Augmenting the Sociology of Art for the Metaverse:
An Ethnography of Augmented Reality Activist Art

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This dissertation is dedicated to my radiant Momma

TABLE OF CONTENTS

INTRODUCTION

"Just as the entire mode of existence of human collectives changes over long historical periods, so too does their perception."
--Walter Benjamin, "The Work of Art in the Age of its Technological Reproduction"

"Every new technology creates a new environment … The new environment is always creating new archetypes, new art forms, out of the old environment. This process can provide invaluable information for those who want to have some autonomy in controlling their destinies and their environments."
--Marshall McLuhan, "The Invisible Environment: The Future of an Erosion"

"The digital opens up a new ontological register … An infrastructure that … involves a transformation of the institutional structures and cultural logics on which we have relied to produce the forms of evidence, truth, meaning, and time that have traditionally constituted the fabric of the analog world."
--Fernando Dominguez Rubio & Glenn Wharton, "The Work of Art in the Age of Digital Fragility"

"The AR Future is without boundaries between the Real and the Virtual. In the 21st Century, Screens are no longer Borders. Cameras are no longer Memories … Augmented Reality is a new Form of Art, but it is Anti-Art. It is Relational Conceptual Art that Self-Actualizes. [I]t is Hidden and must be Found. It is Unstable and Inconstant. It is Being and Becoming, Real and Immaterial. It is There and can be Found – if you Seek It."
--Manifest.AR collective, "AR Art Manifesto"

This ethnography explores how new media activists leverage augmented reality art to pursue a diverse range of social and political goals. The three discrete journal articles that comprise this dissertation are in conversation with different sociological literatures, and

contribute different arguments that I'd like to connect for my reader with this introduction. First, however, I'd like to provide some contextual notes regarding the sociopolitical climate that my research participants and I experienced as this project was conducted. A significant dimension of ethnographic work concerns the way that the ethnographer's subjectivity is interwoven throughout the research process (Madison 2005), which ought to be made explicit as findings and interpretations are presented. This project was carried out during a time when both my research participants and I confronted unprecedented social and political events together. Our shared experience of the events permeated our conversations, and often sustained the rapport I was able to establish with them as we discussed their activism and their art.

I conducted this research at the peak of the COVID-19 pandemic remotely from Charlottesville, Virginia. During the global health crisis, the United States was locked down during Donald Trump's tumultuous presidency. Fascism was palpable as underrepresented communities experienced targeted violence, and the Black Lives Matter movement was fervent following the murders of Black individuals including Breonna Taylor and George Floyd. My experience as a white woman was marked by fear, stress, anger, and trauma throughout data collection and analysis. Several members of my family died from the virus as I conducted this project. The 30 artists I met with were vulnerable and generous throughout the process. My research participants were also in pain, and our research interviews often felt emotionally heavy as they shared stories of their personal grief and traumas that motivate their activism. While they invited me to learn more about their activism and artistic practices, I frequently relied on my background as a licensed psychotherapist, in addition to my qualitative research training, to maintain emotionally safe spaces for them to share their perspectives. This dissertation is infused with this cultural context.

Amidst the sociopolitical context outlined above, another significant shift was underway. As my research participants and I found solace in our remote video calls during a period of immense social isolation and political uncertainty, our lives were abruptly shifted online like never before. Just as the global pandemic forced many of us to migrate our lives from the physical world to the digital realm of Zoom meetings during social distancing, the tech industry experienced an unparalleled wave of investment in what has been termed the "metaverse."

Augmented Reality Activist Art & the Metaverse

In October 2021, Mark Zuckerberg announced that Facebook would henceforth be rebranded as *Meta*. It was a timely coincidence that my research on this topic began prior to Meta's rebrand. With this announcement, Zuckerberg confirmed what tech insiders have known for years—the next stage of the internet, or "Web 3.0," will signal an unprecedented shift in our relationship to ubiquitous computing technology that is fundamentally immersive. Though still in its infancy, the Web 3 phase of the internet will accelerate the 3D capacities of the "spatial web"—the next wave of connected experiences that will blend the physical and digital worlds to produce the metaverse. By combining elements of the virtual and physical worlds to produce new forms of reality, the Web 3-based metaverse is expected to transform the ways we communicate, socialize, shop, learn, work and play. Yet, when Zuckerberg announced that Meta would commit to building the metaverse, he introduced an extant, though niche, term into the mainstream lexicon. Although the metaverse does not yet exist, entrepreneurs, engineers and artists have been building its technological foundation for decades with Web 3-based extended reality (XR) technologies like augmented reality (AR), virtual reality (VR), and mixed reality.

Before we proceed, let us briefly define these technologies to ensure that my emphasis on augmented reality, in particular, is situated amongst other forms of immersive technologies that constitute the Web 3 phase of the internet. For the purposes of this study, I will refer to the full spectrum of Web 3 technologies that join physical and digital realities with the contemporary term "extended reality" or XR (see Figure 1 below). I will refer to augmented reality and augmented virtuality experiences as "augmented reality," or AR (see Figure 2 below). Environments that are entirely virtual, with no real-world elements, are termed "virtual reality," or VR (see Figures 3 and 4 below).[1] Notably, the research participants in this sample share an affinity for AR technology, rather that VR technology, for reasons I explore in more detail in Article 2.

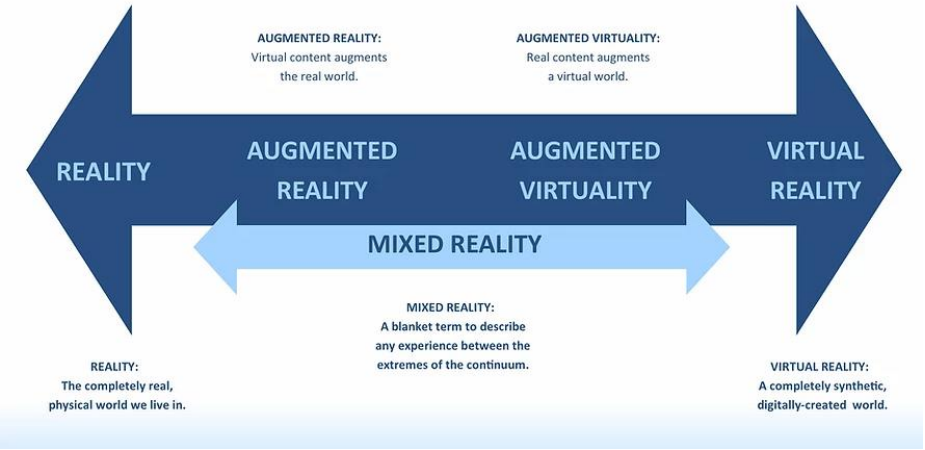

Figure 1. Depiction of Milgram and Mishino's (1994) Continuum of Mixed Reality Technologies (Bambury 2017)

[1] The related term "mixed reality" will be reserved for those augmented reality and augmented virtuality experiences that consist of interactive digital assets that users can manipulate, as opposed to static digital assets.

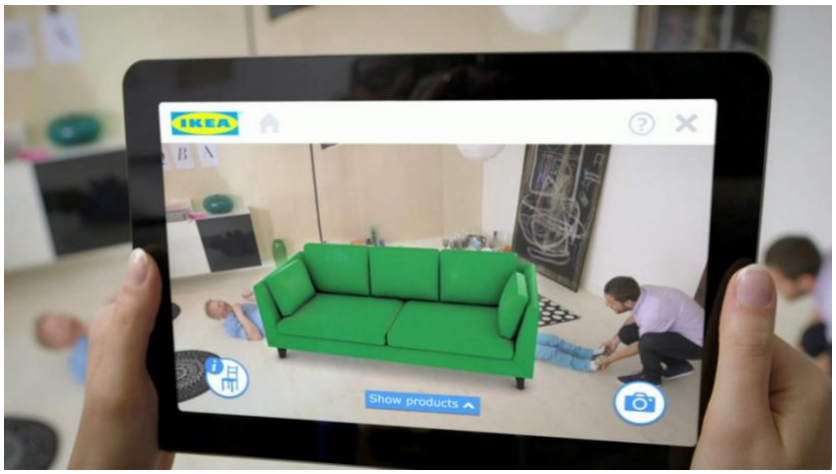

Figure 2. An example of an augmented reality experience featured in IKEA online marketing (Brynley-Jones 2016). Digital elements, or "assets," are overlaid on the physical world. The viewer (typically referred to as a "user" in this case) must rely on an interface to view this augmented reality.

Figure 3. Meta CEO Mark Zuckerberg demos the company's Quest 2 virtual reality hardware headset and controllers.[2]

[2] To learn more, visit: https://www.pcgamesn.com/zuckerberg-wants-meta-quest-2-to-start-100-billion-vr-business

Figure 4. Example of a virtual reality experience in Meta's Horizon Worlds experience depicting users sitting around a virtual campfire.[3] User access such experiences by wearing virtual reality hardware demonstrated in Figure 3.

This ethnographic study demonstrates that among the earliest architects of the metaverse exists an underacknowledged cadre of new media artists and activists whose avant-garde political practices model a critical relationship to the coming metaverse. Positioned somewhere between technological utopia and dystopia, today's augmented reality artists and activists (referred to with the portmanteau "ARtists" throughout) share an understanding of the metaverse as an imminent and inevitable phase of the internet that will profoundly change our everyday lives. The 30 participants in this ethnographic sample frequently observed that the average user lacks the "literacy" required to navigate the kind of reality that will characterize the metaverse. As the transition to Web 3 progresses, ARtists possess a sense of responsibility to leverage their early fluency and familiarity with AR to build experiences that will prepare others for this immersive future. Though Big Tech companies primarily control the technological architecture for the coming metaverse, ARtists seek to empower the average user with the embodied

[3] To learn more, visit: https://mixed-news.com/en/metas-horizon-worlds-gets-closed-member-areas/

knowledge that will be required to critically navigate this highly immersive version of everyday life. Their ARt interventions, therefore, can be thought of as countervailing modes of seeing, sensing, and traversing the metaverse in ways that thwart and resist Big Tech's monopolization of this immersive frontier.

Although augmented reality art is colloquially associated with the spectacle of Pokémon Go, or the Snap and Instagram filters that punctuate our social feeds, a notable, though vastly underexplored, impulse runs throughout what we might term the "first wave" of augmented reality art. Since the early work of the inaugural augmented reality art collective Manifest.AR, [4] artists and creators have used AR to generate ARt that explores themes of power, cultural identity, gender, race, climate change, and critical history. Artist collectives like Manifest.AR and Movers & Shakers NYC[5] have leveraged augmented reality technology to give form to alternate sociopolitical realities that they hope will prefigure real change. Examples of their ARt interventions include digitally infiltrating canonical artistic spaces like the Venice Biennale to protest cultural elitism, reversing the melting glaciers in Alaska to protest climate change, and virtually reinstalling the Goddess of Democracy sculpture that was erected by students during the 1989 Tiananmen Square uprising at its former location in Beijing. (See Figures 5 and 6 for early examples of augmented reality activist art).

[4] See Manifest.AR co-founder Mark Skwarek's (2014) chapter, "Augmented Reality Activism" for a comprehensive introduction to the collective's work and objectives.
[5] See the nonprofit's website here: https://www.moversandshakersnyc.com/

Figure 5. "Goddess of Democracy" Sculpture from 1989 Tiananmen Square Uprising Re-installed with Augmented Reality Technology (McWhirter 2018)

Figure 6. This triptych illustrates an empty Wall Street in New York City that is augmented with protestors during the Occupy protests in 2011.

Research Questions

This dissertation consists of three separate journal articles, rather than successive manuscript chapters that culminate in a single argument. Each article contains its own literature

review, argument, abstract, references, and figures that are intended for publication separately. Each article contains findings that were generated from my ethnographic interviews and observations with a sample of 30 interdisciplinary activists and artists as they shared their ARt with me. Taken together, all three articles are motivated by the same central research questions related to the emerging practice of augmented reality activist art, and the relationship between meaning and materiality.

Taken individually, the three articles correspond to three related goals of this project. The first article was written to illustrate this project's methodological goals, the second underscores the project's empirical goals, and the third demonstrates the project's theoretical goals. Article 1 (methodological in scope), "Making Sense of ARt: A Methodological Framework for the Study of Augmented Reality Art," was published by Springer in 2022 in the third edition of *Augmented Reality Art: From an Emerging Technology to a Novel Creative Medium* (Goffinski 2022). It is included here with minor modifications. Article 2 (empirically oriented), "Building a Critical Metaverse: Augmented Reality Activist Art & the Emergence of Web 3 Activism," and Article 3 (theoretically oriented), "Augmenting the Sociology of Art for the Metaverse: Materiality, Meaning & the Future of Aesthetic Experience," have not yet been published.

Prior to conducting this research, I had to make conceptual decisions regarding the parameters of my case. I could have opted to operationalize augmented reality activist art in several ways, all of which corresponding to different literatures and specialties—art, activism, social movements, new media theory, political sociology, cultural sociology, science & technology studies, media studies, critical design, phenomenology, human-computer interaction (HCI), aesthetics, and so on. Future research may be informed by different commitments, thereby resulting in different research questions and, of course, empirical and theoretical claims.

Above all, my decisions were informed by my intellectual commitments to explore the concept of aesthetic experience, and its sociological and political significance to social actors. As I prepared to conduct this research, I surveyed interdisciplinary literatures related to aesthetic experience across sociology, anthropology, art history, philosophy, and media studies. Against the approaches of scholars of aesthetics like Immanuel Kant (1790), John Dewey (1934), or Herbert Marcuse (1977), I began to take issue with normative accounts of aesthetic experience that reify the concept as a given, *a priori* dimension of human and social life. Though these classical accounts mobilize the concept of aesthetic experience for different theoretical ends, they share a notion of aesthetic experience as a discrete form of human experience that harnesses one's perceptual faculties toward an (often artistically beautiful) emotionally captivating gestalt. It follows that these charged moments are often theorized alongside romantic hypotheses regarding their potential to culminate in personal edification or enlightenment, whether artistic, spiritual, or political.

