overview of the concept of "machinic surplus value" in the current context of digitalization see Celis Bueno (2024).

[15] Hörl (2021) links the idea of an apparatus of capture to Zuboff's (2019) notions of "surveillance capitalism" and "behavioural surplus". We prefer Deleuze and Guattari's concept of machinic surplus value, which pushes the anthropocentric agenda much further than Zuboff's critique. To a large extent, Zuboff's critique of surveillance capitalism as the exploitation of behavioural surplus still presupposes the liberal idea of non-mediated form of human agency.

[16] Hörl (2013, 129) speaks of a "non-modern mapping of environmentality", "purely relational systems that appear to act as alternative cartographies for a non-modern reframing of our present and future technological world". These non-modern cartographies work as "metamodels for the urgent cosmo-technological reconceptualization of participation as constitutive relationality and therefore too of agency, relationship and relatedness, experience and subjectivity, all of which we need if we are to understand our no-longer-rejected originary environmental condition in a non-reductionist way" (Hörl 2013, 129).

Hui (2017, 2) contends that technology "is not anthropologically universal; it is enabled and constrained by particular cosmologies, which go beyond mere functionality or utility". This means that we should not think of technology as a single, universal, and homogeneous force, but rather as a field inhabited by "multiple cosmotechnics" (Hui, 2017, 2).[17] Citing Philippe Descola, Hui argues that modernity is characterised by an "opposition between culture and nature, and the former's mastery over the latter" (2017, 5). Modern Western thought opposes nature to culture and conceives the former "as a universal ground that is common to all particular cultures" (Lemmens, 2020, 3). An appeal to other ontologies, the so called "ontological turn", is an appeal to the overcoming of this anthropocentric conception of nature. The problem, Hui argues, is that "the question of technics is not sufficiently addressed in the ontological turn" (2017, 6). In most cases, authors place technology on the side of modern Western ontology, and thus close off the possibility of a non-modern and non-Western interpretation of technology beyond the culture-nature divide (Hui, 2017, 6).[18] If the "ontological turn" was aimed at overcoming the nature-culture divide, Hui's concept of cosmotechnics "is designed to overcome modernity's opposition between nature and technology" (Lemmens, 2020, 4). This should not be understood as a defence of tradition or non-technical worldviews motivated by a desire to rehabilitate the past, but rather a project that "explicitly looks at the future and aims to be an imaginative and inventive discipline in search for new cosmotechnics [that is] a plurality of cosmotechnics for the age of the Anthropocene" (Lemmens, 2020, 4; see also Hui, 2020, 64).

As mentioned above, Hörl credits cybernetics with the blurring of the conceptual distinction between nature, culture and technics. At the same time, however, cybernetics "remains a thinking of totalisation" (Hui, 2020, 63). Comsmotechnics, on the other hand, is not concerned with totality (and universalism) but with "technodiversisity"; as such, it tries to think "beyond the totalising effect of cybernetics" (Hui, 2020, 63). It introduces the "question of locality" into the totalising thinking of cybernetics (Hui, 2020, 63). Just as "nature" requires biodiversity, the new planetary ensemble of nature-culture-technics, the "general ecology", requires "technodiversity" (Hui, 2020, 63). The disappearing of a species (biodiversity) is equivalent to the disappearance of different cosmotechnics and the imposition of a universal view of technology. The concept of cosmopolitics is hence presented as a way of refusing this path, challenging the "homogeneous technological future that is presented to us as the only option" (Hui, 2017, 9).

Conclusion: Towards a posthumanist critique of large language models

We argue that the theoretical framework grounded in the above four concepts provides a productive lens for critiquing LLMs on posthumanist terms. Such posthumanist critique serves a twofold function. On the one hand, it enables a departure from current approaches like that of Bender, which—on account of our allegedly exclusive capacities for language, intelligence, and meaning-making—promote human exceptionalism and advocate for a politics of technological governance that seeks to safeguard our humanity and prevent a dehumanizing conflation with machines. On the other, it responds to Hörl's call for a new critique, one that will be capable of better understanding our "digital condition". Each of the four proposed concepts thus addresses an aspect

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[17] Hui's concept of cosmotechnics stems from a critical dialogue with both Kant and Stengers. He challenges Kant's "pursuit of the universal", calling for "a certain relativism as the condition of possibility for coexistence" (2017, 2). At the same time, Hui complements Stenger's work on "cosmopolitics" by emphasising the centrality of technology for any "politics to come" (2017, 2).

[18] Similarly, Lemmens (2020, 4) argues that the ontological turn is "an attempt to reconceptualize the relation between the human and the non-human, and hence to go beyond the nature-culture dichotomy that restricts all visions to a parochial Western worldview". Through colonization and modernization, most non-Western cultures have been "enframed by Western technology" in such a way that "the global technological condition has become their destiny" (Lemmens, 2020, 4).

of LLMs from a perspective that both avoids falling back on an anthropocentric standpoint while also accounting for the new mechanisms of power under which these technologies emerge.

Firstly, Hörl's concept of general ecology allows us to consider LLMs as systems of relations that challenge the distinction between culture, nature, and technology. From this perspective, humanity is no longer seen as an agential force that stands above the inert realm of nature and uses technology to transform it and exploit it. Instead, the interconnected multiplicity of human and nonhuman components that feed into the functioning of a language model co-exist on a horizontal ontological plane. These components do not exist as separate and self-contained entities but are constituted only through interactions with their environments and a continuous co-shaping of one another. As such, LLMs should be understood as an "assemblage" (Buchanan, 2021; Hayles, 2023; Lindgren, 2023) that operates through complex interaction between different material and symbolic components.[19] These components include human developers, moderators, and users, mathematical models, training datasets, computational infrastructures (GPUs, servers, cables, etc.), specialized knowledges, socio-technical imaginaries, and vast amounts of electric energy and water-cooling systems. In the specialised literature, experts speak of these assemblages as "ecosystems" necessary to develop, maintain, and deploy "foundation models" such as LLMs (Briggs, 2023). All of this is embedded into wider socio-technical systems of material infrastructure, legal institutions, and capitalist markets. If we follow Buchanan (2021, 144), we can speak of LLMs as "control assemblages", that is, assemblages of human and nonhuman components organised in such a way that they provide leverage for the new mechanism of power that underlie digital platforms. Considering LLMs as control assemblages prevents us from seeing technology in purely instrumental terms and nature as a mere exploitable resource. Additionally, it highlights the relation between LLMs and new datafied technologies of power in the context of digitalisation, or what Hörl calls Environmentality.

Secondly, the concept of machinic agency enables us to go beyond the opposition of humans as autonomous agents and language models as a mindless, probabilistic tool. From the perspective of machinic agency, agential forces are a matter of enabling and disabling connections between human and nonhuman components (see Markelj and Celis Bueno, 2023). As such, agency (intelligence, language, meaning-making, etc.) is not seen as the exclusive domain of human subjects, but as arising from the interaction between different nodes in the LLM assemblage described in the previous paragraph. Framing agency in these terms does not amount to simply attributing anthropocentric agency (sentience, consciousness, self-awareness) to AI systems as is done by the transhumanist vision of a technological singularity. The latter reproduces the anthropocentric view of agency as it posits that such singularity is autonomously created by humans and possesses an agency that is superior but akin to ours (Hui, 2017, 12). As machinic agency locates the capacity to act in the affective relation between humans and non-humans, it challenges the anthropocentric notions of authorship, creativity, and intentionality (Markelj and Celis Bueno, 2023), ideas that seem to have been reinforced by some of the current critiques of *ChatGPT* discussed above. Aligned with Stiegler's theory of "originary technicity", our perspective assumes that our interaction with language models is co-constitutive of both the user and the machine through a reciprocal and recursive process (Hui, 2023). In this sense, current critiques of LLMs that simply call for institutional regulation (private or public) tend to assume an instrumental view of technology that obfuscates the machinic agency of each of the different components of the LLM assemblage.

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[19] We use the concept of assemblage in the sense outlined by Deleuze and Guattari (1987). For a thorough discussion of the concept, see Buchanan (2021).

Alternative, a posthumanist critique of LLMs assumes a distributed conception of agency that redefines the terms of any possible regulation. From this perspective, any sustainable and long-term intervention needs to be aware of how each component of the entire ecosystem of LLMs enacts its own agency, reshaping the others in a co-constitutive process. This entails regulating not only the technologies themselves, but the social assemblages "capable of producing them and making use of them" (Deleuze, 1995, 180).

Thirdly, the concept of machinic surplus value allows us to focus precisely on these social assemblages and to examine LLMs as a capitalist apparatus of capture. From this perspective, LLMs can be seen as "control assemblages" that seek to exploit and appropriate the "amplifying connections" that arise from the interactions between its human and nonhuman components. By shifting from a Marxist framework to a posthumanist critique grounded in the concept of machinic surplus value it can be shown that exploitation in current LLMs does not simply concern human intentional effort (e.g., that of OpenAI's engineers and outsourced content moderators), but rather affective relations between human and nonhuman elements which precede the said conscious effort. If we assume that LLMs constitute a "control assemblage" in which agency emerges from relations between its human and nonhuman components, then the traditional notions of labour and surplus value (which concern exclusively the domain of conscious human activity) appear insufficient for a critique of the social assemblages that produce these technologies and put them to work. Mobilising the (posthumanist) concept of machinic surplus value allows us to emphasise that a critique of the political economy of LLMs is not simply a matter of analysing the conflict between human labour and capital but is instead grounded in the examination of the mechanisms of capture of a given surplus. Here surplus is not understood in terms of human (abstract) labour time, but as the process of connective amplification that stems from a specific machinic assemblage. As Hörl puts it, a critique of political economy in the current context of cybernetization cannot be restricted to the exploitation of human labour time but must focus on the processes of "exploitation of relationality". In this sense, large language models allow for new relations of amplification that cannot simply be explained in terms of the automation of labour and the reduction of abstract labour time. As an apparatus of capture, LLMs exploit this relationality in ways that exceed the traditional forms of capitalist valorisation.