At the opposite end of the spectrum of normativity, I surveyed literature in the sociology of art that altogether dismissed the significance that social actors ascribe to aesthetic experiences in the vicinity of cultural artefacts. The work of scholars like Pierre Bourdieu (1977, 1984) and Howard Becker (1982, 2006) gave me the impression that they'd overcorrected for the romanticism that previously punctuated the literature related to aesthetic experience. Against this intellectual background, I pursued alternative accounts of aesthetic experience to inform my dissertation research. I developed an affinity for the work of scholars like John Berger (2008), Alfred Gell (1998), Niklas Luhmann (2000), Guy Debord (2021), Antoine Hennion (2002, 2005), Fiona Greenland (2016), Maurice Merleau-Ponty (2002), and Don Ihde (1990, 1993) who

contemplated the social, political, and phenomenological significance of our relationship to material artefacts from more nuanced analytical vantage points.

Thus, I embarked on this project without normative commitments to a reified, ahistorical concept of aesthetic experience. I was merely guided by a hypothesis that artists who produce art for social and political reasons might have something to teach sociologists about the role that aesthetic experience plays in the meaningful lifeworlds of social actors. Partly in response to the work of media theorist and ethnographer Ingrid Richardson (2005, 2010, 2020), I opted to conceptualize aesthetic experience as a dependent variable, so to speak, that warrants ongoing ethnographic exploration in an era where digitally mediated, immersive aesthetic experiences are proliferating at an unforeseen pace. Richardson's corpus led me to the work of scholars Mark Hansen (2004, 2006) and Sarah Pink (2015a; Pink, Ardèvol, and Lanzeni 2020) who similarly call for medium-specific accounts of highly mediatized aesthetic experiences that mark our contemporary moment.

The empirical case of augmented reality activist art was initially intriguing to me because these artists design phenomenologically novel forms of aesthetic experience that they consider to be socially and politically salient. Augmented reality artists and activists have reimagined the political consequences of the "unseen," working beyond the immediate sensory environment to install digital graffiti that cannot be washed clean in the physical world, to set digital fires that cannot be extinguished in the physical world, to install subversive art in canonical institutions that resist removal in the physical world; this is an emerging form of political participation made possible through creatively subversive aesthetic experiences. I had to know *why* the emerging medium of augmented reality was selected by so many artists and activists to advance their sociopolitical projects.

By adopting an ethnographic approach to the study of AR, I assume that our understanding of augmented reality art would be further enriched by conceptualizing ARt as a dynamic, emerging avant-garde, creative *practice* enacted by human beings as they make sense of their lived experiences through technology. Rather than bracketing the ARtist to pursue disembodied studies of augmented aesthetic experiences in analytical or theoretical vacuums, I argue we have much to learn from centering the perspective and expertise of ARtists *qua* practitioners of an emerging form of embodied knowledge. I cannot overemphasize this point, mainly because (1) sociological studies of art have been reticent to deeply engage with the material properties of an artist's work, and (2) interdisciplinary studies of art often bracket the artist's perspective and motivations to critique the art for the art's sake. Alternatively, this dissertation engages with works of art directly, as well as the motivations and perspectives of artists because both are pertinent to a meaning-centered, sociological study of art in the context of the metaverse.

Our point of departure can thus be summarized by several overarching questions to guide the study of ARtistic practices:

1) What kind of *practices* are ARtists enacting or contributing to in our contemporary moment?
2) What sensory, somatic, semiotic, cultural, and political *categories* do ARtists rely on, reflect on, manipulate, subvert, play with, or generate through the augmented aesthetic experiences they create?
3) What are the conceptual, formal, and experiential *conditions* that ARtists mobilize to facilitate contemporary, augmented aesthetic experiences?

4) And finally, how do ARtists use the technology of AR to *reimagine* or *protest* their physical realities through ARt practices?

Participant Details

Between January and October 2021, I conducted remote ethnographic interviews with 30 research participants, and experienced hundreds of works of augmented reality art. I recruited the participants via email and social media, inviting them to participate in a research interview related to augmented reality activism, and their use of AR technology to advance causes that were socially, politically and/or globally salient to them, broadly defined. I utilized the snowball sampling technique to obtain contact information for prospective participants throughout the data collection process (Biernacki and Waldorf 1981).

Interviews lasted between 1 to 5 hours (sometimes distributed across multiple meetings), during which time we utilized audio and video features of remote video chat software. Interviews began with semi-structured research questions, then transitioned into screen-shared demonstrations of participants' augmented reality art experiences as they walked me through their completed and unfinished works. The participants' ages ranged from 24- to 70-years-old. All of the participants were English-speaking, while most were based in North America. Participants were also based in China, Australia, Germany, the United Kingdom, and the Netherlands. Participants self-identified as White or Caucasian (n=16); Black or African America (n=6); Multiracial (n=6); and Middle Eastern (n=2). (For more details regarding this study's research participants, see Article 2, *Appendix B*).

A Note on Format

Drawing on sociologist Kristin Luker's (2009) inductive approach to conceptualizing a nascent research project, I spent the early moments of this project routinely asking myself "What is this a case *of*?" As this research progressed, I realized the case of augmented reality activist art provided me with the opportunity to generate distinct methodological, empirical, and theoretical contributions with this dissertation. Thus, I opted to produce a dissertation utilizing the three-article format rather than a book-length manuscript because the three-article format provided me with the flexibility to do so. I provide my reader with three articles that explore the case of augmented reality activist art through three conceptual lenses—methodological, empirical, and theoretical, respectively.

However, my reader may note a limitation of this dissertation format. This collated document does not adopt the cohesive, narrative arc of a book manuscript. A potential limitation of this dissertation, therefore, is that I have perhaps begun more conversations than I've been able to sufficiently conclude in the course of three journal-length articles. Yet, this was a limitation I was eager to confront as one of the first sociologists to explore a topic replete with both sociological and interdisciplinary significance. Overall, this dissertation probes the phenomenon of augmented reality activism from different conceptual angles that I hope will engage scholars of diverse intellectual backgrounds. These three articles contribute to sociological literatures pertaining to digital ethnographic methods, digital activism, cultural sociology, and the sociology of art. They are also intended to inform nascent, interdisciplinary scholarly debates related to the metaverse.

Article Summaries

Throughout this ethnographic study, I argue that the immersive aesthetic experiences afforded by augmented reality draw on a socially and politically salient form of embodied knowledge that demands ongoing, critical ethnographic study. The three articles in this dissertation leverage a methodological perspective that I've termed "critical sensory ethnography" to explore the relationship between meaning and materiality in the context of the metaverse. Article 1, "Making Sense of ARt: A Methodological Framework for the Study of Augmented Reality Art," introduces critical sensory ethnography in detail. With this article, I extend the sociological and anthropological literatures related to digital ethnography by providing the first medium-specific ethnographic approach to the study of augmented reality art. My motivation for doing so was to address the lack of methodological nuance applied to the study of art created with Web 3 technologies. Scholars of digital ethnography and digital aesthetics often conflate studies of augmented reality art, virtual reality art, and mixed reality art under encompassing studies of "digital art" or "immersive art." Yet, my preliminary research suggested that ARtists espoused an affinity for the medium of AR in particular, in order to successfully convey the sociopolitical messages advanced by their work. My empirical case warranted a more robust lens through which I could see—and sense—the sociopolitical meanings that my research participants negotiated and produced through their augmented aesthetic experiences. Thus, this article assumes that the relationship between meaning and materiality must be explored by explicitly accounting for the materiality of an augmented aesthetic experience, which is not tantamount to a virtual reality or mixed reality experience.

Critical sensory ethnography is the methodological outcome of my attempt to meet the empirical demands of augmented reality art by attending to both the sensory and semiotic

dimensions of my empirical case. This article served as an important intellectual exercise as I interpreted data beyond the represented, the symbolic, and linguistic dimensions of social life. The article begins with a survey of sensory studies scholarship (Howes 1991, 2005; Howes and Classen 2013; Jutte 2005) that shares my commitments to incorporate the full range of semiotic and sensory data into analysis. Digital ethnographer Sarah Pink (2013, 2015b, 2015a; Pink et al. 2016; Pink, Ardèvol, and Lanzeni 2020) is a leading figure in the subfield, whose "sensory ethnographic" approach conceptualizes the ethnographic interview and observation processes as replete with linguistic and extralinguistic data.

Pink suggests that the ethnographic interview and participant observation be reconceptualized as *multisensory* events. Rather than supplant traditional ethnography, Pink deepens extant approaches by insisting that we overlook important sources of ethnographic knowledge if cursory analytical attention is paid to "sense-data," whether they be quotidian or highly significant to our participants. The sensory ethnographer conducts close, qualitative studies of human experience that attend to multisensorial, atmospheric, and embodied forms of meaning making via interviews and observation, but analysis does not simply culminate in the reconstruction of a culture's sensorium. Importantly, Pink also embraces the semiotic and cultural codes that human beings draw upon to imbue experience with meaning. In this way, Pink invites ethnographers to take full advantage of all sources of knowledge and meaning available to us, and to our research participants, to pursue novel, creative accounts of the way that the spoken and tacit dimensions of experience contribute to meaning-making. The resultant sensory ethnographic findings carefully articulate how these dimensions work in tandem as participants make sense of their lived experiences and practices.

Article 1 stops short, however, of inheriting Pink's methodological programme *tout court*. Though a sensory ethnographic approach successfully integrates material and semiotic data into the data collection process, the method provides no guidance for attending to questions of power at the phenomenological level. For this reason, I supplement Pink's sensory ethnographic approach with the critical ethnographic work of D. Soyini Madison (2005), who insists that the ethnographer be oriented to the way that research participants navigate power and inequality at the phenomenological level.

The article concludes with a case study that puts my method into practice. I walk the reader through American artist Steven Christian's "George Floyd AR Memorial," which he created during Portland's ongoing Black Lives Matter protests in the summer of 2020. The application of this framework to Steven's ARt demonstrates how the semiotic and sensory dimensions of an augmented aesthetic experience must be jointly considered to interpret the ARt as a political intervention. Further, by providing a design tutorial to accompany his "George Floyd AR Memorial," Steven mobilizes the semiotic and sensory knowledge that constitutes his ARtistic practice to equip Black creators to build immersive experiences that look and feel germane to them. This dimension of his ARt practice has critical potential in a white-dominated creative space where the technology and defining conditions of immersive meaning- and sense-making practices are constructed and maintained largely without the epistemological contributions of creators of color.

Article 2, "Building a Critical Metaverse: Augmented Reality Activist Art & the Emergence of Web 3 Activism," consolidates the most common repertoires leveraged by ARtists as they hasten the inaugural wave of Web 3-based activism. The article contributes to the literature related to digital activism by providing an early account of Web 3-based digital

activism (Castells 2015; George and Leidner 2019; Meikle 2002; Schradie 2019; Shirky 2008; Tufekci 2014, 2017; Turner 2006). At present, this literature has primarily been concerned with activist repertoires made possible by the Web 1.0 and Web 2.0 versions of the internet. In order to equip scholars of digital activism to engage with this emerging Web 3 wave of activism, four emerging AR activist repertoires are reconstructed in significant empirical detail: (1) engaging the physical world with AR, rather than escaping it with VR; (2) augmenting spaces, not faces; (3) raising the dead to rewrite history; and (4) virtually transgressing institutional boundaries. Each repertoire signals a phenomenological departure from the social media-centric repertoires that characterized digital activism during the Web 2 stage of the internet, in particular.

What's at stake, I suggest, is a deeper account of how today's new media activists leverage AR, specifically, to *remediate* prior modes of digital activist interventions in a metaverse context. Drawing on Bolter and Grusins' (2000) foundational concept of remediation, or "the representation of one medium in another," this article explores how ARtists use AR to produce phenomenologically novel repertoires in a Web 3 context. As we enter the Web 3 stage of the internet, the literatures related to digital activism and new media activist art have scarcely begun to investigate these innovative forms of new media activism beyond the social media-centricity of Web 2 (Silva et al. 2022; Wright 2018). With this paper, I urge scholars of digital activism to consider the following: what might activism look like and feel like in the metaverse, post-Web 2? How will digital activists disseminate information, raise awareness, and generate empathy to pursue oppositional political projects in the future? And what do these new repertoires illuminate about the emerging conditions of meaning-making in the metaverse?

I proceed with my argument that augmented reality activist works of art serve as socially and politically conscious interventions that anticipate a critical version of the metaverse that does

not yet exist, but can be glimpsed episodically with each ARt encounter. These avant-garde forms of augmented reality activism reinforce an important lesson that the initial decades of digital activism have taught us—digital technologies change the landscape of activism by enabling activists to remediate and reimagine traditional activist strategies and repertoires. During the Web 1 phase of the internet, activists were traditionally accustomed to street protests and sit-ins in physical spaces. Web 2 technologies offered new ways to participate politically that complemented the old. Yet, the resultant Web 2-based strategies and repertoires were more than simply online interpretations of traditional protest tactics. Along these lines, I argue that as we look ahead to the metaverse, emerging Web 3-based activist strategies and repertoires must be conceptualized as more than simply 3D analogues of traditional Web 2 tactics anchored by social media. The process of remediation that has already begun to occur with the transition to the Web 3 stage of the internet, therefore, warrants additional analytical attention by scholars of social movements and digital activism to keep pace with the changing technological landscape of contemporary activism.

Importantly, it would be an oversimplification to suggest that activism of any kind is constituted by one repertoire, regardless of whether it is informed by Web 1, 2, or 3. For instance, the ARtists in this study were especially reflexive about the relationship of Web 3 activism vis-à-vis traditional forms of protest. The participants don’t consider their new, experimental form of activism to be an attempt to *replace* traditional forms of protest, but rather an *additive* repertoire that activists might add to their toolkits. Indeed, many of them reported participating in traditional, in-person protests as part of their multifaceted activist practices. This further supports media scholar Leah Lievrouw's (2011) argument that new media activists

remediate activist repertoires by creatively reimagining prior repertoires in an iterative manner through time.

As I outline in the paper, my research participants identify as both activists and as artists. For the purposes of Article 2, my reader will notice that I concentrate primarily on the implications of their ARt *vis-à-vis* previous forms of digital activism, rather than digital art. This decision enabled me to pursue my goal of contributing to the literature related to digital activism, in particular. With Article 3, I further consider the implications of my participants' ARt *qua* artists by engaging the literature related to the sociology of art directly.

Article 3, "Augmenting the Sociology of Art for the Metaverse: Materiality, Meaning & the Future of Aesthetic Experience," contributes to the literatures related to cultural sociology and the sociology of art. In the recent introduction to a special issue of the *American Journal of Cultural Sociology*, Lisa McCormick (2022) challenges cultural sociologists to pursue new directions in the sociology of art. What I find significant about McCormick's call is that although sociologists of art have been issuing similar challenges for decades (Becker 2003; de la Fuente 2007; Wolff 1981), McCormick diagnoses the subfield's intellectual stalemate with an appeal to *cultural* sociologists, in particular. With McCormick, I agree that new directions in the sociology of art are possible by engaging further with cultural sociological debates that explore the relationship between meaning and materiality.

The paper adapts the analytical and theoretical tools of cultural sociology to meet the empirical demands of art that is increasingly designed for the evolving context of the metaverse. If the future of art is digital and immersive, then it follows that the sociology of art should prepare for more meaningful engagement with these empirical transformations brought about by Web 3 technology. I argue that a conceptual shift in defining what the "metaverse" is—and is

not—will be critical to the future of a cultural sociology of art. During this early stage of the metaverse, I propose cultural sociologists of art must break with the sociology of art's previous reliance on spatial metaphors like "fields" or "art worlds," because the metaverse isn't *really* a field or a bounded art world, but a relationship.

Accordingly, the paper surveys cultural sociological approaches to the concept of aesthetic experience in order to develop a novel approach to augmented aesthetic experiences. I construct a theoretical continuum that consists of two poles, each of which represents an approach to the study of relationship between materiality and meaning in cultural sociology. On the one hand is the iconic understanding of aesthetic experience put forth by Jeffrey Alexander (2008, 2010). Alexander's Kantian interpretation of aesthetic experience embraces a metaphysical dualism between material surfaces and cultural depth, and implies that the relationship between materiality and meaning is not symmetrical, but is skewed in favor of extant cultural codes. Material dimensions of aesthetic experiences merely serve to amplify these codes through complementary sensory stimulation.

On the other hand, I juxtapose Alexander's iconic approach to the indeterminate approach to aesthetic experience outlined by Joseph Klett and Alison Gerber (2014). Building on Alexander's iconic conceptualization of aesthetic experience, Klett and Gerber identify a distinction between an aesthetic experience that serves as a mechanism to reinforce or retrieve cultural codes that are evoked by familiar icons (as outlined in Alexander's framework), and an aesthetic experience that operates in a more indeterminate manner. Their findings suggest that something as indeterminate as Noise Music can be analyzed sociologically through the creative theoretical consideration of the structured and contingent practices that constitute it. Rather than explore the rules and codes that explain what Noise Music *represents*, they ask what Noise

Music *does*—their emphasis falls on the experience of Noise Music as an embodied, performative context of expectation.

By constructing a maximal interpretation of a work of ARt by Dutch ARtist Sander Veenhoff, I advance a novel framework to illustrate how augmented aesthetic experiences extend the iconic and indeterminate cultural sociological approaches (see Figure 7 below).

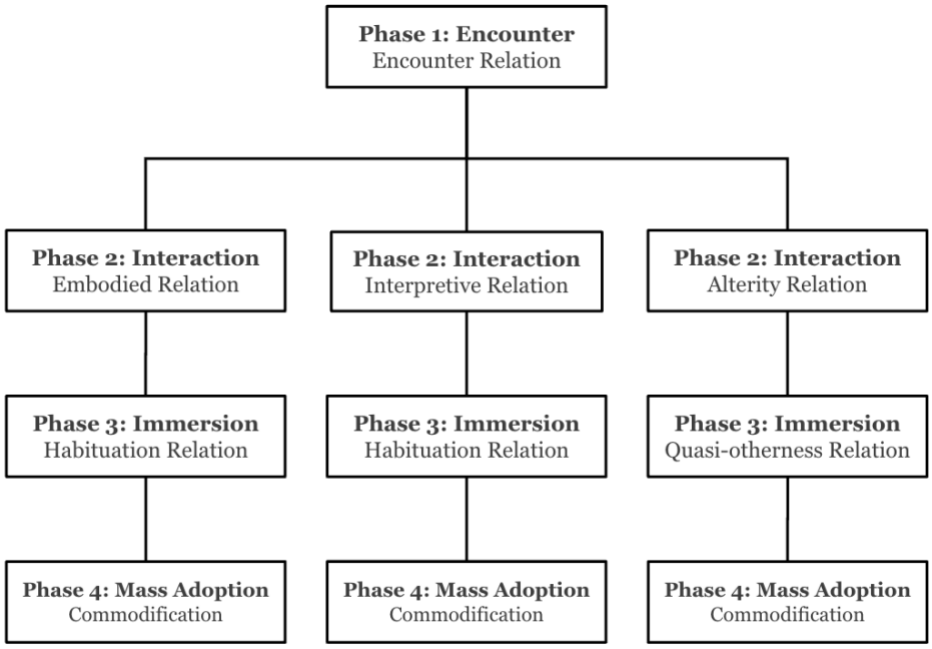

Figure 7. Three Relational Forms of Augmented Aesthetic Experience

With the framework, I introduce additional nuance to the approaches to aesthetic experience that inform both cultural sociology and the sociology of art. The above framework draws centrally on the phenomenological tradition, and the work of philosopher of technology Don Ihde (1990, 1993) in particular, in order to ground the concept of aesthetic experience in the context of a sociohistorically located relationship between humans and their material environment. Further, by drawing on Isaac Reed's (2011) notion of a maximal social interpretation as historically

located and culturally specific, the paper demonstrates that Web 3 technology is gradually introducing a particular set of material conditions during our contemporary moment that must be taken into account due to their mediating effect on the range of interpretive possibilities available to social actors in the emerging context of the metaverse.

Rather than attempt to define aesthetic experience as a static conceptual category, as both the iconic and indeterminate iterations do, I problematize extant sociological approaches with a more dynamic definition of aesthetic experience as a varied and relational phenomenon. My framework illustrates how ARtists design a range of possible experiential conditions that relate humans to (1) their material environment, (2) the range of semiotic interpretations available to them, and (3) the broader sociohistorical trajectory of a technological medium's lifecycle from early experimentation to mass adoption and commodification.

Importantly, I supplement the iconic and indeterminate understandings of aesthetic experience with Ihde's notion of an alterity relation between humans and their material environment. A throughline of this dissertation research is the concern of ARtists that the average user lacks the technological literacy to critically engage with AR technology, which will make them susceptible to a passive, exploitative metaverse relationship that benefits Big Tech. By including an alterity relation as an experiential condition of their work, ARtists like Sander introduce phenomenological friction into the user's experience to invite them to reflect on the medium of AR itself. Much like the work of Guy Debord (2021) and the avant-garde collective the Situationist International, ARtists take their primary site of artistic and political intervention to be everyday aesthetic experience itself, and design subversive, carefully curated moments and situations that shed new light on old ways of seeing and sensing our highly mediatized reality. In this regard, I argue that a cultural sociology of art must continue to account for the mediating

effects of Web 3 technologies on horizons of interpretation as the metaverse evolves toward mass adoption.

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ARTICLE ONE

Making Sense of ARt: A Methodological Framework for the Study of Augmented Reality Art

Alida Goffinski

ABSTRACT For over a decade, artists and creators have leveraged augmented reality technology to protest and reimagine their physical worlds through socially and politically engaged augmented reality art (ARt). This critical corpus of works is an important, though underexplored, dimension of the ARtistic canon, and of the genealogy of augmented reality technology. To facilitate deeper ethnographic engagement with today's critical ARt practices, this chapter addresses a methodological gap in the digital ethnographer's toolkit by providing a medium-specific approach to the study of ARt. With this framework, termed "critical sensory ethnography," this chapter demonstrates that embodied, immersive experience is a socially and politically salient phenomenon that necessitates ongoing, critical study. To illustrate this approach, the chapter concludes with a case study featuring an AR memorial to George Floyd created by American artist Steven Christian in support of the Black Lives Matter movement.

INTRODUCTION

The study of augmented reality art (henceforth ARt) is an inherently ephemeral project. Given the speed with which AR technology is evolving as a creative medium, the proliferation of AR in practice is outpacing the research methods that attend to its specificity. How do we make sense of, and derive meaning from, works of ARt? And what's at stake in the course of this intellectual project?

As digital art scholar Christiane Paul observes, "Technologies often tend to develop faster than the rhetoric evaluating them, and we constantly have to develop vocabulary for art using digital technologies as a medium – in social, economic, and aesthetic respects" (Paul 2015, p. 67). Paul continues, "The characteristics commonly assigned to the digital medium need some further clarification since they are often used in such a general way that they hardly carry any

meaning" (Paul 2015, p. 67). Terms like "interactivity" or "immersion" for instance, are beginning to lack analytical substance as the digitally mediated world with which we are entangled increasingly feels like water to a fish. Currently, the range of experiences that join the physical and the digital to constitute the spectrum of extended reality (XR) is evolving at a pace that strongly supports Paul's point. We are inclined to bundle these experiences under encompassing terms like "XR" and are less likely to reflect on the phenomenological distinctiveness of such constitutive experiences on their own terms. At this juncture, the phenomenon of virtual reality (VR) has arguably garnered more research along these lines.

In practice, however, the immersive experience afforded by a work of ARt is not tantamount to a virtual reality experience. Though deep affinities are undeniable, we have an opportunity to further develop the phenomenological vocabulary we use to articulate the experiential grammar that distinguishes an augmented experience from a fully immersive, virtual experience. Doing so opens up the potential for deeper investigations of the potentialities of augmented reality in particular, and its aesthetic, social, and political implications. If we adopt a human-centered perspective and follow the creators who leverage this technology, we see that they use AR to do far more than embellish their living rooms with furniture or enhance their faces with filters. Rather than asking ourselves what AR technology will be capable of in one, five, or ten years, I wonder what we've already overlooked about the inaugural wave of ARt with our analytical gazes turned so expectantly toward the future.

In response, this chapter provides a medium-specific methodological framework for the study of ARtworks, from a perspective I term "critical sensory ethnography," drawing on the work of Sarah Pink (Pink 2015b, 2015a; Pink et al. 2016; Pink, Ardèvol, and Lanzeni 2020) and D. Soyini Madison (2005). By combining the work of these two scholars—neither of whom

directly engage with the technology of AR—I extend their ethnographic commitments to the study of augmented reality experiences. Throughout this chapter, I seek to problematize an apolitical conception of immersive experience. Rather, I suggest that the form of immersive experience afforded by augmented reality is a socially and politically salient form of embodied knowledge that demands ongoing, critical ethnographic study. By adopting an ethnographic approach to the study of AR, I assume that our understanding of augmented reality art would be further enriched by conceptualizing ARt as an emerging avant-garde, creative *practice* enacted by human beings as they make sense of their lived experiences through technology. Rather than bracketing the ARtist to pursue disembodied studies of ARtworks in analytical or theoretical vacuums, I argue we have much to learn from centering the perspective and expertise of ARtists *qua* practitioners of an emerging form of embodied knowledge. Our point of departure can thus be summarized by several overarching questions to guide the study of ARtistic practices:

5) What kind of *practices* are ARtists enacting or contributing to in our contemporary moment?
6) What sensory, somatic, semiotic, cultural, and political *categories* do ARtists rely on, reflect on, manipulate, subvert, play with, or generate through the augmented aesthetic experiences they create?
7) What are the conceptual, formal, and experiential *conditions* that ARtists mobilize to facilitate contemporary, augmented aesthetic experiences?
8) And finally, how do ARtists use the technology of AR to *reimagine* or *protest* their physical realities through ARt practices?

Indeed, the questions outlined above are not exhaustive. The methodological approach that follows will be most beneficial to scholars and practitioners in the fields of digital sociology, anthropology, user experience research and human-computer interaction, media studies, and performance studies. Additionally, this framework is intended to equip academic and industry researchers with a model for the ethnographic study of augmented reality art that I invite them to modify, reinterpret, and extend according to their own objectives, expertise, and ethnographic intuition.

NOUVEAUX INSTRUMENTS

What, precisely, is at stake when we undertake a medium-specific approach to the study of augmented reality art? This question confronts us, in some variation, each time a new medium starts to make its mark on us throughout history. In response, new media scholars often argue that a salient dimension of any new medium is its ability to facilitate *new experiences* for its users and audiences (Lovejoy, Paul, and Vesna 2011; Paul 2015). Indeed, the architecture of media studies scholarship is constituted by the work of thinkers like Walter Benjamin who argued that media play a central role in experiential transformations over time. Jaeho Kang summarizes Benjamin's commitments along these lines:

> The question of the human experience of media and how the media themselves transform experiences is fundamental to Benjamin. New media then shape the human perceptual capacities and faculties, and undergird new forms of embodied experience. Media, then, are not simply visual or oral, or literary forms, but reconfigure the entire human body, our sensory apparatus: in other words, media technological transformation, the transformation of the body, and its relation to space and time are intimately

> interconnected. New media produce new perceptual possibilities, new bodies and new subjectivities. (Kang 2014, p. 213)

In a similar vein, Marshall McLuhan argued that artists possessed a privileged perspective in societies undergoing such perceptual transformations. He suggests, "The effects of technology do not occur at the level of opinions or concepts, but alter sense ratios or patterns of perception steadily and without any resistance. The serious artist is the only person able to encounter technology with impunity, just because he [*sic*] is an expert aware of the changes in sense perception" (McLuhan 1964, p. 31). Thus, the perspective of the new media artist/creator is a promising starting point as we seek to comprehend ARt practices, and their relationship to what McLuhan refers to as "sense ratios," or perceptual patterns, as they transform through time.