Finally, the concept of cosmotechnics urges us to redefine our modes of engagement with LLMs. These modes of engagement should be able to go beyond the universal imperatives of productivity and profit that have been dominating modern mobilizations of technology, and that still posit nature as a "standing reserve" (a mere resource to be exploited by human enterprise). In relation to large language models, Hui argues that their development in the last decade has been dictated by "the competition of technological acceleration and the allures of war, technological singularity, and transhumanist dreams" (2017, 9). Yet, he insists that different techno-ecologies are possible. As our engagement with LLMs inevitably shapes our capacities to act, creating more enabling modes of its deployment is paramount. This demands imagining radical new ways of defining technology beyond the universalising, totalising, and homogeneous framework through which technology has been understood in the Western worldview. This is not an easy task, precisely because of the pervasiveness of this conceptualisation of technology. Our understanding of large language models such as *ChatGPT* remains seized by an anthropocentric worldview that (a) sees technology as a means to transform nature in order to satisfy human needs, and (b) measures this process in terms of productivity and profit (human surplus value). Hui's concept of cosmotechnics is a call for disentangling technology from this unitary model and imagine other modes of collaboration between humans and machines. One outlet for the creation of these new, more empowering and

sustainable technological imaginaries is the practice of counter-memory, which emphasises the excavation of "forgotten or marginalised histories" of technics (Sylvia IV, 2021, 145). Following Sylvia IV (2021), we propose that uncovering these minoritarian narratives of technology and acknowledging their cultural specificity can be a significant resource for posthumanist ethics and politics as they can account for more enabling processes of subjectivation.

The posthumanist critique sketched in this article is an attempt to move in the direction of such new collaborations. By conceptualising LLMs as a "control assemblage" in which agency is distributed between human and nonhuman components, and by articulating its exploitative nature in terms of the capitalization of relationality and the capturing of processes of amplification, we aim at disentangling its critique from an anthropocentric framework. In doing so, we are taking the first step towards a different way of imagining these technologies beyond the human imperatives of exploitation, productivity, and profit.

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Mutation Materialized: The Concept as Method

Rosa Stilgren[1]

Abstract

Concepts have been disregarded from posthuman studies as static entities that constitute and reinforce anthropocentric categories. This article explores how concepts can be used as methods, investigating the intersection between posthuman theories, media studies and algorithmic audio production. Following Mieke Bal's framework of concept-based methodology (Bal, 2009) as source of inspiration, this paper explores how concepts work as socio-material entities to analyze specific arrangements, exploiting the concept's multiplicity (Deleuze & Guattari, 1994) defining the concept as an agent that "works" (Slaby et al., 2019). Thereby acknowledging that the concept itself will not be unaffected by process of analysis. The article focuses on the concept of mutation as an autonomous process of being and becoming that identifies specific transformations in digital audio production, illuminating the interplay between concept-ualization as normative systems of being and concept-ing (Taylor et al., 2023) as active processes of becoming.

Keywords: *Methodology; Concepts; Posthuman Media Studies; Mutation; Digital Audio Production*

Introduction

This article investigates the implications of thinking through concepts as processes that affect and are themselves affected by material practices. I suggest that a reconfiguration of concepts as socio-material entities is particularly constructive for exploring the intersection between posthuman theories, media studies and algorithmic music production.

I explore this intersection through the perception of concepts as interdisciplinary tools of intersubjectivity (Bal, 2009), opening up a field in which concepts are constituted as multiplicities (Deleuze & Guattari, 1994) that co-evolve with objects rather than seeking to explain them. Instead of concept-ualization – here understood to mean the practice of turning abstractions into simple definitions that describe phenomena - this article discusses and elaborates on the alternative practice of "concept-ing" (Taylor et al., 2023). The concept is perceived as an socio-material agent that works (Slaby et al., 2019).

Through an illustrative analysis of sidechain compression in digital audio production – the process of changing a sound's or composition's dynamic range in relation to other signals – I argue that the concept of mutation contributes to new understandings of digital practices through a constitutive co-creation between concept and practice. Mutation, in this context, works to highlight the transformational process of intra-acting signals that dynamically moves back and forth between tool and effect. It facilitates, enacts, and affects the process by engaging with the digital sidechain

compressor in a perpetual state of being and becoming. I thereby suggest a perspective in which concepts engage with and modulate the object's material, discourse, and practice.

Understanding dynamics between concepts and practices as interrelated processes means that the analysis can be understood in two directions: on one hand, it investigates the sidechain compressor through the concept of mutation as autonomous processing and on the other, it highlights how the particular practice of sidechain compression enacts and calibrates the concept of mutation.

The interdisciplinary field of posthuman studies are continuously challenged by operating at the intersections between the grand narratives of traditional disciplines, building on their insights whilst resisting their anthropocentric ontologies. In order to overcome reifying dichotomies that characterize much of traditional disciplines' way of thinking, the posthuman confers with process ontology in which the posthuman subject is described as always in flux. As a linguistic strategy, posthuman concepts are therefore themselves fluid, transformative, and adaptive. The problem is that this fluidity makes them susceptible to ontological decontextualization (Sylvia IV, 2021).

Sylvia (2021) states that certain posthuman concepts have become implemented in media studies but have been used selectively without attending to the ontology and criticism embedded in these concepts. He describes how Deleuze's concept of assemblages cannot be used without adapting to Deleuze's critique of enclosed subjectivity. Sylvia notices how media studies have tried to assimilate posthuman concepts back to anthropocentric ontologies (142). This requires a new approach to ontologies in which media becomes one part of analytical assemblages. Throughout this article, I argue that a concept methodology enables this new approach to ontologies.

Posthuman terminology – mutation stabilized

Ferrando (2012) argues that the overcoming of dualisms that the posthuman paradigm entails includes that between theory and practice: "Posthumanism is praxis; it has to be comprehensive in its contents as well as in the way such contents are explored" (9). Similarly, Braidotti (2002) notices that thinking of separate entities is easier that imagining the flows that connect them: "The fact that theoretical reason is concept-bound and fastened upon essential notions makes it difficult to find adequate representations for processes, fluid in-between flows of data, experience and information. They tend to become frozen in spatial, metaphorical modes of representation which itemize them as 'problems'" (2). From this perspective, concepts are entities that hold theory together. They encapsulate and reinforce hegemonic thinking. Although I do agree with the ontological implications of Ferrando and Braidotti's statements, I do not conceive processes and concepts to be oppositions. Instead, I argue that concepts exist as dynamic entities working in the intersection between concept-ualization as "spatial, metaphorical modes of representation" and concept-ing as processual becoming. They are both theory and practice.

In order to represent processes and circumvent theory, posthuman theories have constructed speculative terminologies drawing on concepts from science fiction, technoscience and biology. As Braidotti (2006) argues the turn towards "minor" or marginalized genres as science fiction and cyberpunk creates the ideal framework for imagining and engaging with the otherness of the posthuman (204-205). These fluid, open-ended concepts have been particularly applicable to posthuman terminology because they fit the processual ontologies of assemblages that value relations over substances. An example is the articulating and imagining of the posthuman through the cyborg as a being of fiction and reality, machine and organism (Haraway, 1991).

Another concept, closely related to the cyborg, is mutation. It has been effectively applied because it has close connections to bodily figurations, envisioning transformations of flesh-bodies turning into mutants. These imaginations circulate within what Rutsky (2007) calls a "bio-cultural model" (103) in which biological references work to represent and envision cultures as complex systems of distributed agencies. As the body radically changes through the randomness and unpredictability of mutation so must culture. Mutation has become the link between the human body and culture, and the otherness of "minor" genres.

However, it hardly seems controversial to suggest a human-machine-hybrid in the current mediascape of technologies that turn populations into data points, intimately connecting through and with algorithms. The "minor" genre of science fiction has become mainstream, cultivated by popular fictions of mutants, superheroes and metahumans (Rutsky, 2007) but also literal technological manifestations as avatars and chatbots. For instance, the backlash against large language models like Chat-GPT, reducing them to "parrots" (Hayles, 2022, 22) are more concerned about the potential loss of human autonomy than the technology itself. The black boxed processing between input and output set off conceptual frictions and new dynamics between concepts like automation and intelligence, language and coding. When chatbots become subjugated to human control as stupid machines it is an act of power and an unwillingness to recognize the randomness of mutational processing, accepting intelligence to be a distributed feature. As Rutsky notices the ongoing imagination of mutation as change has come to represent "human self-empowerment" in the attempt to control the complexities of technoculture: "bodily mutations, transformation of consciousness, and historical breaks are all *humanized*, made subject to the same rhetoric of human mastery and technological empowerment that has for centuries defined Western culture and its notion of the human subject" (Rutsky, 2007, 106). When mutation becomes interchangeable with change, it subordinates its autonomous processing to the metaphorical mode of representation through concept-ualization, articulating it as a logical progression from body to body-upgrade. Instead, scrutinizing and actively using mutation as concept facilitates, enacts, and affects this change by engaging with its medium from its superposition of being and becoming. It becomes a transformative force. To understand exactly what concepts do, I turn to the sidechain compressor as the medium in which mutation can be instantiated.