Contemporary scholars continue to build on McLuhan's concept of "sense ratios" to pursue investigations of technologically mediated embodied experience. The work of Ingrid Richardson (2005, 2010, 2011, 2020) provides a phenomenological, medium-specific account of our embodied interactions with new media, specifically mobile technologies. Drawing on Merleau-Ponty's (2002, p. 145) classic argument that habituating oneself to the objects in our midst "expresses the power we have of dilating our being in the world … of altering our existence through incorporating new instruments [*nouveaux instruments*]," Richardson considers the embodied practices that habituate us toward contemporary, mobile media devices. Richardson explores how such technologies demand a new range of collective bodily skills, spatial perceptions, postures and habits, arguing that a medium-specific approach centralizes the distinctive spatial, temporal, and socio-cultural effects of a particular medium that determine "particular conditions of possibility for the way meaning is made" (Richardson 2010, 2020). Richardson proposes a medium-specific approach to the study of Merleau-Ponty's *nouveaux*

instruments that phenomenologically probes the conditions of collectively shared forms of knowledge as they are performed into being *in situ*. Importantly, Richardson's programme moves beyond McLuhan's sense ratios to include the role of culture, history, and the situatedness of knowledge with the more relational concept of "technosomatic involvements" (Richardson 2010). Drawing on the applied, postphenomenological approach of philosopher Don Ihde (1990) Richardson calls for additional ethnographic studies of embodied knowledge practices that illustrate the technosomatic arrangements that new media demand across cultures and contexts.

Richardson's notion of technosomatic involvements exemplifies the hermeneutic phenomenological principle that the "macro," is constituted by "micro" practices, and invites us to interrogate the theoretical distinction that artificially separates these two deeply interrelated domains of lived, embodied experience. What is at stake, therefore, as we undertake the study of *nouveaux instruments* is the technologically mediated transformation of "common sense" itself—knowledge that is at once deeply personal, tacit, and individually embodied, as well as socially and culturally salient. Following such transformations ethnographically enables us to more fully comprehend how knowledge and meaning are produced by and through ever evolving, technosomatic means.

Making Sense of the Senses

Ethnographic studies of embodied knowledge practices can be traced back to the origins of the anthropological and sociological disciplines, with the role of the senses occupying varying levels of significance. In the past three decades, the related "material," "sensory," and "performative" turns have sparked intellectual debates concerning divergent approaches to the study of human experience and knowledge production—with semiotic, linguistic, largely

representational studies occupying one extreme, and material, sensory, extralinguistic approaches at the other.

The latter position has been defended by select scholars affiliated with the interdisciplinary field of "sensory studies," which takes the human "sensorium" as its primary object of study. Derived from the Latin *sensus*, (the faculty of perceiving) the concept of the sensorium emerged in the seventeenth century to describe the totality, or seat, of sensory perception. The interdisciplinary field of sensory studies is broadly concerned with the study of the sensorium as the dynamic interplay and organization of our perceptual processes mediated by our social, physical, and cultural environments (Howes 1991; Jutte 2005). Anthropologist David Howes and cultural historian Constance Classen explain, "[S]ense perception is not simply some pre-cultural, psychophysical 'information-gathering' process. Our ways of sensing and making sense lie at, and indeed give form and life to, the heart of culture" (Howes and Classen 2013, p. 13). Though not a homogeneous subfield, this approach tends to advance the human sensorium as an analytical concept warranting further anthropological study—much like kinship, economic, or religious systems—to facilitate cross-cultural comparison.

While sensory studies scholarship contributed important challenges and nuance to the intellectual debates of the early twenty-first century, it is increasingly common for today's ethnographic scholarship to demonstrate that—in practice—a *rapprochement* between the sensory and the semiotic can produce fruitful accounts of lived, embodied experience. In this way, the initial wave of sensory studies scholarship has since been reinterpreted by contemporary ethnographers. For our purposes, the "sensory ethnographic" approach outlined by anthropologist Sarah Pink provides us with the methodological foundation needed to attend to both the material and semiotic domains of augmented reality artistic practices. Pink invites the

ethnographer to consider forfeiting the mind/body dualism that fragments prior studies of human experience to pursue a more holistic approach to ethnography. Such an approach is a direct response to calls of scholars like W. J. T. Mitchell (2005) who assert that Western ocularcentrism and the reification of "the visual," have left us with a limited understanding of our interrelated sensory and semiotic ratios. Pink's work reminds us that the distinction between the cognitive and sensory categories available to our research participants are equally important sources of knowledge whose separateness is defended more stringently within academic debates than in our participants' lived experiences.

Sensory Ethnography

Extending the initial wave of sensory studies scholarship, anthropologist Sarah Pink's "sensory ethnography" relocates the analytical position of the senses in ethnographic analysis, departing from prior, specialized anthropological accounts (Pink 2015b, 2015a). Pink explains, "In my own work, [the senses have] become part of an approach, rather than being the central strand of a study. This I believe is a shift that needs to happen, so that attention to the senses becomes part of ethnographic practice, rather than the object of ethnographic study" (Pink 2015b, p. 13). Pink's sensory ethnography, therefore, is a less of a specialized programme, but more of a methodological posture that assumes the sensorial (she prefers the term "*multi*sensorial") dimension of human experience is salient to ethnographic inquiry generally. Rather than abstracting the sensorium as an object of study, the multisensorial dimension of lived experience permeates the ethnographer's outlook entirely.

A sensory ethnographic perspective, then, supplements traditional ethnography with a more expansive definition of what is typically regarded to constitute legitimate ethnographic

"data." Pink suggests that the ethnographic interview and participant observation—the primary ethnographic methods—be reconceptualized as *multisensory* events. Rather than supplant traditional ethnography, Pink deepens extant approaches by insisting that we overlook important sources of ethnographic knowledge if cursory analytical attention is paid to "sense-data," whether they be quotidian or highly significant to our participants. The sensory ethnographer conducts close, qualitative studies of human experience that attend to multisensorial, atmospheric, and embodied forms of meaning making via interviews and observation, but analysis does not simply culminate in the reconstruction of a culture's sensorium. Importantly, Pink also embraces the semiotic and cultural codes that human beings draw upon to imbue experience with meaning. In this way, Pink invites ethnographers to take full advantage of all sources of knowledge and meaning available to us, and to our research participants, to pursue novel, creative accounts of the way that the spoken and tacit dimensions of experience contribute to meaning-making. The resultant sensory ethnographic findings carefully articulate how these dimensions work in tandem as participants make sense of their lived experiences and practices.

In her related work on ethnographic studies of the digital, Pink observes that sensory approaches are gaining in currency in part due to the ways in which the digital is increasingly entangled in everyday experience. (Pink et al. 2016). I suggest that Pink's holistic, multisensorial analytical posture, coupled with her refusal to center the sensorium as our primary object of study yields new analytical possibilities in our postdigital moment. With Pink, I am not invested in merely abstracting and reconstructing the human sensorium as our chief analytical objective, nor do I seek to merely confirm that the increasingly digital human sensorium has undergone transformations through time. Following the analyses of early scholars like Benjamin, McLuhan, and Merleau-Ponty, and contemporary thinkers like Don Ihde (1990), Mark Hansen (2006),

Ingrid Richardson (2020), and Richard Grusin (2015), I assume it is no longer contentious—or novel—to argue that the contemporary human experience is co-constituted by and through digital media. My reading of Pink, therefore, embraces her invitation to pursue more ambitious questions about the experiential conditions of meaning-making, including her argument that a sensory ethnographic approach might illuminate new sensory categories, and shed new light on emerging forms of embodied knowledge and practice. Pink's invitation reminds us that ethnographers need not wait for emerging knowledge practices to become hegemonic or dominant before we study them. Given the rapid evolution of AR technology, Pink's approach is well positioned to follow the emergence of ARt as a bourgeoning, creative practice.

By conceptualizing augmented reality art practices in this way, we pursue a framework for the study of augmented reality that is at once medium-specific—and yet—is not necessarily media-*centric*. We do not assume that the technology of AR serves the same function, or takes priority, in the lives and practices of all ARtists and creators. With Pink, we adopt human-centered principles from the fields of user experience research and human-computer interaction (HCI) to explore technology through the first-hand experiences of human beings (Norman 2007, 2013). Along these lines, the ethnographer is discouraged from making *a priori* assumptions that the technology in question is essentially good or bad for its users, or that the technology "feels" particularly salient or interesting to the research participant. Instead, we proceed inductively and carefully through ethnographic interviews and participant observation into the lifeworlds of our research participants to uncover the kinds of experiences and possibilities a given technology affords them. This includes the range of unanticipated benefits, consequences, and functions of the technology under investigation.

To summarize thus far, the ethnographic perspective I seek to advance for the study of ARt proceeds from the methodological foundation provided by Pink's sensory ethnographic approach, but does not amount to it. Pink's commitments to a more robust ethnographic outlook that takes seriously the semiotic and sensory data generated throughout the course of multisensory ethnographic interviews and participant observation are excellent starting points. Further, Pink's human-centered approach to digital ethnography can be read as an important invitation to researchers to be reflexive about their personal attachments or biases related to the technologies they investigate. In order to more fully attend to the range of empirical practices that ARtists enact through AR, however, we must supplement Pink's perspective with an ethnographic approach that specifically addresses questions of power and inequality in phenomenological terms.

A Critical Supplement to Sensory Ethnography

Though augmented reality art is colloquially associated with the spectacle of Pokémon Go, or the Snap and Instagram filters that punctuate our social feeds, a notable, though vastly underexplored, impulse runs throughout what we might term the "first wave" of augmented reality art. Since the early work of the inaugural augmented reality art collective Manifest.AR, artists and creators have used AR to generate ARt that explores themes of power, cultural identity, gender, race, climate change, and critical history. Years before Pokémon Go launched AR into the mainstream, the collective pioneered the use of ARt as a form of activism—protesting cultural elitism by infiltrating the MoMa, and raising climate change awareness by

illustrating glacial recession, among other interventions.[6] Though their work is peripheral to the mainstream, commodified forms of augmented reality experiences that are currently on the rise, these avant-garde practices are central to the genealogy of augmented reality technology. The first wave of socially and politically engaged ARtworks they have produced arguably constitute an important dimension of the ARtistic canon.

As AR continues to make its way into mainstream channels of e-commerce, education, entertainment, and gaming, we would be remiss to overlook the cadre of ARtists who consistently produce work beyond these traditional domains. Today's rising cohort of ARtists use AR to protest police brutality, assert their cultural identities, and illuminate marginalized histories. This ongoing work invites questions regarding how ARtists use AR to imagine more socially and politically just realities at the phenomenological level. In McLuhan's terms we might ask—what is it about the *medium* of AR that is conducive to the social, political, and global *messages* ARtists seek to advance? To further adapt our methodological framework to account for such questions, we now consider the work of anthropologist D. Soyini Madison (2005).[7]

By joining Pink's multisensorial analytical posture with Madison's (2005) *Critical Ethnography: Method, Ethics and Performance*, we pursue an ethnographic approach that more comprehensively engages the relationship between phenomenology and politics. Madison's work is constituted by two critical themes that I consider germane to the study of ARt practices: (1) the politics of researcher positionality, and (2) phenomenology's relationship to the political. In contrast to Pink, Madison's approach advances a more expressly critical account of the

[6] I wish to thank the members of the Manifest.AR collective who have generously shared their work and perspectives with me. See co-founder Mark Skwarek's (2014) chapter, "Augmented Reality Activism" for a comprehensive introduction to the collective's work and objectives.
[7] I wish to thank Professor Kemi Adeyemi for introducing me to Madison's seminal work.

ethnographic researcher, and of human subjectivity more broadly. Madison routinely opts to refer to the ethnographer's *positionality,* rather than their subjectivity, to underscore the relational nature of ethnographic presence.[8] Madison invites ethnographers to:

> [C]ontextualize our own positionality, thereby making it accessible, transparent, and vulnerable to judgment and evaluation. In this way, we take ethical responsibility for our own subjectivity and political perspective, resisting the trap of gratuitous self-centeredness or of presenting an interpretation as though it has no "self," as though it is not accountable for its consequences and effects. Doing fieldwork is a personal experience. Our intuition, senses, and emotions—or what Wallace Bacon (1979) collectively refers to as "felt sensing"—are powerfully woven into and inseparable from the process. (Madison 2005, p. 8)

Madison's distinction between a reflexive, vulnerable acknowledgement of one's positionality on the one hand, and an indulgent, self-centeredness on the other, is salient. Madison urges the researcher to take responsibility for their presence and interpretations throughout the stages of data collection, analysis, and reporting. Where the ethnographer veers into self-gratuitous territory, somewhat paradoxically, is when they fail to acknowledge their subjectivity. This implies that the ethnographer's experience and interpretations are universal, objective, and self-evident. When the time comes to document and report one's research findings, an objective, impersonal "voice from nowhere," is to be avoided. Attending to the politics of positionality, then, is less of a discrete "moment" or "task," and more of a posture of openness to—and responsibility for—one's limitations throughout the research process.

[8] Madison's emphasis on positionality is preferred to Pink's distinction between the subjective and intersubjective dimensions of the sensory ethnographer's subjectivity (see Pink 2015b, pp. 58-65).