Concepts as co-creations within media studies

The introduction of the digital audio workstation - the software application for producing, sequencing, recording and editing sound through a digital interface - transformed and assimilated analogue oscillations to digital coordinates. This change has challenged perceptions of musical representations as contemporary productions position themselves at the intersection between analogue and digital landscapes, between physical and virtual realities. These digital arrangements are subject to fluid processes of constant mutations, creating intersections between different materialities where analogue instrumentations transformed into digital icons merge with the fluidity of data streams and algorithmic plasticity and thereby become continuously disconnected and reconnected into new arrangements.

The sidechain compressor works within the digital audio workstation and controls a sound's dynamic range in relation to another signal. For instance, every time a kick occurs it activates the compressor to reduce the volume signal of another sound in order to create dynamic control between differing signals. This process "cleans up the mix" which means that all sounds of a

composition are combined and positioned in relation to each other. This function is controlled by a threshold.

Figure 1. Sidechain compression: the upper soundwave is controlled by the lower sidechain trigger signal.
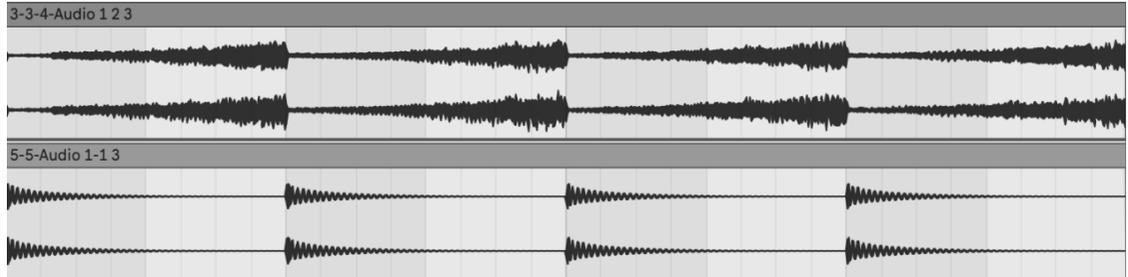
However, this is not the only operation it has. In recent years, experimentation with over-exaggerating the sidechain compressor or applying it to whole arrangements, and not merely parts of it, has created stutters or "pumping" effects. Sidechain compression works both within the mix, as a tool to make audio clearer, and as an effect that creates the feel of continuous and effectively closing down and opening up the volume. It resolves two problems: how space can be created within compositions of differing signals, and how dynamics can be utilized to create pulse. These particular problems relate to how operations are conceptualized as tool and effect.

Manovich (2001) suggests that the radical change in the media landscape from consisting of material objects to digital mutable data requires a new approach to the theoretical conceptual work. He argues that the increased computerization of culture has instigated a process of "cultural reconceptualization" (47). To understand digital media as old media digitized would be to understate and overlook its most fundamental and unprecedented quality as "programmability", the fact that everything is subject to constant editing.

He argues that one strategy for understanding this "logic of new media" is to adopt concepts from computer science: "the concept of an operation can be also employed to think about other technologically-based cultural practices. We can connect it to other more familiar terms such as 'procedure', 'practice', and 'method'. At the same time, it would be a mistake to reduce the concept of an operation to a 'tool' or 'medium'" (Manovich, 2001, 121). His statement emphasizes the culture-historical baggage that cling to concepts and their inadequacy when it comes to describing "new" materials when perceived as self-contained entities that prescribe meaning to materials. To Manovich these software operations are instead to be understood as concepts materializing. In other words, they exist outside digital environments as abstract ideas, or specific problems, and their solutions become operationalized by implementations into hardware or software.

To understand concepts as solutions materialized make them embodied actions, imperative to digital environments, that affect both the problem abstracted and the solution implemented. In short, concepts become tangible as digital operations. This suggests that the process of implementation not only addresses abstract problems but also influences the problem and solution itself. To differentiate between tool and effect therefore has important implications to how media objects are conceived because we engage with these processes of implementation. Put differently, concepts are not independent from practices. Practices are informed by concepts and concepts informed by

practices. The sidechain compressor materializes within the digital audio workstation as solution to very different problems dependent on the concepts connected to it.

Concepts are activated, then, not only with language, but in and as material. The concept is not only applied to explain matters concerning analysis of the object but collides with it. It turns into a hybrid of linguistic and material. When mutation collides with sidechain compression, it expands on the idea of mutation tweaked by the compressor's parameters. It becomes practice and practice becomes discourse that then turns on itself leading to new practices at different thresholds, appearing as different mutations. Following Deleuze and Guattari (1994), it can be argued that the mutation is immanently there but is experienced at different speeds and intensities.

The question, then, is how do we understand and articulate this process of co-creation between concept and object? How do we maintain the concept's flexibility in analysis? To explore how concepts work as agents in these co-creative processes, I examine concepts as multiplicities that work as interdisciplinary tools to account for specific assemblages.

Bal (2009) argues that concepts can dissolve interdisciplinary frictions between methodologies and knowledge practices because they establish a common ground that offers a specific and local alternative to grand narratives. She suggests that the concept should be released from systematic theory (although it should be considered), from its history or context, and instead, should be drawn into a framework with the object of analysis: "I wish to insist on the participation of the object in the production of meaning that 'analysis' constitutes" (16). To put it briefly, cultural methodology is cultural production: "Concepts are the tools of intersubjectivity: They facilitate discussion on the basis of a common language. Mostly, they are considered abstract representations of an object. But, like all representations, they are neither simple nor adequate in themselves. They distort, unfix and inflect the object" (18).

This definition points to some degree of consensus about coherence, acknowledging the concept as the abstract representation of objects. Simultaneously, it mobilizes the concept as an agent that "distort, unfix and inflect." This positions the concept as the "contact zone" between disciplines in which they facilitate the necessary dialogue (Neumann & Nünning, 2012, 4). Taylor et al. (2023) suggest that this dialogue can be enacted through "concept-ing": "Concept-ing is not a reflection, representation or a result of what was done (past tense). Concept-ing is an act, an activity, an enactment, a processual practice (in the present) and a co-creative act (for the future) that destabilizes fixities and puts theory and research back in motion" (29).

In perceiving concepts as agents that work, it no longer makes sense to ask what they are but rather what they *do* as they are flexible and subject to change, travelling between disciplines, through history and different articulations (Bal, 2002). To work with the concept methodologically, according to Slaby et al. (2019), means arranging theoretical elements and examples in specific formations. The perspective shifts from the practice of concept-ualization to concept-ing as the balancing act between representation and exploration. So how do we keep up with concepts as moving targets, continuously disconnecting and reassembling to other disciplines, concepts, and practices? How do we remain sensible to the something-new that unfolds in this process?

To answer these questions, I turn briefly to the philosophy of Deleuze and Guattari. In "What is Philosophy?" (1994) Deleuze and Guattari offer a definition[2] of the concept as a specific formation: "The concept is defined by the inseparability of a finite number of heterogeneous components traversed by a point of absolute survey at infinite speed" (21). Adopting this definition makes it possible to perceive concepts as processual beings that are informed and molded by their confrontation with objects. They articulate solutions to problems in specific ways. As Schmidgen (2015) notices "they operate as probes, detectors or instructions for seeing new realities, and it is only gradually that one learns what can be recognized with their help, what they show and what they point to" (124). Instantiating the concept in a medium means that this process is also materially evoked. Turning the sidechain compressor's threshold up or down also calibrates the concept connected to it. If it is worked as a tool, it works within a culturally determined interval to control dynamics but also within certain limitations in the way its possibilities are thought out. If the threshold is operated beyond that interval, it no longer solves the issue of dynamic controls. The solution becomes something else entirely as the output becomes generative.

As stated in this paragraph, the concept is always in a state of becoming but maintains some consistency in the process. Before I delve further into the specific concept of mutation, I outline two strategies for using the concept as method. These should not be understood as prescribed procedures but instead as possible entries to analysis meaning that they work as structuring elements and not as instructions. The "confronting and colliding" strategy works to build on the conceptual framework, investigating the concept's components and history as the lose structure of concept-ualization. The strategy of "arrangement thinking" work within this framework and facilitates the process of concept-ing.

Methodological strategies

The first strategy is to confront and collide the concept with the object of inquiry. It uses the procedural concept as an active practice, a participant, that create meaning by confrontation with the object. It is in this process that the concept organizes itself, connects and disconnects. As Bal (2007) points to, it is in this process of collective "groping" (35), where we try to figure out what concepts mean that we realize what they can do. I take this a step further, arguing that with the "confronting and colliding" strategy, this process can also be material as it operationalizes through media. The "groping" is also an embodied and material experience as we intra-act with objects, trying to figure out what they can do, explore their possibilities and limitations. Experimenting with different operations, the tweaking knobs, pushing buttons, swiping screens, are all interactions with media technologies that enforce concept-ing. There is no "correct" way to manage these technologies, only standardized actions. If we go beyond the affordances that encourage certain actions, we need to reconfigure our concepts to conceive these new actions or effects.

The second strategy is that of "arrangement thinking" as it is articulated by Slaby et al. (2019). They suggest an analogy of the concept as hashtag that connect discursive elements as materialities and texts with non-discursive elements as emotions and experiences which means that they "create realities and affects, they circulate and travel to the degree that they can become independent of the original scholarly scope of their invention" (31). The arrangement thinking emphasizes the particular composition of elements that relates itself specifically to solve certain problems. It becomes possible

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[2] I am well aware that isolating this definition seems contradictive to the philosophy of Deleuze and Guattari that resist the very idea of definitions and the practice of concept-ualization. Despite this, I have chosen to include it for the purpose of this article as it offers an alternative, flexible framework in which to understand the concept.

to draw on conceptual and disciplinary differences rather than being limited by them. The concept encapsulates these differences in arrangements of discursive beings or concept-ualisation and active compositions of becoming or the concept-ing. Within this perspective, the concept of mutation arranges the different operations in a certain way, drawing in elements as negotiations, emotions and materialities that have become materialized in the sidechain compressor.

These strategies allow the concept to be an interrelated practice that corresponds to the paradox of concept as method. It is both instructive and responsive. The concept exists in a constant feedback loop with objects. They are not self-sustainable because that would mean that they are something in and of themselves. As Sylvia (2021) argues, referencing Deleuze's thinking within thought, an affirmative approach to posthuman media studies should rethink communication as a creative act rather than transmissive (144). The concept allows us to do exactly that if we refigure our perception of the concept itself. Instead of perceiving it as a transmitter of information, we perceive it as a facilitator of possibilities. These possibilities are not limitless because they are contained within the semipermeable membranes of the concept.

I have therefore suggested that rethinking the concept of the concept itself should involve a movement from applied over being "confronted with" (Bal, 2009) to merging with, from being prescriptive to explorative. This rethinking of concepts opens up to socio-material investigations, discussions, and reflections on processes.

Sidechain as mutating surfaces – mutation mobilized

In the following section, I show how transformation and mutation activates the sidechain compressor differently. I employ the two strategies to understand sidechain compression through mutation. I investigate how the concept of mutation mobilizes and immerse the sidechain-object in different negotiations that move dynamically between mediations, as I examine sidechain compression as the act of "unmasking interfering sounds", the invisible mixing tool, and as "pumping" effect.

In music production theory, it becomes evident that the way the sidechain compressor's operations are articulated affect how it is perceived. When it is perceived as transformation it becomes a control parameter excluded from aesthetic analysis. Respectively, when it becomes effect, it produces. Brøvig-Hansen et al. (2020) describe different compression practices:

> "Dynamic range processing is usually intended to change the amplitude or volume of a sound or a mix, to alter the volume relations among the different sounds in a mix, to unmask interfering sounds (via sidechain compression, for example), to narrow or expand an audio signal's dynamic range, and otherwise to create musical and aesthetic effects (such as "pumping") in a non-traditional manner" (1–2).

In this definition of dynamic range processing, Brøvig-Hansen et al. significantly differentiate between the mixing tool and the musical effect. The mixing tool implies an intent to change, to control relations between signals which result in specific outcomes. The effect creates musical and aesthetic content. From this perspective, the compressor is either-or. It is and is not musical material. The differentiation between tool and effect emerges through operation. In other words, whenever a certain threshold is lowered from unnoticeable to recognizable, it becomes aesthetic processing. The threshold acts as a gatekeeper, deciding what is allowed the status of musical material. The tool has to transform into effect.

Similarly, Hodgson and MacLeod (2014) describe sidechain compression as "lateral dynamic processing" and points to the fact that this has been mainstreamed by electronic dance music producers that "simply transformed it from primarily a transparent countermeasure against masking into a coveted and characteristic performance practice in and of itself" (106). His main argument is that the technical practices in sound recording technology is communication but that these practices remain unacknowledged as agencies to be reckoned with. Instead, they are perceived as biproducts or side effects that merely accentuate harmonical music parameters.

Though Hodgson highlights the importance of recording practices as aesthetic values, he still downplays the materiality of these practices by implicitly stating that they do in fact not represent anything new, they "simply transform" from unrecognizable to apparent. What this suggests is that the concept of transformation does not capture the cultural effects produced with the sidechain compressor within electronic dance music as they are subordinated to traditions captured within the threshold oriented towards harmonic progressions. I suggest that in order to consider these practices communicational, they must be considered in a conceptual framework that accounts for their mediation, their specific arrangement thinking, changing perspective from the transformational to the mutational.

Mutation as concept

Hayles (1999) criticizes the idea that information can be separated from materiality. The same idea that has led to transhuman conceptions about consciousness as a type of informational pattern that can easily be uploaded to computers. She argues that this dematerialization reproduces the autonomy of the liberal subject as a hierarchy between the cognitive and the corporeal. To circumvent this idea and to reinstate materiality, she connects dialectics[3] of information as pattern and randomness with materialities as presence and absence. In short, information is organized and stabilized in patterns and materiality in presence. These dialectics are connected through mutation as the "bifurcation point" in which the interplay between pattern and randomness causes the system to evolve in new directions. She argues that this interruption is catastrophic as it destabilizes the system in unpredictable ways.

In order to use the concept of mutation for methodological purposes, I offer this definition: mutation exists in a double state of being and becoming as an autonomous process fueled by unpredictability. In the following section I will elaborate on this statement and explore how mutation can be understood as an analytical parameter in media studies.

The double state of existence is articulated by Hayles (1999): "Although mutation disrupts pattern, it also presupposes a morphological standard against which it can be measured and understood as a mutation" (33). It is a concept that simultaneously articulates normative standards and breaks them down in the process. To use the concept of mutation as method requires a reconfiguration of this morphological standard. As Rutsky (2007) notices, the standard is not fixed: "mutation names the randomness which is always already immanent in the processes by which both material bodies and cultural patterns replicate themselves" (111). Instead, this standard should be understood as a system of representations in which humans organize their understandings of the world. I propose that these understandings are organized through stabilized, standardized concepts. Concepts that have been subject to a sedimentation process which encapsulates and decreases their speed. Mutation, then,

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[3] Dialectics, within this context of process ontology, could be rightly criticized for reproducing binary thinking. This is a larger discussion that I will not pursue at this point but it is a testament to the pitfalls that posthuman approaches should navigate to avoid.

becomes a productive force in this system of sedimentation that, as Rutsky argues, is immanently there and not imposed on it as external force. It creates tension as the underlying possibility of enforced, uncontrollable changes. In this sense, mutation *is* catastrophic. It produces difference by disrupting the system, creating momentarily chaos, making us uncomfortably aware that control is an illusion. It is both a being and a becoming.

Mutation is uncontrollable, autonomous, and unpredictable. It is all of these things but cannot be reduced to either of them. In contrast to transformation as the threshold for audibility, mutation does not care about thresholds. There is no logical progression from tool to effect. Through the concept of transformation, the tool serves a purpose, it has an intended use that can generate effects. When this process is perceived through mutation, the tool becomes something else entirely. It becomes the instrumentalization of processes. Perceiving mutation in such a way gives it agency, or rather a specific formation of forces, that *act* in certain ways. It points to communication outside subjectivity, highlighting the fact that "humans are only one possible scale of analysis" (Sylvia IV, 2021, 143). Experimenting with sidechain compression is the material act of concept-ing. It enables new practices that modulate concepts in unpredictable ways. When sidechain compression is perceived through the concept of mutation, it produces difference, operated on the edge of standardized thinking. The sidechain as "lateral dynamic processing" is in fact lateral, not only in its audible outputs, but as mutation of thought. In other words, when we think of the tool as a control parameter, we subordinate its effects to human control. When we think of it as mutation, effects are distributed practices. It matters how we think practices and conceive them through concepts.

In these previous sections I have argued that sidechain compression as mutation produces difference. It works as an autonomous process, as an agent outside of human control. The tool is understood as a system of representation, a pattern, that is tweaked and modulated to the random organization of the effect. The concepts do themselves modulate to fit these new practices. In the following section, I use the strategy of arrangement thinking by confronting mutation with different mediations of the sidechain compression to explore the different speeds in which mutation moves materials: what happens to the sidechain compressor when it is thought of as a tool and respectively, what happens when it is thought of as an effect? I analyze these mediations as two arrangements: "miniature mutation" and "systemic mutation".

The miniature mutation

When the sidechain compressor is described as the "transparent countermeasure against masking" (Hodgson & MacLeod, 2014, 106) it relates to the negotiation of space. Which sounds are identified as interfering? What system do they interfere with? The very sentencing points to a taxonomy of interrelated signals. As a traditional mixing strategy, this taxonomy is constructed by the idea of unmediated space, resembling real-acoustic conditions: "The original intention of compressors was to alter the dynamic range while leaving as little audible effect as possible" (Izhaki, 2018, 275). This is the reason why it seems transparent. But the transparent sidechain compressor is not transparent at all, but it remains unregistered as an aesthetic parameter because it operates in the system of its metaphorical mode. We understand it as tool. We have become ignorant of the difference, the dynamic subtleties in the mix that it produces, because we connect to the divide between nature and culture, perceiving it as a representation of real-acoustic environments. This representation has allowed for cultural articulations of the unmediated, organic state of authenticity. But the divide between the "real" as nature and the virtual as culture does not exist. When perceived as miniature mutation, it no longer relates to real-acoustic space, revealing that it never did. It merely simulates

how we conceive impacts of sounds resonating in physical environments. The acoustic kickdrum is impactful because it vibrates louder than an unamplified bass. It negotiates the physical and abstract dimensions of space that the concert circulates in and emerge from. If tweaked a bit above its "natural" threshold, the sidechain makes evident how the real was always the virtual by mutating from tool to effect. The mutation is always immanently there, triggered by certain digital operations. As Eshun (1998) states: "Whoever controls the effects controls the means of mutation. Effects inaugurate an alchemical era, a science of nonlinear synthesis" (011).