While an exhaustive treatment of the relationship between phenomenology and politics is beyond the scope of this brief chapter, it is important to note Madison's commitment to the political dimension of phenomenology. She distinguishes her phenomenological methodology from the classical, Husserlian study of a transcendent consciousness and subjectivity that is "bracketed" from the surrounding, natural world (Husserl 1999). She opts instead for Heidegger's hermeneutic phenomenology, which accepts that our first-hand experiences are indelibly marked by society, culture, and history (Heidegger 1962, 1999). In her formulation, the critical ethnographer presupposes macro-level systemic inequalities and political injustices to be detectable at the phenomenological level of our participants' every day, subjective experiences. Madison (2005) further explains:

> [C]ritical ethnographers embrace phenomenology's orientation toward embodiment and perception, both in the telling and enactment of experience. We understand that human perception, on the one hand, reveals idiosyncratic meanings, contingent truths, and felt-sensing perspectives that are born from materiality, power, and the complexity of presence, and, on the other hand, uncovers what it feels like to experience all these elements up close and personal. (P.58)

In sum, Madison's framework prepares the ethnographer for a reflexive, vulnerable process of discovery and understanding, and encourages close investigations of participants' first-hand experiences as they negotiate the consequences of social and political inequality.

A Critical Sensory Ethnographic Approach to the Study of ARt

Taken together, Pink's sensory ethnography and Madison's critical ethnography provide us with ethnographic principles to be further adapted to facilitate the study of augmented reality

art. In particular, Pink argues for the significance of extralinguistic ethnographic data, and calls for creative ethnographic studies of the relationship between the sensory and semiotic dimensions of embodied knowledge and practice. Madison complements Pink's perspective with an incisive call to critically evaluate the socially and politically salient domains of ethnographic positionality, as well as our participants' phenomenological perspectives. Extending Pink and Madison, I apply a critical sensory ethnographic perspective to the study of socially, politically, and globally engaged ARt. Below, I outline this approach while drawing on a case study from my ethnographic work with contemporary ARtists.

Pink notes that sensory ethnographic interviews and participant observation need not be conducted in a shared, physical space between the researcher and the participant. In response to Pink's (2015b) call for additional digital sensory ethnographic scholarship, I have adapted her guidelines to my remote, digital ethnographic practice in the midst of the COVID-19 pandemic. For the study of ARt, in particular, a sufficient amount of data can be generated via remote video calling and screen-sharing technology between the researcher and participant, coupled with the researcher's ability to download and experience a participant's work of ARt on their own mobile device. If the ARt is located spatially, of course, it is preferrable that the researcher experience the ARt in its intended context. If the researcher is unable to travel to the space where the ARt is geolocated, or if the location is not safe to visit, a sufficient alternative is to invite the participant to record a video of the ARt experience in practice, and to share the video with the researcher while guiding them through the intended experience, step-by-step. This show-and-tell style of digital ethnographic interviewing combines traditional ethnographic interviewing techniques with the "think aloud protocol" routinely utilized in remote and in-person user research contexts (Boren and Ramey 2000).

For our purposes, a laptop alone is not a sufficient critical sensory ethnographic interview tool. While conducting a remote ethnographic interview, it's recommended that the researcher be connected to a wired internet connection while utilizing at least two computer monitors, and a supplemental web camera, speakers (or headphones), and microphone equipment. This helps ensure that the participant will be able to clearly see, hear, and sense the researcher's presence, including the researcher's verbal and non-verbal cues to encourage the participant as they share. The equipment also enables the researcher to experience the one-on-one interview with one dedicated monitor, while experiencing any screen-shared, multimedia content on the second screen. The external speakers (or headphones) are especially important for the researcher to adequately hear not only the participants' voice (including their unspoken cues, hesitation, laughter, and so on), but also allow the researcher to optimally perceive the sounds that might accompany a work of ARt. A mobile device (tablet, phone) is also important to have on-hand, in the event that the ARtist shares a work of ARt that the researcher can experience directly.

During a digital ethnographic interview that includes screen sharing, several phenomenological details are pertinent. Importantly, it is recommended that screen-sharing be delayed until the researcher and participant have established some foundational rapport in the initial one-on-one portion of the discussion. Sharing one's screen too soon introduces a transactional, distant feeling into the remote encounter. After anchoring the encounter with this initial sense of copresence, the researcher should invite the participant to share their screen and demonstrate their ARtworks. While screen-sharing, the ethnographer ought to take the time to ensure that, at minimum, thumbnails of the participant and researchers' faces are visible for both individuals. The researcher might need to assist the participant to configure these settings, but it is imperative to maintain a sense of copresence as content is being shared.

The initial moments of the critical sensory ethnographic interview are extremely important. In addition to obtaining the participant's consent, answering questions they have about the study, establishing one another's pronouns, and ensuring the technical equipment is functioning for both individuals, these initial moments are an opportunity for the researcher to mindfully ground the emotional and sensory dimensions of the interview with their affective presence. At this time, the ethnographer has the responsibility to take note of how their presentation and positionality relate to their participant's subjectivity, and to anticipate the consequences. This extends to tacit and overt details such as the two individuals' communication styles (i.e., hurried, calm), their countenances (i.e., shy, confident), their physical appearances (i.e., formal, casual), and the more explicit sociological differences in racial identity, gender presentation, age, class, ability, native language, and cultural background. The researcher is responsible for assessing these dynamics throughout the interview, and being mindful that their positionality might introduce an imbalance of power at any point. A straightforward way the researcher can ensure that these disparate variables come into alignment is to avoid the urge to fill silence, nervously speak and dominate the affective space throughout the interview. A helpful objective is to encourage the participant to serve as the most active interlocutor, while the researcher remains engaged, inviting, and warm without resorting to condescension. Following the interview, it's recommended that the researcher include their assessment of the above dynamics in their field notes, in order to further contextualize their findings.

CASE STUDY: "GEORGE FLOYD AR MEMORIAL" BY STEVEN CHRISTIAN

We turn now to a case study from my ethnographic research with contemporary ARtists who use AR as a form of protest and activism. Below, I apply a critical sensory ethnographic

approach to American artist Steven Christian's ARt practice, and his work entitled "George Floyd AR Memorial" (Figure 1). While an extended account of his ARt practice is beyond the scope of this brief chapter, I conclude with an abbreviated summary of my findings.[9]

Figure 1. Artist Steven Christian installed his "George Floyd AR Memorial" throughout Portland during the city's 100 days of Black Lives Matter protests in 2020

Several months before our interview, I became familiar with the content Steven posted to his YouTube channel and Twitter in response to the Black Lives Matter (BLM) protests following George Floyd's murder on May 25th, 2020, by former Minneapolis police officer Derek Chauvin. Steven was based in Portland, Oregon at the time, which was the site of over 100 days of BLM protests in the wake of Floyd's death. As a Black American navigating the swell of

[9] Notably, my positionality as a white ethnographer with a background in Africana studies and cultural sociology introduced conditions and limitations into the ethnographic process that required ongoing reflexivity. Accordingly, I collaborated with Steven Christian as I prepared this chapter. I wish to thank him for providing feedback prior to this chapter's publication.

political activity surrounding racial injustice during this moment, Steven responded to Floyd's murder and the ongoing protests with AR as his medium of choice. In August of 2020, Steven posted videos and images of his AR installation that featured one central asset—a digital, bronze, 3D bust of George Floyd modeled by sculptor Rodman Edwards.[10] The ARtwork consists of a fiducial marker that enables the user to trigger the bust of Floyd by pointing the camera of their mobile device toward a flat surface. Once triggered, the bust of Floyd appears where the user wishes to place it. The user can then open the ARtwork's settings to scale the bust height up to 30 feet, and to rotate it by 360 degrees.

After finalizing his work, Steven ventured to landmarks throughout Portland to install his ARt. He recorded videos and screen shots of the ARtwork on his mobile phone as he installed Floyd's commemorative bust at significant sites, including the city capitol building (Figure 2).

Figure 2. Steven Christian's "George Floyd AR Memorial" installed at a Portland park by the artist

[10] The model is available on Sketchfab at the following link: https://sketchfab.com/3d-models/george-floyd-memorial-bust-0c4f918e8e16463e8d5de92bc49a9f23

Steven then posted the content documenting his ARt experience to his social media accounts, later accompanied by a step-by-step tutorial that other creators could use to build the installation themselves in Unity (Figure 3).[11]

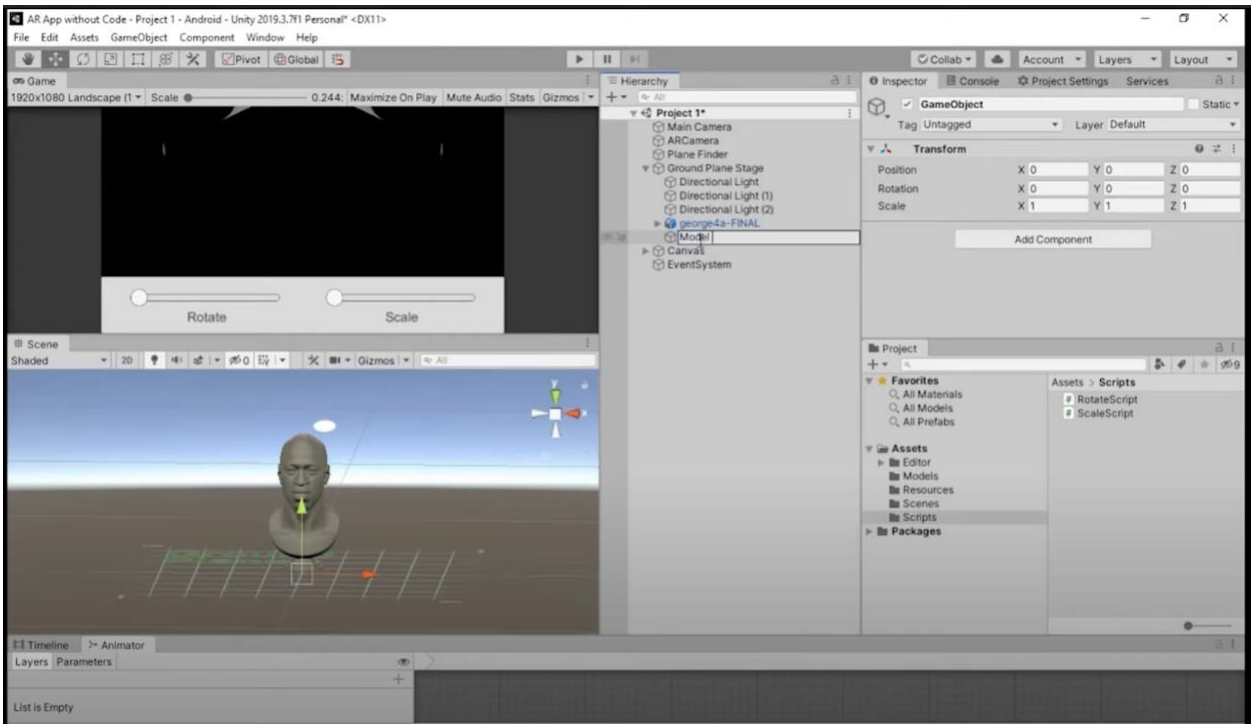

Figure 3. Screen capture from a video tutorial artist Steven Christian posted to his social media channels to equip other creators to learn from his "George Floyd AR Memorial" design process (Image credit: Steven Christian)

To further increase access to his ARtwork, he added it to his mobile AR app that features several of his ARt installations (Figure 4).[12]

[11] Steven Christian's post regarding the memorial is available here: https://stuckonaneyelnd.medium.com/i-made-an-augmented-reality-app-that-triggered-racists-a8f377dc50b0

[12] Steven Christian's mobile app is available here: https://iltopiastudios.com/eyelndfeevrapp/

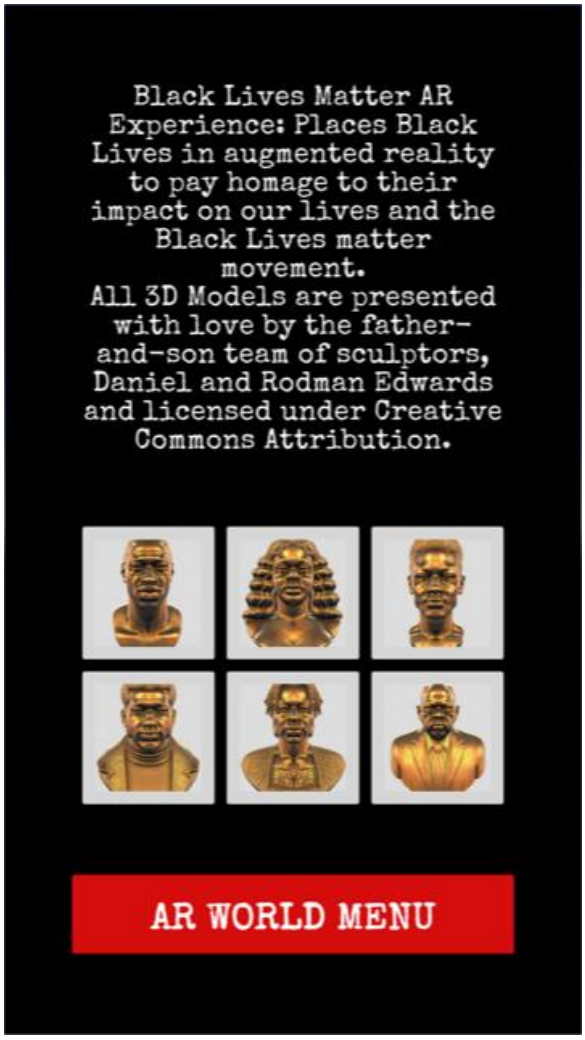

Figure 4. Homepage of the mobile AR app Steven Christian designed to support the Black Lives Matter movement

Steven and I met for the first time in January 2021 in the middle of the COVID-19 pandemic, about two weeks after protestors stormed the US Capitol building. Due to social distancing restrictions, Steven and I conducted our ethnographic interviews remotely utilizing video calling and screen-sharing technology throughout 2021. During the initial moments of my interview with Steven, he explained to me that he identifies as a "teaching artist," a multimedia content creator, and an "experience builder." He is a self-taught animator, specializing in comics and augmented reality. Growing up in the Bay Area, Steven explained that he had always been

intrigued by the culture of Silicon Valley, but quickly realized that Black creators like himself were forced to confront significant barriers to entry. In response to this lack of representation in tech, Steven became a prolific ARtist, generating hundreds of videos of himself talking about and creating ARt, as well as content that gives form to what he describes as the Black experience. He elaborates, "So essentially, all the people that I looked up on YouTube, they're all white. And so I just want to embody what that inclusion looks like … I wanted to show, like *physically* show, what Blackness and AR can look like."[13]

Throughout our interview, I learned that Steven is driven by a strong commitment to the performative implications of his practice as a Black ARtist and teacher. To him, generating online content that routinely represents his physical presence, on-camera, as a Black creator through his myriad social media channels is central. As a *teaching* artist, Steven further explained that his practice is constituted by a pedagogical dimension intended to equip aspiring Black creators to explore the medium of AR, thereby lowering the barriers that once held him back. His channels are replete with courses and tutorials that are thorough enough for the AR-savvy, yet approachable enough for the novice.