The systemic mutation

I now turn to the "pumping" sidechain effect as a "systemic mutation". In this case the sidechain compressor is exaggerated "which results in constant level changes at regular intervals" (Brøvig-Hanssen et al., 2020, 1.3). It chops the whole composition into repetitive parts, creating the "pumping" effect by reducing the entire signal to its off and on states. The effect seems to crack open the composition, exposing its digital materiality as the harmonic material is assimilated to the binary codes of the machine. It is the machine's self-referential process that exposes the arrangement as digital signal processing. In doing so, it subordinates the arrangement to digital coordinates, "the nonlinear synthesis" (Eshun, 1998), instead of harmonic progressions of analogue recordings. It disconnects itself from a continuous narrative and turns instead into mutating surfaces pulling in and out of the foreseeable and unimaginable, of its analogue past and digital future.

In doing so, it negotiates time. It mutates from dynamic control to beat control though one should be careful with the idea of control. Control, in this case, is an operation enacted through mediation and concept. The "systemic mutation" breaks with linear thinking as it works without a goal. There is no goal to be achieved. It exposes time as dynamic intertwined chunks repeating with different intensities.

The interrelatedness between miniature and systemic mutations

As argued in the previous section, the digital sidechain compressor as mutation negotiates space and time by dynamically moving between opposing concepts related to the arrangements of tool and effect: the real and the virtual, the linear and the cyclical, time and space. The miniature and the systemic are different ways of experimenting with the sidechain compressor, experimenting with the interconnectivity and relational processes of dynamic range compression. These processes draw in these different relating concepts connected to discourses, cultural practices and technologies.

The sidechain compressor is both a tool and an effect. When operated as tool to unmask, its effect becomes audible through clarified dynamics. When operated as "pumping" effect, it materializes through the tool of beat control. What the sidechain compressor produces is *difference* between our systems of representations i.e., the imitation of physical acoustics, the safety of recognizable patterns, and the unforeseeable, the "malpractice" of the tool to mutation. Understanding this difference as mutation materialized means that it can actively modify states of being as the autonomous process that interferes with these systems of thinking and signals within tracks. As Manovich (2001) states, when objects become data, they exist in numerous state. The concept methodology is therefore also a material practice that can easily be tweaked and triggered through algorithmic processing. When we shift perspective from conceiving compression as transformation between tool and effect to mutational instrumentalization, something happens. Mutation moves out its concept-ualised state as change and becomes an active practice that connects to different coordinates of the digital and the discursive.

Conclusion

Throughout this article I have investigated the intersection between posthuman theories, media studies and algorithmic music production, employing concepts as methodological approaches to understand and analyze different arrangements of object, discourse, and practice. From this perspective, concepts act as co-creative processes that modulate and are themselves modulated by their intra-action with objects. I have argued that this process is also embedded in materials as they contribute to different understandings through their operations. Understood as socio-material agents, concepts work to articulate processes and flows within coherent frameworks because they are processual themselves. To do this methodological work, though, requires an awareness of the difference between concept-ualisation and concept-ing.

The concept-ualisation of mutation has made it interchangeable with relating concepts like change and transformation. I have defined mutation as "the double state of being and becoming". In the analysis of the sidechain compression, the concept-ing involves mutation at different scales. As miniature it relates to concepts of real and virtual, accounting for the flow in between these conceptual states. As systemic it disconnects from continuity of narratives, accounting for the flow between the linear and the cyclical. The sidechain compression engages in the concept-ing as the non-verbal, non-human unit of their articulations. These specific arrangements of concept and practice help to emphasize how technology is articulated and enacted within systems of representations whilst working to disassemble the cultural forces that continuously work to throw them back into anthropocentric ontologies. The sidechain compressor becomes an instrument, the mutation materialized. It actively makes us feel the mutation from oscillations to digital coordinates, and in doing so, modulates our perception of mutation itself. But mutation is not sustainable. It exists in a constant feedback loop between object, discourse, and practice. Once identified as mutation, as the something-new, it will be structured back into the system of reified conceptual representations. What makes mutation particularly impactful is the discussions that it initiates if we allow objects the status of mutation. No matter the outcome of these discussions, what they make evident is that turning our perspective to the concept itself, activating it as a participant in analysis, opening up to new material articulations, we might end up with different conclusions than we anticipated. As Ferrando (2012) points out, changing perspective and key-words in posthuman research provides new insights. Engaging with concepts as socio-material entities that constitute the arrangements in which materials and humans intersect, not inflecting human control, but reflecting it through the image of the something new that emerges. With new media platforms that work through autonomous, black boxed processes of machine learning, the concepts connected to them become particularly important. For instance, how the hashtag affect the concept of system, as an operation that organizes content but simultaneously generates anti-system engagements from users actively using different spellings to organize outside algorithmic control (Duffy & Meisner, 2023). Thus, the methodological approach of concept-ing contribute to deeper understandings of technologies in media studies. It identifies the moments, practices or discourses that act as thresholds between standardized operations – the affordances or the perceived neutrality of technology – and the disruptive, reorganizing malpractices. What happens when we begin identifying the concept-ualization processes, realizing the human control embedded within them, and begin concept-ing? When we begin to reorganize, not only theory, but practice? In conclusion, concepts open up to new, rhizomatic understandings of practices, enable sensibilities to different materialities and pay attention to new relations as they call back on themselves. The concept as method is processual, fragmented, and disorganized. It is about reorganizing these systems of

abstractions, disassembling, and reassembling into new formations. It is the play with anticipation and unpredictability.

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Digital Milieus: A Posthumanist Media Ecology for a Planetary Computation Era

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Abstract

Media ecology introduced a fresh perspective to media studies, previously dominated by content analysis, effects research, ideologies, and flux studies. This approach allows us to understand media in a non-linear manner, seeing them as constructors of our everyday contexts rather than mere tools for specific purposes. Despite this shift, classical media ecology often views media as information transmitters for discrete human beings, rooted in modern humanist rationalism. This article suggests that a posthumanist approach to media ecology can help overcome modern anthropocentrism by studying the mutual ontogenesis between humans and their media environments. This change offers a fruitful framework for studying contemporary media, characterized by ubiquity, hyperconnection, and planetary-scale computing. The analysis emphasizes the interdependence between humans, technology, and the environment, highlighting the diminishing human agency amid automated systems and ubiquitous computing.

Keywords: *Media Ecology; Digital Media; Posthumanism; Individuation; Planetary-Scale Computation*

Introduction

Media ecology, rooted in Marshall McLuhan's seminal work, has long examined how media shapes human perception, interaction, and societal structures. Initially concerned with understanding the impact of media technologies on human consciousness and culture, this field has expanded to encompass broader socio-cultural and environmental dimensions. Traditional media ecology investigates the intricate relationships between media technologies, human behavior, and cultural formations. It explores how media function as environments that envelop and influence users, shaping their experiences and societal norms. This approach has been pivotal in unveiling the profound effects of media on identity, community dynamics, and the transmission of knowledge.

However, despite the shift from a linear to an encompassing view of media, classical approaches to media ecology still often consider media as representational information transmitters for discrete human beings.

This article embarks on a dual exploration. Firstly, it revisits traditional media ecology's humanist and rationalist foundations, which emphasize human agency and the transmission of information. Secondly, it proposes a posthumanist turn, challenging anthropocentric views and highlighting the agency of non-human actors and the entanglements of technology, culture, and ecology.

By embracing a posthumanist framework, this approach promises deeper insights into the transformative impacts of planetary-scale computing. It suggests that understanding media as complex assemblages, involving both human and non-human agencies, is essential for navigating our evolving technological and societal landscapes.

Media ecology and its distresses

In the early sixties, Canadian literary scholar Marshall McLuhan began a theoretical enterprise aimed at understanding human culture and society in light of the technologies they use. From this approach, McLuhan (1962) examined the changes that movable type printing fostered in culture and society during early modernity: by altering the way in which text production is physically produced, movable type printing not only shifted the predominantly aural Western culture into a more visual one, introducing new sensory ratios, but also, by transforming text production from a whole entity into a juxtaposition of discrete types, it prompted a complete overhaul of human cognition. This discretization of text had already commenced with alphabetic writing, but was amplified by print, which, according to McLuhan, "exists by virtue of the static separation of functions and fosters a mentality that gradually resists any but a separative and compartmentalizing or specialist outlook" (126).

Even though *The Gutenberg Galaxy* (1962) primarily focuses on the cultural consequences of the introduction of movable type printing in Western societies, McLuhan clearly states that this analysis is merely a specific case of a general media theory that understands culture and society in relation to the changes in sensory ratios introduced by new technologies. This general media theory is further developed in his subsequent works, especially in *Understanding Media* (2003), whose subtitle posits his general understanding of media as "extensions of man," meaning extensions of human capacities: writing extends memory, film and light bulb extend vision, cars extend legs.

In his examination of these extensions, McLuhan is particularly interested in how new media interact with others:

> Media, as extensions of our senses, institute new ratios, not only among our private senses, but among themselves, when they interact among themselves. Radio changed the form of the news story as much as it altered the film image in the talkies. TV caused drastic changes in radio programming, and in the form of the *thing* or documentary novel (76).