Our interview consisted of a combination of one-on-one discussion with and without shared screens. Steven walked me through a variety of ARt projects—some finished, some unfinished—to further illustrate the kind of experiences he seeks to curate for the end user. I recorded our interactions to analyze later, which enabled me to become immersed in the installations as he shared them, rather than becoming distracted with notetaking. Following our interview, I also downloaded his app, and experienced several of his ARtworks on my own.

[13] Steven Christian's quotes throughout this chapter were obtained during an ethnographic interview with the artist in January 2021.

As I probed to learn more about Steven's "George Floyd AR Memorial," he recounted his decision to support the Black Lives Matter movement and pay homage to Floyd through the medium of AR. For health and safety reasons in the midst of the pandemic, Steven did not physically participate in Portland's 100 days of BLM protests. As I listened to Steven explain his decision not to participate in the protests in-person, I sensed that he regarded AR to be more than simply a digital alternative to protesting "in real life" (IRL). In reference to the overarching questions that guide the critical sensory ethnographic study of ARt initially posed in this chapter's introduction, I employed the framework to pursue a deeper understanding of Steven's ARtistic practice by considering the sensory, somatic, semiotic, cultural, and political categories at play in his ARt. We explore these dimensions of his practice below.

Steven recalled that as our physical lives were quarantined for the better part of 2020, he sensed a collective shift taking place—a dramatic experiential pivot toward the digital realm. Quarantined and socially distanced from others in the initial months of 2020, society's (already considerable) dependence on the internet rapidly accelerated out of necessity. And then, after a few months of acclimating to this increasingly digitized mode of everyday life, the murder of George Floyd was captured on video and broadly circulated throughout this shared, online context. Steven recounted how it felt to experience the visceral, digitally mediated depiction of Floyd's murder with the rest of the world, online. He explains, "[That] wasn't disconnected from the internet. It was very much a part of the internet … it was an experience that we *all* had watching a video, [and then] seeing people riot or … protest … those things were part of an experience. So, I wanted to use AR to really build on that experience."

From his perspective, then, the embodied knowledge he acquired in the context of the pandemic was constituted by a pervasive feeling of physical solitude combined with a profound,

almost paradoxical sense of copresence with an online, global collective. With the same digitally mediated experiential grammar, so to speak, Steven created his ARt memorial for Floyd as the subsequent enactment and extension of this embodied sensory knowledge. As we further consider the conditions of his ARt installation and its subsequent circulation, the sensory, somatic, semiotic, cultural, and political dimensions of his practice come into view.

At the phenomenological level, Steven's decision to install his memorial to George Floyd during the calm, daylight hours of Portland's 100 days of protests is salient. Steven explained that he initially designed the ARt installation to experience it for himself, to walk through an augmented version of Portland's built environment on his own terms—peacefully, safely, before the sun set and the streets filled with tear gas and rubber bullets. As a personal, phenomenological encounter his ARt enabled him to move through a reimagined reality where he was free to pay homage to Floyd, and demonstrate his support for the Black Lives Matter movement by occupying physical space safely and confidently (Fig. 2.5).

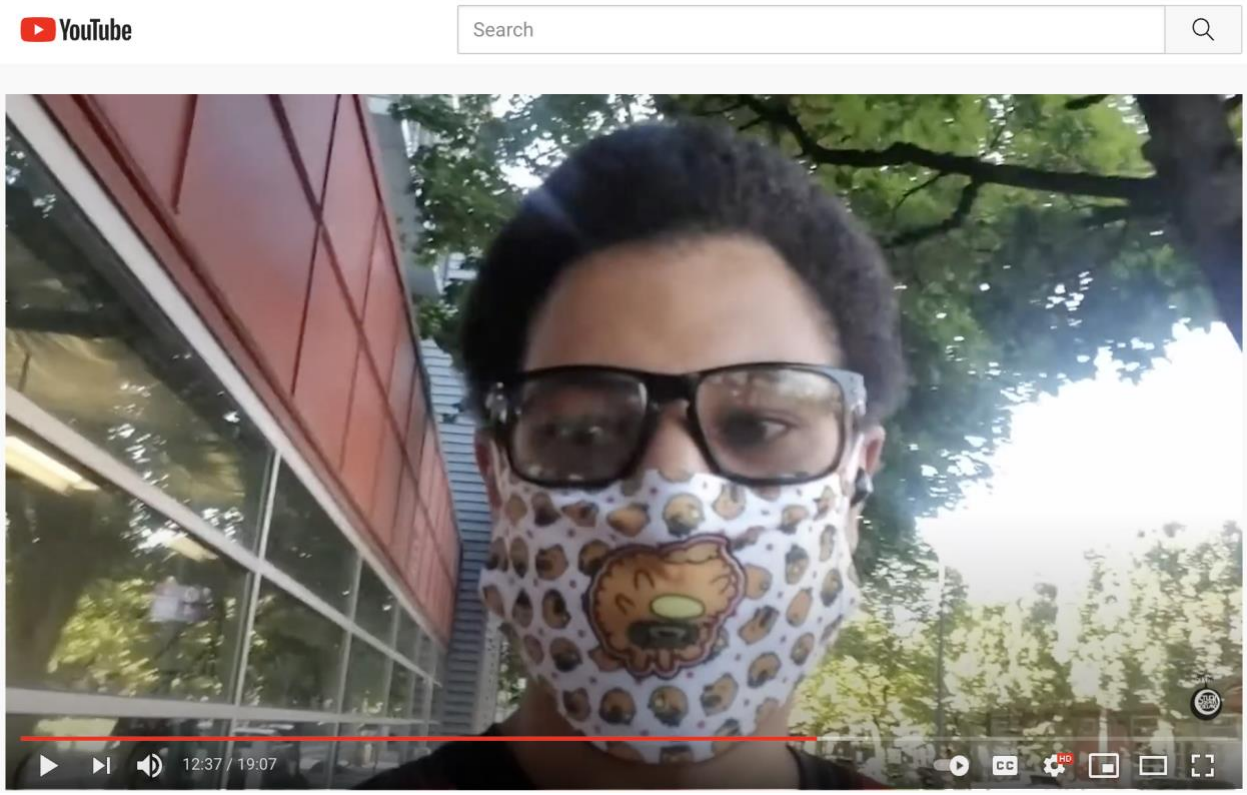

Figure 5. Screen capture of Steven Christian's YouTube channel featuring his first-hand experience installing his "George Floyd AR Memorial" throughout Portland in 2020. Christian wears a mask during the COVID-19 pandemic

The next moment of his practice consisted of occupying virtual space in the same unapologetic manner, as he shared his augmented reinterpretation of Portland throughout his social media channels. In this way, recording the augmented encounter on his phone and posting it online enabled him to express and defend what he characterizes as an ineffable dimension of the Black experience. From a semiotic perspective, Steven understood this process to be subversive not only because his ARt depicted George Floyd's likeness (a familiar signifier of the BLM movement), but because the installation is documented from Steven's first-hand perspective as he reimagined Black reality on his terms. He considered the public circulation of his personal, phenomenological encounter to be an important moment in his creative practice. He was also aware that sharing his first-hand experience of an augmented Portland would elicit

criticism. He elaborates, “[L]ike a lot of things within the Black experience, it’s very hard to like find data to prove it. And so one of the things I did with the George Floyd [memorial] was, I, you know, made the experience, put the installation together, and then I went out … took the pictures, and did the video and posted it online.” While the work was met with positive online reception, he also experienced racist criticism—"[T]hen, you’ll get the racists that will come through and like … they’ll try to belittle your efforts and what you’re trying to do, how you’re trying to express yourself and so on.”

I then sought further clarification about his ARt’s relationship to the political, as he articulated his understanding of the relationship between Blackness and activism. If we recall Madison’s (2005) emphasis on the relationship between phenomenology and the political, Steven’s comments about his practice below shed light on the political ontology of Black subjectivity:

> I think part of the Black experience is understanding that … the lines are blurred when it comes to sort of just like self-preservation and activism. Cuz it’s like … are Black people being activists when they’re just trying to have the opportunity to vote? Or when we’re trying to have the opportunity to live in a place that other people have the opportunity to? Is that just being an activist, or is that just being a citizen? You know? I think the lines are blurred when it comes to that. So for me, as a Black creator in AR, I am just trying to create things that improve on the experiences that Black people have … I guess I am [an activist] by default, but I am just sort of a Black creator.

This assessment of the political implications of his ARtwork offers empirical nuance to the literature related to digital activism (Schradie 2019), and political art (Bishop 2012). Steven’s understanding of the inherently political nature of racialized subjectivity poses an interesting

challenge to analytical distinctions that separate IRL/digital political participation, and political/apolitical art. The manner with which Steven's ARt collapses such distinctions via technological experimentation invokes a strong, Afrofuturist sensibility that undergirds his practice.

When I asked Steven if he felt that his creative practice could be similarly achieved with the medium of virtual reality (VR), he explained that his creative and political motivations were more aligned with the medium of AR:

> Yeah, so I've never really been drawn to VR. For me, AR has been a very enlightening medium to operate in because it builds on the experiences that we all appreciate … I'm not attracted to VR because it moves you away from the world, as opposed to enhancing it. So, for me, I'm more interested in increasing accessibility, of, and improving on experiences that we sort of are forced to use and operate with already … So, the opportunity to make real, lasting, impactful improvements on [extant] experiences is one of the most attractive things for me [about AR].

As Steven surveyed the landscape of Portland in the summer of 2020 where physical infrastructure and memorials were regularly being deconstructed by ongoing protest activity, the staying power of ARt also became increasingly appealing to him:

> So, the thing that I really appreciate about AR and … activism … is that it's nondestructive, and it's asynchronous … or it's decentralized in many ways. So the beauty of it, much like the Black Lives Matter movement where there's no real hub, you can't destroy it. The beauty of AR is that, like all the people that didn't like the photos of the 30-foot bust of George Floyd … in front of the capitol or in front of all these like landmark places … If this was an actual [physical] installation, you have to get a permit.

> People would protest and people would, you know … destroy it … like they're doing to all the landmarks already. [With AR], you can't come up with a law that will redline me … You can't come up with a fine to say 'Oh, you didn't have a permit for this.' You can't come up with any of these frivolous things that have led to the oppression of Black expression and Blackness … And so that was the most liberating thing about it is that I didn't have to put myself at the mercy of others … I was playing by a different set of rules.

As a teaching ARtist, the concluding moment in Steven's practice is the pedagogical dimension that informs his work. If we recall Steven's prior comments regarding his performative inclination to inspire Black creators by embodying "what Blackness and AR can look like," I suggest that this case study also demonstrates how Steven's practice evokes a sense of what Blackness and AR can *feel like*. By providing a design tutorial to accompany his "George Floyd AR Memorial," Steven mobilizes the semiotic and sensory knowledge that constitutes his ARtistic practice to equip Black creators to build immersive experiences that look and feel germane to them. This dimension of his ARt practice has critical potential in a white-dominated creative space where the technology and defining conditions of immersive meaning- and sense -making practices are constructed and maintained largely without the epistemological contributions of creators of color. Thus, Steven's ARtistic practice invites us to critically abstract from ostensibly apolitical accounts of "the immersive"—immersive for whom? On whose terms? Embodying whose humanity, knowledge, or affective presence?

CONCLUSION

The inaugural wave of ARt illustrates the medium's ability to combine the sensory and semiotic conditions of meaning-making to produce compelling, augmented experiential glimpses of more socially and politically just realities. Thus, this chapter addresses a methodological gap in the digital ethnographer's toolkit by providing a medium-specific approach to the study of ARt, termed "critical sensory ethnography." The application of this framework to the case study of artist Steven Christian's "George Floyd AR Memorial" demonstrates that embodied, immersive experience is a socially and politically salient phenomenon. It is recommended that industry and academic ethnographers continue to investigate how diverse populations creatively leverage the social and political potential of AR beyond its mainstream uses.

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ARTICLE TWO

Building a Critical Metaverse: Augmented Reality Activist Art & the Emergence of Web 3 Activism

Alida Goffinski

ABSTRACT Variously described as the "metaverse," "Web 3," or the "spatial web," the future of the internet is being designed to immerse us in augmented and virtual realities at an unprecedented scale. This ethnographic study considers how 30 new media artists and activists use augmented reality (AR), an emerging Web 3 technology, as an experimental form of new media activism to advance a diverse range of social, political, and global causes. Though Web 2 activist repertoires routinely leveraged social media sites like Twitter and Facebook, AR activists' emerging repertoires operate beyond the two-dimensional version of cyberspace where most digital activism has occurred. Instead, they draw on a more immersive form of embodied knowledge to intervene at the intersection of the human sensorium, the real world, and the virtual realm in novel ways. Four emerging AR activist repertoires are identified: (1) engaging the physical world with AR, rather than escaping it with VR; (2) augmenting spaces, not faces; (3) raising the dead to rewrite history; and (4) virtually transgressing institutional boundaries. Each repertoire signals a phenomenological departure from the social media-centric repertoires that characterized digital activism during the Web 2 stage of the internet. Thus, augmented reality activist works of art serve as socially and politically conscious interventions that anticipate a critical version of the metaverse that does not yet exist, but can be glimpsed episodically with each ARt encounter. By grounding their Web 3-based interventions in the real world, new media artists and activists leverage the expansive potential of the virtual to give digital form to real, alternative sociopolitical possibilities and futures. Against the backdrop of extant repertoires available to *today's* activist, the ARtists in this study also seek to prepare the activists of *tomorrow* as our relationship to the metaverse evolves.

INTRODUCTION

In October 2021, Mark Zuckerberg announced that Facebook would henceforth be rebranded as *Meta*. With this announcement, Zuckerberg confirmed what tech insiders have

known for years—the next stage of the internet, or "Web 3.0," will signal an unprecedented shift in our relationship to ubiquitous computing technology that is fundamentally immersive. Though still in its infancy, the Web 3 phase of the internet will accelerate the 3D capacities of the "spatial web"—the next wave of connected experiences that will blend the physical and digital worlds to produce the "metaverse." By combining elements of the virtual and physical worlds to produce new forms of reality, the Web 3-based metaverse is expected to transform the ways we communicate, socialize, shop, learn, work and play. Yet, when Zuckerberg announced that Meta would commit to building the metaverse, he introduced an extant, though niche, term into the mainstream lexicon. Although the metaverse does not yet exist, entrepreneurs, engineers and artists have been building its technological foundation for decades with Web 3-based extended reality (XR) technologies like augmented reality (AR), virtual reality (VR), and mixed reality.

This paper argues that among the earliest architects of the metaverse exists an underacknowledged cadre of new media artists and activists whose avant-garde political practices model a critical relationship to the coming metaverse. Positioned somewhere between technological utopia and dystopia, today's augmented reality artists and activists (referred to with the portmanteau "ARtists" throughout) share an understanding of the metaverse as an imminent and inevitable phase of the internet that will profoundly change our everyday lives. The 30 participants in this ethnographic sample frequently observed that the average user lacks the "literacy" required to navigate the kind of reality that will characterize the metaverse. As the transition to Web 3 progresses, ARtists possess a sense of responsibility to leverage their early fluency and familiarity with AR to build experiences that will prepare others for this immersive future. Though Big Tech companies primarily control the technological architecture for the coming metaverse, ARtists seek to empower the average user with the embodied knowledge that

will be required to critically navigate this highly immersive version of everyday life. Their ARt interventions, therefore, can be thought of as countervailing modes of seeing, sensing, and traversing the metaverse in ways that thwart and resist Big Tech's monopolization of this immersive frontier.

Unlike the wave of Web 2 activists before them, today's new media activists leverage Web 3 technology to provide us with new repertoires for digital activism as they anticipate the metaverse from a critical perspective. As we enter the Web 3 stage of the internet, the literatures related to digital activism and new media activist art have scarcely begun to investigate these innovative forms of new media activism beyond the social media-centricity of Web 2 (Silva et al. 2022; Wright 2018). What will digital activism look like and feel like in the metaverse, post-Web 2? How will digital activists disseminate information, raise awareness, and generate empathy to pursue oppositional political projects in the future? What do these new repertoires illuminate about the emerging conditions of meaning-making in the metaverse? In order to explore both the semiotic and sensory implications of this emerging wave of digital activism, this paper applies what I've termed a "critical sensory" ethnographic approach to the practice of augmented reality activism.

LITERATURE REVIEW

This review of the literature surveys recent scholarship related to digital activism and new media activism. Particular attention will be paid to the way that social movement tactics and strategies—also termed "repertoires"—change as movement actors navigate technological change. Since the mid-twentieth century, scholars of "new" social movements have demonstrated that contemporary movements share several defining characteristics that

distinguish them from traditional movements. New social movements tend to be geographically dispersed, ideologically eclectic, organizationally flat, and informed by identity politics when compared to their traditional counterparts. Importantly, the rise of the internet in the 1990s served as a watershed moment in the trajectory of new social movements. Early scholars of digital activism observed the internet's ability to accelerate the transition from traditional forms of activism and protest in the digital age as social networks expanded the boundaries and capacities of traditional movements (Castells 2015; Melucci 1996; Tilly 1984; Turner 2006). Scholars of new social movements have since argued that technological advancements like the internet and social media have facilitated a shift from traditional collective action to digitally networked *connective* action (Bennett and Segerberg 2013).

Digital Activism

In an early empirical study of the internet's impact on political participation, media scholar Graham Meikle (2002) offers a concise summary of the shift from traditional to digital activism:

> The whole repertoire of tactics developed throughout the twentieth century, from the Suffragettes to Civil Rights, from Greenpeace to ACT UP, from Gandhi to Greenham Common, have found their digital analogues, as social activism moves into cyberspace. Letter-writing, phone and fax trees, petitions. Newsletters, newspapers, samizdat publishing, pirate radio, guerilla TV. Ribbons and badges, posters, stickers, graffiti. Demonstrations, boycotts, sit-ins, strikes, blockades. Sabotage, monkeywrenching, outing. Even online benefit gigs and virtual hunger strikes. (Pp. 24-5)

Pace Meikle, however, Selander and Jarvenpaa (2016) argue that digital activism must be conceptualized as more than simply the online counterpart of traditional, offline political opposition. Rather, digital tools and methods *mediate* social movement participation in innovative ways, generating new digital action repertoires that bind social actors to movement causes (see also Mina 2020). Tracing the shifts in activist repertoires from the traditional to the digital, then, highlights the nuanced ways that political participation has transformed since the rise of the internet.

Currently, social movement scholars widely agree that the emerging phenomenon of digital activism departs qualitatively from traditional activism (Candon-Mena and Montero-Sanchez 2021; Tufekci 2014, 2017). Along these lines, George and Leidner (2019) argue the study of digital activism must extend previous conceptualizations of political participation. They note that early studies of traditional activism presupposed an exponential relationship between the level of one's political impact and the investment of one's political participation (time, resources, etc.). Conversely, today's digital activists attain significant levels of impact without expending similar levels of time, energy, or resources required by traditional forms of activism. For instance, "a hacker can create chaos with surprisingly little effort, and retweeting the time and location of a demonstration can result in a million protestors" (George and Leidner 2019:7).

Sociologist Zeynep Tufekci (2017) similarly observes that digital technologies have reconfigured the public sphere, substantively transforming the mechanisms of modern social protest. Speaking of contemporary social movements since 2011, in particular, they[14] argue:

> Their trajectories do not match those of past movements, and neither should our benchmarks or timelines for success or impact. In the networked era, a large, organized

[14] The gender-neutral pronouns "they" will be used throughout to refer to authors cited, regardless of the number of authors contributing to a particular work, unless I have personally obtained their preferred pronouns.

> march or protest should not be seen as the chief outcome of previous capacity building by a movement; rather it should be looked at as the initial moment of the movement's bursting onto the scene, but only the first stage in a potentially long journey. The civil rights movement may have reached a peak in the March on Washington in 1963, but the Occupy movement arguably began with the occupation of Zuccotti Park in 2011. The future trajectory or potential impacts of networked movements cannot be fully understood by using only the conceptual models, indicators, and benchmarks that we have gathered from the histories of earlier movements. Similar-looking moments and activities—large marches, big protests, occupations—do not represent the same points in the trajectories of the networked movements as they did in movements organized along traditional models and without digital tools. (Tufekci 2017:xiv)

It's important to note that arguments regarding the distinct features of digital activism compared to traditional activism are not tantamount to arguing for the *superiority* of digital activist practices. Indeed, as sociologist Jen Schradie (2019) observes, early studies of the internet's role in new social movements are marked by a level of technological utopianism related to the increased global and democratic potential of expansive connective action. Such studies point to several significant historical events that seemed to demonstrate the web's powerful ability to disperse content and mobilize movement actors. These include the Zapatista uprising of 1994, the 1999 Seattle World Trade Organization conference protests, the Arab Spring that began in 2010, and the Occupy movements of 2011.

However, the initial decades of digital activism provided scholars with a growing body of empirical evidence that pointed not only to the successes of digitally mediated social movements, but also to their limitations (Shirky 2008; Tufekci 2017). For example, Schradie (2019) notes

that during the 2016 US election, liberals were confronted with the reality that conservatives, too, had competing plans to wield the internet's utopian potential for their own purposes, which they leveraged to hasten Donald Trump's presidential victory. Thereafter, the left-leaning discourse surrounding the internet's democratizing potential began to lose its self-evident allure. Following the defeat of Hillary Clinton, Schradie suggests techno-optimistic accounts of digital activism gave way to more sobering acknowledgements of the internet's dystopian dimension—Russian bots, mass surveillance, fake news, problematic algorithms, and "slacktivism." The techno-utopianism that historically undergirds studies of emerging technologies has since been reflexively addressed by scholars like Tufekci, above, who argue for a balanced analytical posture toward the benefits and limitations of digital technologies in contemporary activism.

New Media Activism & Unorthodox Repertoires

The study of digital activism has primarily related to the repertoires digital activists have assembled from the internet's capabilities in its "Web 2" or "Web 2.0"[15] iteration (Candon-Mena and Montero-Sanchez 2021). Spanning the initial decades of the 21st century, media studies scholars define Web 2 as the second wave of the internet.[16] The Web 2 stage of the internet is characterized by social networking platforms and the ability of users to create, upload, and circulate their own content with ease. A defining commonality shared across the range of Web 2 activist practices is that they largely depend on the platforms and technology provided and regulated by Big Tech (i.e., Facebook, YouTube, Twitter). Related Web 2 activist repertoires are dependent upon this technology, and often include circulating hashtags to consolidate movement

[15] The term "Web 2.0" was coined by Darcy DiNucci in 1999 and later popularized by Tim O'Reilly and Dale Dougherty at the first O'Reilly Media Web 2.0 Conference in late 2004.
[16] See the first edition of Graham Meikle's (2002) *Future Active: Media Activism and the Internet* for a more comprehensive survey of the Web 1 phase of media activism.

content and information, sharing/reposting political content, raising electronic funds for activist causes, circulating online petitions, leaking electronic documents to benefit social causes, and hacking (George and Leidner 2019).

At this juncture, we must further define the concept of an activist repertoire in the course of social movements. For our purposes, we draw on the definition advanced by Van Laer and Van Aelst (2010), who provided an early account of the internet's influence on collective action repertoires at the turn of the 21st century. Adapting the canonical definitions of collective action repertoires outlined by Tilly (1984) and McAdam, Tarrow, and Tilly (2001) as a set of means available to a given set of people which they use to act collectively in order to make claims on individuals and groups, Van Laer and Van Aelst underscore the emergent nature of digital action repertoires since the rise of the internet. They focus specifically on the *unorthodox* repertoires developed by social movement actors, emphasizing their emergent nature due to (a) the ongoing creativity of activists and (b) rapid technological change.

In an important contribution to digital activism scholarship, media scholar Leah Lievrouw provides an early conceptual distinction between traditional "digital activism" and alternative cases of "new media activism" beyond the mainstream. Lievrouw decouples digital activism from new media activism to argue they be explored as related, though qualitatively distinct phenomena. In doing so, Lievrouw advances the literature regarding internet-based activism beyond approaches that often conflate the traditional and alternative uses of digital tools. Drawing on Bolter and Grusins' (2000) concept of remediation, or "the representation of one medium in another" Lievrouw notes that new media activists often utilize digital media in unconventional ways to further their alternative political projects. Lievrouw's emphasis on the role of artists who remediate extant activist tactics is especially germane to the present research.

While traditional digital activists leverage the internet and social media to further their political projects by posting the date/time of a demonstration on Twitter, for instance, new media activists are reluctant to uncritically utilize a tool like social media in a similar manner. Though the traditional digital activist uncritically adopts the medium as a digital tool for activism, the new media activist is more inclined to experiment with the intended uses of the medium itself in a critical and more reflexive manner, much like the new media artists and experimental technologists who constitute this study's sample.

In order to further distinguish new media activism from traditional digital activism, Lievrouw offers the following definition: "[A]lternative/activist new media employ or modify the communication artifacts, practices, and social arrangements of new information and communication technologies to challenge or alter dominant, expected, or accepted ways of doing society, culture, and politics" (Lievrouw 2011:19). Lievrouw proceeds to define new media activism with specific examples drawn from a Web 2 paradigm:

> [C]reators take advantage of the recombinant, networked nature of new media infrastructure, and the ubiquity and interactivity that they offer users, to create innovative projects in which people extend their social networks and interpersonal contacts, produce and share their own 'DIY' information, and resist, 'talk back' to, or otherwise critique and intervene in prevailing social, cultural, economic, and political conditions. That is, alternative/activist new media do not only reflect or critique mainstream media and culture, they constitute and intervene in them. (P. 19)

Arguing for deeper studies of the evolving field of digital activism, and new media activist projects in particular, Lievrouw offers a typology of early new media activist projects

consisting of five genres: (1) culture jamming; (2) alternative computing; (3) participatory journalism; (4) mediated mobilization; and (5) commons knowledge. Citing the influence of the Situationist International among other avant-garde movements, Lievrouw urges scholars of digital activism to further investigate the way that contemporary new media activists—and artists, in particular—critically and experimentally engage new media to produce alternative forms of embodied, digitally mediated political practice.

Extending Lievrouw's important acknowledgement of the way that new media activist repertoires remediated the traditional digital activist repertoires of the early 2000s, we conclude this review of the literature with a discussion of the future of Web 3-based new media activism. Despite a growing body of work related to new media activism (Fahlenbrach, Sivertsen, and Werenskjold 2014; Meikle 2018; Pickard and Yang 2017) our understandings of contemporary digital and new media activist repertoires remain firmly anchored by the Web 2 phase of the internet. As we enter the Web 3 stage of the internet, the literatures related to digital activism and new media activism have scarcely begun to engage how activists have begun to experiment with innovative forms of new media activism beyond the social media-centricity of Web 2 (Silva et al. 2022; Wright 2018). A significant opportunity exists to understand how political participation will be affected by the Web 3 phase of the internet known as the metaverse. What will digital activism look like and feel like as the metaverse continues to supplant the Web 2 internet? How will digital activists disseminate information, raise awareness, and generate empathy to pursue alternative and oppositional political projects in this increasingly immersive future? We conclude this review of the literature with an overview of the concept of the metaverse, and the Web 3 technologies that constitute it. Then, we'll turn to our empirical case as we consider how today's

new media activists have already begun to remediate Web 2 repertoires to embody new, critical political practices as they anticipate the coming metaverse.