Thus, McLuhan's media theory is not merely a theory to study any specific medium and its relationships with human societies, but one oriented toward studying media in relation to other media and how these new relationships affect human societies, by altering human environments and creating entirely new ones. [2]

Building on the concept of technology shaping human environments, a few years later, McLuhan's disciple, Neil Postman (1970), coined a name for this new approach: "media ecology." According to Postman, media ecology

> looks into the matter of how media of communication affect human perception, understanding, feeling and value, and how our interaction with media facilitates or impedes

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[2] I find interesting to note that, in the introduction of later reprints of *The Gutenberg Galaxy* (the earliest I found is the 1969 reprint, which is not a new edition, but has a two-paragraph addition), McLuhan states that the word "environment" would have been a more advantageous choice than "galaxy".

our chances of survival. The word ecology implies the study of environments: their structure, content and impact on people.

An environment is, after all, a complex message system which imposes on human beings certain ways of thinking, feeling, and behaving. It structures what we can see and say and, therefore, do. It assigns roles to us and insists on our playing them. It specifies what we are permitted to do and what we are not (161).

In subsequent years, this media ecology was further developed by other media scholars. Naming just a few: Walter Ong (2002), another disciple of McLuhan, studied writing as a technology and its effects on culture; J. T. Mitchell (2005) expanded the role of the extensions, stating that "McLuhan's notion of media as 'sensory ratios' needs to be supplemented with a concept of 'semiotic ratios', specific mixtures of sign functions that make a medium what it is" (261); and, Henry Jenkins (2003, 2006) analyzed how, with digital media, different media converge, reshaping culture and favoring different ways of transmedia storytelling.

The ecological approach to media brought a fresh perspective to a context of media studies dominated by content analysis, effects research, ideologies, and flux studies. This approach enables us to understand media in a less linear manner, not merely as instruments for specific purposes nor just as tools for domination[3] but as constructors of our everyday contexts. However, despite the departure from the somewhat linear approach of the effects and ideology studies and the excessive interest in semantics and pragmatics of content analysis and the embrace of an encompassing view of media, classical approaches to media ecology maintain certain aspects of the rationalistic and anthropocentric modern tradition.

Even when media ecology proposes that media constitute the environments where humans are, the idea of media as extensions of man posits humans as the center of the environments, with media being just technologies attached to him,[4] as mere prosthetic add-ons. Additionally, traditional media ecology often considers media as representational information transmitters for discrete human beings and disregards other kinds of beings and their key role in the conformation of media environments as well as their entanglement with humans.

In this way, classical media ecology remains anthropocentric, representational, instrumental, and transmissional, firmly anchored in the modern rationalistic, and liberal intellectual tradition (Moreira Alonso, 2021). Nevertheless, the general approach of media ecology and concept of media environments remain valuable for any media theory aspiring to move beyond the modern humanist tradition of rationalism. It simply needs to get rid of its representational and transmissional background, which, I believe, can be achieved by embracing a posthuman approach.

Posthumanism and media studies

Posthumanism emerged at the end of the past century as a new way to understand human beings and their relationships with other beings (non-human animals, technological objects, the planet Earth, to name just a few), as well as a deconstruction of the concept of the human itself. This new understanding is rooted in the anti-humanism of Marx and the critique of any human essentialism in psychoanalysis and post-structuralism, rejecting the dichotomies around which modern philosophy revolved, especially the Cartesian dichotomy of res cogitans and res extensa, or, in other

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[3] However, they may be very good at this.
[4] McLuhan writes "man", so, it seems to be a him. The man to whom media are extensions is an able western man.

words, mind and body, as well as other neural dichotomies of modernity, such as self/other, truth/illusion, civilized/primitive, man/woman, culture/nature (Haraway, 1991).

Posthumanism states that the modern idea of the human is not synonymous with homo sapiens, a general category that encompasses all human beings, nor even a statistical average, but rather "a systematized standard of recognizability – of Sameness – by which all others can be assessed, regulated, and allotted to a designated social location" (Braidotti, 2013, 26). The human is a white, able, Western heterosexual cis man, the standard, the proper way to be human. In that way, rocks and cats are not human, but neither are those homo sapiens who deviate from this standard, who are, in the best-case scenario, flawed humans. This human is also a rational and reflexive being, the Cartesian subject, autonomous, aware of his own essential nature, and capable of understanding the world around him, which is clearly separated from himself (Hayles, 1999).

To this essentialist and fixed humanity, posthumanism opposes a different mode of existence, one which is fluid, undetermined, hybrid. As Rosi Braidotti (2013) puts it,

> the posthuman condition introduces a qualitative shift in our thinking about what exactly is the basic unit of common reference for our species, our polity and our relationship to the other inhabitants of this planet. This issue raises serious questions as to the very structures of our shared identity – as humans – amidst the complexity of contemporary science, politics and international relations. Discourses and representations of the non-human, the inhuman, the antihuman, the inhumane and the posthuman proliferate and overlap in our globalized, technologically mediated societies (1–2).

Unlike the natural self of modern rationalism, a whole and permanent being, discrete and clearly separated from his environment and other humans, but also from the informational posthuman of classical cybernetics (which maintains the core elements of the rationalistic and liberal conceptualization), we must understand the posthuman as an "amalgam, a collection of heterogeneous components, a material-informational entity whose boundaries undergo continuous construction and reconstruction" (Hayles, 1999, 3).

The special regard of posthumanism towards technology and media (especially digital media) makes it a fruitful framework for media studies, enabling media scholars to study media beyond semantic and representational meanings, favoring the analysis of the ways in which media entangle with people and in which both media and people construct each other. It also allows us to consider all the non-human agents in communication processes as well as, as proposed by Sarah Choukah and Philipe Theophanidis (2016), the possibility of communication without agency.

Incorporating the posthumanist approach into traditional media ecology, we may be able to overcome the centrality of the human in the idea of media as extensions of man, understanding media not as prosthetic attachments that merely enhance already existing capacities, but embedding into them, in a process in which both the human and the medium come into being, or, even better, emerge. A posthumanist turn in media ecology could also account for all the non-human entities that have agency in a given media environment and all the situations in which humans do not, and, at the same time, recognize the myriad of human-machine, human-human, and machine-machine amalgams emerging in a specific environment. Finally, it allows us to drop the understanding of media as exclusively information transmitters and, instead, consider them as elements of individual and collective ontogenesis (Hayles, 1999; Simondon, 2005).

Extensions and embodiment

Opposed to what they called the "rationalist tradition" (where they group, among others, part of analytical philosophy, decision and rational action theory, a big part of cognitive sciences, and, more broadly, the Cartesian rationalist dualist tradition) and to the established practices in computer systems design, which presupposes a user in complete control and an interface that works as a direct translator of the system's internal functions to the user, Terry Winograd and Fernando Flores (1987) developed a new approach to the analysis and design of interfaces by rejecting the conception of computational systems as a mere set of technical processes and interfaces as input and output systems and embraced a conceptualization of computers and their interfaces as functional processes with which humans have cognitive and hermeneutic involvement. Taking the concept of readiness-to-hand (*Zuhandenheit*) from Martin Heidegger (1996), by grasping how to use any given interface, the user does not rationally learn a set of discrete and specific pieces of knowledge and internalize clear and distinct representations of the internal functioning of the system; on the contrary, they acquire new cognitive processes of their own. But, those processes do not correspond to the technical interface but to their previous uses, interests, and their physical and cognitive interaction with the computational system. According to Winograd and Flores (1987), in the use of the system, the user embodies the interface, entangling it with their body as an organic-hermeneutic entity.

N. Katherine Hayles (1999, 2012) takes the concept of embodied cognition from Francisco Varela, Evan Thompson, and Eleanor Rosch (1993), [5] integrating it into her posthumanist theory, making it a basis for her desubstantialization of the body and the human.

> In contrast to the body, embodiment is contextual, enmeshed within the specifics of place, time, physiology, and culture, which together compose enactment. Embodiment never coincides exactly with "the body," however that normalized concept is understood. Whereas the body is an idealized form that gestures toward a Platonic reality, embodiment is the specific instantiation generated from the noise of difference. Relative to the body, embodiment is other and elsewhere, at once excessive and deficient in its infinite variations, particularities, and abnormalities (1999, 196–197).

This move from a definite body toward a contextual embodiment has profound implications for media theories, especially for the study of the interaction between humans and media. Hayles (2012) states that

> our interactions with digital media are embodied, and they have bodily effects at the physical level. Similarly, the actions of computers are also embodied, although in a very different manner than with humans. The more one works with digital technologies, the more one comes to appreciate the capacity of networked and programmable machines to carry out sophisticated cognitive tasks, and the more the keyboard comes to seem an extension of one's thoughts rather than an external device on which one types. Embodiment then takes the form of extended cognition, in which human agency and thought are enmeshed within larger networks that extend beyond the desktop computer into the environment (3). [6]

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[5] Hayles does not directly cite Winograd and Flores, so it is not clear if she read them. But, by taking the concept of embodied cognition from Varela, Thompson and Rosch, (who read them, indeed; actually, Flores and Varela were longtime friends and co-authors), she roots her ideas in the propositions of Winograd and Flores.

[6] She took the concept of extended cognition from Andy Clark and David Chalmers (1998).

In Hayles's works, embodiment is explicitly associated with McLuhan's idea of media as extensions of man. This is notable in the next fragment:

> When we say that someone knows how to type, we do not mean that the person can cognitively map the location of the keys or can understand the mechanism producing the marks. Rather, we mean that this person has repeatedly performed certain actions until the keys seem to be extensions of his or her fingers (1999, 199).

It is easy to understand the McLuhan reference at the end of the quotation; however, I may point out a difference between the usage of the word "extensions" in McLuhan and in the previous quote by Hayles. When explaining how media are extensions of man, McLuhan always focuses on an extension of a previously existing capacity: the wheel is an extension of feet; the phonograph is an extension of voice; radio of hearing, and television of touching; clothing is an extension of skin and housing an extension of the bodily heat-control mechanisms; machine is an extension of human process, and art is an extension of "human awareness in contrived and conventional patterns"; "the arrow is an extension of the hand and the arm, the rifle is an extension of the eye and teeth"; and, in general, orality, scripture, and mass media are extensions of the human central nervous system. [7] If media and technology are extensions of already existing capacities, the human remains as a thing-in-itself which, in certain circumstances, gets attachments that expand some of his properties.

I would assert that, in the example of Hayles, the keys as extensions of the fingers work less as an extension of the already existing abilities of the human and more as the emergence of a new one; the fingers (or the user of the keyboard) weren't able to type before the first time they did. Actually, as Hayles posits and everyone who had ever been in front of a keyboard may concur, the whole experience of typing for the first time is a very frustrating one, a lot of time looking for a key that is right there, several spelling mistakes, and the necessity of looking at the keyboard for the whole time. It is in the use that the capacity emerges; in this way, the human as a part of their environment is never a thing-in-itself but rather an impermanent entity, always becoming into being.

Furthermore, where each of them chose to locate the extension may be taken as another evidence of the distinction I make. In the chapter dedicated to the typewriter (of all the technologies he analyzes in *Understanding Media*, the one that can be easily related to the typing of Hayles example), McLuhan writes about poetry, fashion, industry, print, and its specialization and fragmentation impacts, orthography, and grammar, but never about the fingers. And this is understandable; at the end of the day, with extensions of man, McLuhan means extensions of the capacities of man, and the fingers are not a capacity.

Whereas McLuhan's conceptualization of extensions is reified in anthropocentric traditions, the use of the term by Hayles entails an entanglement between the human user and the technical environment. Therefore, even when I understand and completely agree with the outline of the typing learning process that Hayles does, I wouldn't agree with her use of the word "extension" and the rooting of the process in McLuhan's conception of media as extensions of man.

In this way, by displacing the idea of media as extensions and embracing the relationship between humans and media as an embodiment engagement, media theory can focus on the mutual ontogenesis occurring between humans and media in a way that does not prioritize the human.

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[7] This list of extensions may seem unnecessary long, but I wanted to show how, even in the variety and complexity of the concept of extension of man, McLuhan is always talking about extensions of already existing capacities.

The individuation of technical objects

In order to understand how the ontogenesis of humans and media occurs, Hayles refers to Gilbert Simondon. According to Simondon (1989), the ontogenesis of technical objects is a continuous process of concretization (the transition from an analytical structure to a functional one) in which conflicts between the object and the environment in which it operates, its milieu, are resolved.

> This milieu, both technical and natural, can be called associated milieu. It is that by which the technical being conditions itself in its functioning. This milieu is not manufactured, or at least not entirely manufactured; it is a certain regime of the natural elements surrounding the technical being, linked to a certain regime of the elements constituting the technical being. The associated milieu is mediator of the relationship between the manufactured technical elements and the natural elements between which the technical being functions (57).[8]

According to Simondon, the milieu is not the physical or historical context in which the technical object is situated; it encompasses a dynamic and relational framework that influences the development and organization of individuals and systems, being a crucial aspect of the ontogenesis of the technical objects, which establish a relationship of recurrent causality (*causalité récurrente*). This type of recurrent causality is identical to the one humans establish with their own milieu, resolving potentialities by, as well as being modified by, modifying the milieu and themselves through the development of abilities that allow them to continue their individuation, as happens in Hayles' example, where the user has to develop new abilities by embodying the keyboard.

As Haraway, Braidotti, and Hayles concur, the human is not a definite and immutable substance but an entity in continuous process. Simondon would agree with this, but would have expanded it to include any kind of individuals, natural, technical, and living. For him (2005), any individual is an emergent result of the resolution of potentialities present in the milieu and, hence, does not exist in a state of stability but of metastability, prone to change, as tensions inside the individual or between the individual and its milieu ignite new processes of dedifferentiation (*dédifférenciation*).

> The individual would then be understood as a relative reality, a certain phase of being that supposes before it a pre-individual reality, and which, even after individuation, does not exist completely alone, because individuation does not exhaust all at once the potentials of pre-individual reality, and, on the other hand, what individuation brings forth is not only the individual but the individual-milieu couple. The individual is thus relative in two senses: because it is not all of being, and because it results from a state of being in which it did not exist either as an individual or as a principle of individuation (24–25).[9]

The relation between individuals and their associated milieus seems much denser and more complex than the environment of McLuhan, Postman, and most traditional media ecologists. That is why I

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[8] My own translation from the French original: "Ce milieu à la fois technique et naturel peut être nommé milieu associé. Il est ce par quoi l'être technique se conditionne lui-même dans son fonctionnement. Ce milieu n'est pas fabriqué, ou tout au moins pas fabriqué en totalité; il est un certain régime des éléments naturels entourant l'être technique, lié à un certain régime des éléments constituant l'être technique. Le milieu associé est médiateur de la relation entre les éléments techniques fabriqués et les éléments naturels au sein desquels fonctionne l'être technique".

[9] My own translation from the French original: "L'individu serait alors saisi comme une réalité relative, une certaine phase de l'être qui suppose avant elle une réalité préindividuelle, et qui, même après l'individuation, n'existe pas toute seule, car l'individuation n'épuise pas d'un seul coup les potentiels de la réalité préindividuelle, et d'autre part, ce que l'individuation fait apparaître n'est pas seulement l'individu mais le couple individu-milieu'. L'individu est ainsi relatif en deux sens: parce qu'il n'est pas tout l'être, et parce qu'il résulte d'un état de l'être en lequel il n'existait ni comme individu ni comme principe d'individuation".

would rather use the term milieu than environment to refer to the complex ensembles of humans, machines, non-human living beings, and geological, geographical, atmospheric, and extraplanetary beings involved in contemporary media processes. This change stresses the move from a conception in which any given medium establishes relationships with other media but maintains an essential individuality, to one in which media are profoundly related in an ontological way, not just between themselves, but with the entire milieu, which would not be only the immediate physical context, but all the functional relationships that make them be.

In this way, the milieu of moveable type printing and of the typographic man is extended to more than literate culture, previous printing technology, paper, mining, wood carving, weaving, rocks, forests, agriculture, the Mediterranean Sea, lead poisoning, and also Martin Luther and the nation-state. But, more importantly, the moveable types print and the typographic man are not just intertwined with each other and their milieus, but are collectively individuated by their becoming process in which the tensions present in the codex are resolved in a more efficient way than with the pecia system and woodcut printing.[10]

Digital milieus

Yuk Hui (2016) initiates his inquiry into the ontogenesis of digital objects by analyzing the digital milieus in which these objects come into being. Hui discerns the differences between digital objects (composed of code) and technical objects studied by Simondon (which are ultimately apparatuses physically in contact with the rest of the world), and therefore, suggests that their concretization processes must be understood differently. To do so, he focuses on the systems of relations and ontologies instituted by markup languages, the semantic web, and, I would add, machine learning models. He proposes that the milieu in which digital objects come into being, what he calls the digital milieu,[11] is constituted by "the multiple networks, which are connected together by protocols and standards" (26). By acquiring new metadata labels (whether human or machine-made, situated in external files such as XML or RDF, or in the header of the file) or new relations (links, parentings, embeddings), objects are individuated through the increase of information that makes them more concrete and more interwoven with their milieus.

At the electronic level, I mean, in the mere piece of hardware, there are only continuous electric charges, or the absence of them. It is because of the existence of these standards and protocols that digital objects become computable (the continuous charges are translated into discrete zeros and ones), processable (the zeros and ones are transformed into low-level programming functions), and phenomenologically available (the functions are turned into things that users can interact with). It is only within a specific digital milieu that the pre-individual voltages in a silicon plaque, binary operations made by the assembler, and code fragments processed by the operating system resolve their tensions and become individual plain text files, videos with external subtitles, or entire websites. Moreover, as Agustín Berti and Javier Blanco (2013) point out, the mode of existence of contemporary digital objects, in which they are collaboratively created, cloud-distributed, and massively consumed/used (their socio-historical milieu), is only possible because of the massification of the standards and protocols developed by the computing industry and standardization organizations (such as the W3C, DCMI, and DDEX).

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[10] On the different book production technologies in the late middle age and early modernity, see Kirwan and Mullins (2015).

[11] It is important to note that, in his study on digital milieus, Hui expands the theory of Simondon incorporating Martin Heidegger's concept of *Umwelt* (usually translated as "surrounding world", but translated as "milieu" by Hui), a move that includes not just the physical and functional context, but also the socio-historical and hermeneutic in the ontogenesis of digital objects.

Simondon (1989) considers that, in their evolution, technical objects can develop hypertely (*hypertélie*), an exaggerated specialization to a certain milieu which maladapts it to any change (even a minor one) in its conditions, like a tire made for cold climates or a glider that requires a carrier plane to fly. In the case of digital objects, there are different levels of hypertely, but it is always present: there are programs with strict software and hardware requirements, file formats that wouldn't work without specific codecs, and low-level languages that only work for specific hardware, not to mention the precariousness of most data storage methods and the error sensitivity of systems based on low redundancy separation of form and content such as HTML and most video and audio processing software. This functional overadaptability poses a threat to a digital-based culture because digital objects are very susceptible to compatibility problems, obsolescence, licensing, and bugs related to metadata and file addressing.

Hui's perspective on digital milieus originates from his inquiry about digital objects, so it is understandable that the conceptualization is mostly software-related. However, even when software can seem to be somewhat functionally autonomous at a certain level of complexity, it is a mistake to disregard that modern computation requires both hardware and software, and that we should avoid what Blanco and Berti (2016) call "digital dualism," an actualization of the core dualism of modern humanism, Cartesian *res cogitans–res extensa*. Consequently, I prefer to expand the concept of digital milieus from the milieu of digital objects to the milieu of digital media, complex metaobjects that assemble components of different natures: electric, electronic, thermodynamic, mechanical, coding, and since they are fully integrated into culture, visual, aural, narrative, instrumental, and much more.

Additionally, building on Hui's ideas of the objectification of data and the datafication of objects, I can include in this digital milieu not just classical computers, but also any other device integrated into the networks of standards and protocols, such as the engine of an airplane that continuously checks for malfunctions in order to inform the manufacturer when service is needed, or a home with automated appliances controlled by a computer system or the homeowner via a smartphone app.

Digital milieus for planetary computation

Which would be the individual in a study of the genesis of digital media? The first intuitive answer may perfectly be each compound device, including its computation and interface hardware and software, that may be considered components, and which may conform with other connected devices (printers, microphones and webcams, other computers connected in local networks) an assemblage (what Simondon calls *ensemble*). Following this, the digital milieus of digital media may be composed of the electric grids, the computer-oriented furniture and also (adopting the expanding of Simondonian milieu adding Heidegger's *Umwelt*, as Hui proposes) the different aspects of social and cultural life that affect technical development and usage practices.

I think this may have been a good answer twenty or fifteen years ago, when internet connection was still mainly a human-driven activity and cloud and ubiquitous computing were little more than an idea. But in contemporary computation, this results in an excessively reductionist conception that ignores the high level of integration of computers and the interdependency between them. Nowadays, almost all of the computers we use every day (from my phone and laptop to the air conditioner in my living room connected to Google Home that starts cooling automatically when I am reaching home in a hot summer afternoon) depend on other systems that, in turn, depend on other systems, and so on. Additionally, a growing number of the functions of those computers at

any level (not just logical calculus and programming instruction resolve, but also highly symbolized and socially relevant activities) are becoming more and more automatically controlled by some of those other systems which automatically feed on data from those computers.

On that premise, Benjamin Bratton (2016) proposes that:

> Planetary-scale computation takes different forms at different scales — energy and mineral sourcing and grids; subterranean cloud infrastructure; urban software and public service privatization; massive universal addressing systems; interfaces drawn by the augmentation of the hand, of the eye, or dissolved into objects; users both over-outlined by self-quantification and also exploded by the arrival of legions of sensors, algorithms, and robots. Instead of seeing all of these as a hodgepodge of different species of computing, spinning out on their own at different scales and tempos, we should see them as forming a coherent and interdependent whole (4–5).

The current development of long-scale computer networks has reached a state in which the different devices have lost their individuality and become part of an emergent megastructure, [12] a megastructure that Bratton names "The Stack". This Stack is not composed only of devices and the cable, antennae, and satellites that connect them; it also comprises, among others, the raw minerals extracted to create components; the rivers, winds, fissile materials, and other sources of energy for its functioning; the new geographical landscapes it produces, as well as the urban ones; the new political formations and sovereignty claims it enables; the semiotic, symbolic, and hermeneutic configurations that institute; and the final users (of both kinds, humans and non-humans) that engage with them and, at the same time, feed it with data for its algorithmic governance.

The Stack operates at a planetary scale but does not institute a geography but a topology; it is composed of superimposed and interconnected layers. Those layers are, from the phenomenological to the geochemical:

> At the top of any column, a *User* (animal, vegetable, or mineral) would occupy its own unique position and from there activate an *Interface* to manipulate things with particular *Addresses*, which are embedded in the land, sea, and air of urban surfaces on the *City* layer, all of which can process, store, and deliver data according to the computational capacity and legal dictates of a *Cloud* platform, which itself drinks from the *Earth* layer's energy reserves drawn into its data centers. Paths between layers are sutured by specific protocols for sending and receiving information to each other, up and down, that do the work of translating between unlike technologies gathered at each plateau (Bratton, 2016, 67–68).

The interdependency of all the devices in contemporary planetary computing takes us from multiple ensembles in a network-based milieu to one huge individual that involves more than just apparatuses, protocols, and interfaces. Humans are, as much as rocks and data centers, also part (at least, partially) of this huge megastructural individual; they are individuated by it and, at the same time, contribute to its individuation. Humans as part of the user layer have some degree of agency, but two things have to be pointed out. First, humans are not the only thing in the user layer; a traceable cow, an ore extracted and processed by an automated mining system, a crop field supervised by semi-automatic means, a submarine beacon, all these things are generating inputs that make The Stack work, and some are also receiving outputs that instruct or suggest how to behave.

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[12] Bratton writes "accidental megastructure", but I prefer to use "emergent," which still recognizes the non-volitional nature that Bratton attributes to change, but I place emphasis on it as ontogenetic.

Secondly, humans, like any other element of the *User* layer, have significantly less agency and awareness of their involvement than is commonly thought. This is not only due to the growing number of decisions made by automated systems in other layers, but also because human users generate inputs and receive outputs that they are unaware of and cannot control.

On the other extreme of The Stack, at the *Earth* layer, this emergent megastructure is draining the planet of its resources in order to expand and maintain its functioning. It depends on the wind, solar, tidal, nuclear, biochemical, geothermal, and fossil power to function, on the lithium, silicon, and rare-earth materials to incorporate new components, on water, air, and ice to cool the processors, and, at the same time, it generates tons of greenhouse gases, electronic waste, and metallic dust that poison the air, the soil, and the water streams. As stated by Jussi Parikka (2015), contemporary media are a core part of the Anthropocene and are rooted in the long stories of colonialism, extractivist capitalism, environmental devastation, and workforce exploitation.

Just as, following McLuhan (2003), the wheel and the printing press played significant roles in the consolidation of urban centers and nation-states respectively, this emergent megastructure of planetary computation shapes a new scale and form for human associations. It introduces a new regime of superimposed sovereignty claims, leading to new geopolitical dynamics (Bratton, 2016). New actors arise and dispute with nation-states, as evidenced by the conflict between China and Google and, more recently, between ByteDance and the United States. This shift also changes the socio-political role and agency of individuals, who are still citizens but also platform clients and sources of raw data to be harvested. It weakens the social bond within nations while simultaneously strengthening transnational communities based on commonalities other than nationality, thereby challenging some of the main foundations upon which modern philosophical anthropology was built.

Rethinking media ecology

Changes in media over the last decades compel media scholars to revise their understanding of media. With the emergence of planetary-scale computation, highly interconnected to the extent of forming a single megastructure, and where human agency is diluted amidst algorithms, data crawlers, ubiquitous computing, and myriad other non-human agencies, contemporary media ecology must move beyond classical approaches and embrace this new complexity. Studies across various media-related fields, from internet culture and sociality to media semiotics and hermeneutics, should expand their understanding of contemporary networked culture. This involves addressing new logics of locality and identity, superimposed jurisdictions of diverse kinds, the continually evolving order of legitimacies, and the involvement of various non-human agencies in the contemporary world.

Moreover, posthumanism provides a framework to rethink media ecology, acknowledging the interweaving of technology, culture, humans and non-human living beings, minerals, and extraplanetary objects. This framework helps comprehend the changes introduced at every scale by planetary computation and move beyond the modern humanism entrenched in traditional media ecology. It encourages the study of humans as non-essential beings in complex processes of transindividuation, and the assessment of instances of non-human agency, along with the often-unconscious interactions humans engage in with all kinds of computers daily.

Some of these changes have been explored by influential authors in the accelerationist movement, such as Nick Srnicek (2017) in his study on platform capitalism and Tiziana Terranova (2014) in her

techno-autonomist call to action. Grounded in Benjamin Bratton's ideas about The Stack, Srnicek and Terranova analyze global connectivity and interdependence in contemporary societies through a planetary computation complex, emphasizing the central role of algorithms and automation. This new media ecology offers a more comprehensive understanding of our social, political, and economic realities compared to traditional analyses based solely on institutions or local movements.

This evolving approach to media ecology contributes to understanding our sociality, which is increasingly intertwined with the multiple layers of The Stack. Algorithms shape our social interactions and how we inform ourselves about social and political events, the gig economy introduces platformization into everyday life, cloud computing disperses our digital assets across data centers around the world instead of local hard drives, and as-a-service models redefine access and ownership dynamics. The planetary media ecology may contribute to understanding the overlapping of these problems, while the posthuman view could deconstruct their common root in the modern paradigm of centralization and control on which systems analysis and design are based, and adopt an approach that acknowledges the collective ontogenesis of users and their milieus.

A posthumanist media ecology also prompts engagement with the Anthropocene and critiques colonial and capitalist extractivism. Building on Siegfried Zielinski's (2008) concept of deep time of media, Jussi Parikka (2015) suggests studying media in a geological manner, focusing on raw materials, energy generation, and global change as integral aspects of contemporary media practices. Thus, this media ecology is not just a metaphorical concept but a proper ecological study.

The emergence of media ecology in the 1960s introduced a fruitful approach to media studies, expanding its scope and fostering new methodologies and research fields. However, traditional media ecology retained core principles of modern humanist rationalism, such as the centrality of humans, their separation from context, and a transmissional view of media. A posthumanist approach to media studies can preserve the valuable contributions of media ecology while simultaneously overcoming this anthropocentrism and addressing more effectively the radical changes in communication technologies that have occurred in recent decades

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