Web 3.0 & the Metaverse

Though the first documented mention of the term "metaverse" was published by Neil Stephenson in the 1992 sci-fi novel *Snow Crash,* the notion of the metaverse was introduced into the mainstream lexicon when Mark Zuckerberg announced that Facebook's name would be changed to Meta in October 2021. Importantly, the tech industry has not reached consensus regarding a proper definition of the metaverse because it does not yet exist. The term "metaverse" can be thought of as an encompassing term that denotes the coming Web 3 phase of the internet, or the "spatial web." The Web 3 technologies that will make the metaverse possible continue to evolve at an unprecedented rate, owing in large part to Meta's recent strategic investment in these areas and the resultant effects throughout the industry. For the purposes of this study, I will refer to the full spectrum of Web 3 technologies that join physical and digital realities with the contemporary term "extended reality" or XR, and will refer to augmented reality and augmented virtuality experiences as "augmented reality," or AR. Environments that are entirely virtual, with no real-world elements, are termed "virtual reality," or VR (see Figure 1 below).[17]

[17] The term "mixed reality" will be reserved for those augmented reality and augmented virtuality experiences that consist of interactive digital assets that users can manipulate, as opposed to static digital assets.

Figure 1. Depiction of Milgram and Mishino's (1994) Continuum of Mixed Reality Technologies (Bambury 2017)

Industry experts debate whether the metaverse will primarily be an entirely virtual ecosystem, on the one hand, or an augmented "real-world metaverse" on the other. It's also possible that the metaverse will comprehensively combine the full range of XR technologies that constitute the spatial web, producing an immersive future that is replete with virtual and augmented reality experiences. Experts estimate that it could take at least 10 more years before the metaverse and related technologies reach maturity and mass adoption (Ffiske 2022).

While Facebook's rebrand undoubtedly accelerated the industry's investment in Web 3 technologies in the 21st century, Zuckerberg's announcement was preceded by decades of development of immersive technologies like augmented reality, virtual reality and mixed reality. Since the mid-twentieth century computer scientists, engineers, and developers have experimented with immersive technologies that will constitute Web 3. As early as 2010, pioneering technologists and artists began to use these new media—specifically augmented reality—as tools for activism for the first time. These avant-garde forms of augmented reality activism reinforce an important lesson that the initial decades of digital activism have taught

us—digital technologies change the landscape of activism by enabling activists to remediate and reimagine traditional activist strategies and repertoires. During the Web 1 phase of the internet, activists were traditionally accustomed to street protests and sit-ins in physical spaces. Web 2 technologies offered new ways to participate politically that complemented the old. As mentioned above, the resultant Web 2-based strategies and repertoires were more than simply online interpretations of traditional protest tactics. Along these lines, I argue that as we look ahead to the metaverse, emerging Web 3-based activist strategies and repertoires must be conceptualized as more than simply 3D analogues of traditional Web 2 tactics anchored by social media. The process of remediation that has already begun to occur with the transition to the Web 3 stage of the internet, therefore, warrants additional analytical attention by scholars of social movements and digital activism to keep pace with the changing technological landscape of contemporary activism. In what follows, I explore how a wave of new media activists, artists, and creators have already begun to embody the future of digital activism, leveraging Web 3 technology to create unorthodox repertoires that depart, qualitatively, from the tweets and reposts that characterize Web 2 digital activist practices. We turn now to an overview of this study's Empirical Case.

EMPIRICAL CASE: AUGMENTED REALITY ACTIVIST ART

The phenomenon of augmented reality activism can be traced to the early 2000s when New York-based media studies scholar and artist Mark Skwarek assembled the first AR activist collective, Manifest.AR.[18] In October 2010, the collective launched their first AR activist

[18] Learn more about Manifest.AR here: https://manifestarblog.wordpress.com/

intervention—We AR in MoMa.[19] Skwarek, along with fellow artist/activists Sander Veenhof, Tamiko Thiel, Will Pappenheimer, Christopher Manzione, Geoffrey Alan Rhodes, John Cleater, and John Craig Freeman, developed augmented reality art installations that were then unveiled at the New York Museum of Modern Art without the institution's awareness, or consent. The collective invited spectators to download an app on their smartphones and survey their surroundings as AR(t) was distributed throughout the museum. Rogue digital designs, sculptures, and symbols subverted the museum's extant installations by altering them with AR technology (see Figure 2).

Figure 2. Manifest.AR Activist Collective's "We AR in MoMa" Inaugural Augmented Reality Art Installation, flyer (Geroimenko 2014)

Skwarek and his colleagues have continued to produce and promote augmented reality activist art that has since grown beyond the efforts of the New York City-based collective, and spread to inspire artists and activists throughout the globe. In one of the earliest and most well-known instances of AR activism, Skwarek organized an augmented reality protest on Wall Street

[19] See the project website here http://www.sndrv.nl/moma/, as well as accompanying video here: https://www.youtube.com/watch?v=b9T2LVM7ynM&feature=youtu.be

during the 2011 Occupy demonstrations in New York. Although the NYPD had prohibited protests on Wall Street, Skwarek and his collaborators organized a series of AR experiences that users could view on mobile phones and tablets to circumvent the police regulations (see Figures 3-6)[20].

Figure 3. This triptych illustrates an empty Wall Street in New York City that is augmented with protestors during the Occupy protests in 2011.

Figure 4. Users experience augmented reality activist art with mobile devices on Wall Street during the Occupy protests in 2011.

[20] Learn more about Manifest.AR's Occupy intervention here: http://markskwarek.blogspot.com/2011/11/ar-flash-mob-wall-st.html

Figure 5. Members of the augmented reality activist collective Manifest.AR assist users as they experience activist art on Wall Street during the Occupy protests of 2011.

Figure 6. During the Occupy protests of 2011, Manifest.AR artists augmented landmarks on Wall Street to circumvent restrictions prohibiting real-world demonstrations in the area.

In 2014, Skwarek and his colleagues published a compilation of notable AR art (ARt) experiences, which served as the first monograph devoted to the emerging genre of augmented reality art (Geroimenko 2014). Skwarek's opening chapter, "Augmented Reality Activism," was the first academic publication on the topic of AR activist art. In the chapter, Skwarek (2014) notes that he and the originators of ARt activism were chiefly inspired by the Situationist International. Like the Situationists, Skwarek and his colleagues take their primary site of artistic

and political intervention to be everyday aesthetic experience itself, and design subversive, carefully curated moments and situations that shed new light on old ways of seeing and sensing our highly mediatized reality. Drawing on a mélange of twentieth-century avant-garde art movements, then, the first AR activists were motivated by two key questions: Can AR create real social change and can it unite society by turning virtual experiences into physical ones? (Geroimenko 2014:ix).

To date, many of the original members of Manifest.AR continue to produce AR activist art. This original network has also expanded to a geographically dispersed group of artists, developers, and activists who are not part of the Manifest.AR collective. Today's AR activists form a prolific, growing network of new media artists motivated by diverse social and political goals. Since Skwarek's seminal article in 2014, no empirical study of these dispersed global efforts has been conducted. This paper seeks to fill this empirical gap in the literature.

METHODS

Sociologist Deborah Lupton (2014) opens the monograph *Digital Sociology* by arguing that the contemporary sociologist is now tasked with an increasingly digitized undertaking—the social actors and lifeworlds we investigate are irrevocably enmeshed with ubiquitous computing technology. The pervasive nature of this wave of the digital era has resulted in ways of being, knowing, and sensing that are so entangled with the digital that their influence on our lives is taken-for-granted to the point of invisibility. Digital ethnographer Ingrid Richardson (2005, 2010) similarly points to the way in which ubiquitous computing has inaugurated what they term a new "technosomatic" ontology—the hybridization of the physical and digital worlds. As sociologists, then, Lupton considers how we might adapt our ethnographic methods to meet the

emerging challenge of examining digital phenomena that simultaneously pervade, yet recede to the margins of, social actors' attention at any given time. In the context of this shifting methodological landscape, Lupton points to the subfield of digital anthropology as a leading resource (Horst and Miller 2012; Pink 2013; Pink et al. 2016; Pink, Ardèvol, and Lanzeni 2020).

By combining phenomenological, observational, and visual analytical methods, digital anthropologists suggest the study of the 21st century sensorium depends not only upon traditional ethnographic interviewing techniques, but also on the researcher's ability to chronicle the embodied knowledge and practices that enable participants to navigate the digital. These scholars mobilize reimagined ethnographic approaches in order to examine what they term "digital materiality," and the multisensoriality of the "digital intangible" (Pink et al. 2016). This is possible, they argue, by centering the notion of multisensorial experience. The emphasis on *multi*sensorial, as opposed to sensorial experience in the singular, is to encourage researchers to move beyond ocularcentric preoccupations with the visual dimension of aesthetic experience to attend to the sensorium as a more complex whole.

Leading the methodological advancements in this area, anthropologist Sarah Pink argues that scholars of the sensorium ought to resist the temptation to generate primarily semiotic accounts of new media technologies. This requires the "sensory ethnographer" to account for the non-representational consequences of media, thinking beyond what Webb Keane (2003) describes as the "representational economies" of material culture that readily lend themselves to semiotic analysis. As Pink (2015) notes in their methodological guide *Doing Sensory Ethnography*, a paucity of methodological literature exists that addresses the relationship between digital media and the sensorium. Through a careful reconstruction of multisensorial experience, the researcher foregrounds the ways that embodiment and situated knowledge are

(re)produced during a digital encounter. Along these lines, Sarah Pink's (2013) definition of the ethnographic interview guided my approach:

> The interview is arguably the most firmly embedded research method in contemporary qualitative research practice […] I reconceptualize the interview through a sensory approach. I revise the way we understand and interpret the interview on two levels: first, I re-frame it as a multisensory event and as such a context of emplaced knowing; and second, I suggest how, through the interview, we might attend to participants' treatments of the senses in order to learn about how they communicate about and categorise their experiences, values, moralities, other people, things, and more. For the interview to be used to its full potential, I suggest, such a revision in our understanding is needed. (Pink 2015:74)

Sensory studies of this variety generate findings whose sociological corollary is what Isaac Reed (2011) has termed the interpretive mode of sociological explanation, echoing anthropologist Clifford Geertz's (1973) commitment to the "thick description" of collectively shared life.

Critical Sensory Ethnography

As I've outlined more extensively in a methodological chapter devoted to the study of augmented reality art (Goffinski 2022), the above ethnographic approaches put forth by digital anthropologists do not adequately attune the ethnographer to the multisensoriality of power and inequality. Though pioneering, the work of Pink and their colleagues do not directly engage with the political dimensions of multisensorial experience, or the way that power and inequality operate, and are reproduced, at the phenomenological level. This omission struck me as insufficient as I embarked on the ethnographic study of socially and politically motivated artistic

practices. In order to more fully explore the nuanced, multisensorial questions of power and inequality surfaced by augmented reality activists, I suggest that Pink's sensory ethnography warrants a critical supplement. By joining Pink's multisensorial analytical posture with D. Soyini Madison's (2005) *Critical Ethnography: Method, Ethics and Performance,* we pursue an ethnographic approach that more comprehensively engages the relationship between phenomenology and politics. Taken together, I've termed this approach "critical sensory ethnography."

Notably, Madison's commitment to the political dimension of phenomenology suggests that ethnographic studies of participants' subjective, or "micro," experiences serve as a promising opportunity to explore embodied political knowledge. They distinguish their phenomenological methodology from the classical, Husserlian study of a transcendent consciousness and subjectivity that is "bracketed" from the surrounding, natural world (Husserl 1999). Madison opts instead for Heidegger's hermeneutic phenomenology, which accepts that our first-hand experiences are indelibly marked by society, culture, and history (Heidegger 1962, 1999). In Madison's formulation, the critical ethnographer presupposes macro-level systemic inequalities and political injustices to be detectable at the phenomenological level of our participants' everyday, subjective experiences. Madison (2005) further explains:

> [C]ritical ethnographers embrace phenomenology's orientation toward embodiment and perception, both in the telling and enactment of experience. We understand that human perception, on the one hand, reveals idiosyncratic meanings, contingent truths, and felt-sensing perspectives that are born from materiality, power, and the complexity of presence, and, on the other hand, uncovers what it feels like to experience all these elements up close and personal. (P.58)

Thus, Madison's framework prepares the ethnographer for a reflexive, vulnerable process of discovery and understanding, and encourages close investigations of participants' first-hand experiences as they negotiate the phenomenological consequences of social and political inequality.

Drawing on the work of Pink and Madison above, a critical sensory ethnographic approach to the study of augmented reality activism can thus be summarized by several overarching questions:

1) What kind of practices are ARtists enacting or contributing to in our contemporary moment?
2) What sensory, somatic, semiotic, cultural, and political categories do ARtists rely on, reflect on, manipulate, subvert, play with, or generate through the augmented aesthetic experiences they create?
3) What are the conceptual, formal, and experiential conditions that ARtists mobilize to facilitate contemporary, augmented aesthetic experiences?
4) And finally, how do ARtists use the technology of AR to reimagine or protest their physical realities through ARt practices?

Throughout 2021, I conducted remote ethnographic interviews with artists, engineers, developers, and curators who contribute to the interdisciplinary practice of augmented reality activist art. Data were collected remotely due to social distancing restrictions required during the global COVID-19 pandemic. During our interviews, I utilized screen-sharing technology to experience and observe the creators as they designed AR projects first-hand, inviting them to guide me through the design process of their ARt works. As I observed the participants, I posed semi-structured questions regarding their aesthetic and political goals, while allowing for the possibility of more inductive, probing questions. The screen-shared, ethnographic interviews were recorded and transcribed to facilitate subsequent analysis. Importantly, the ethnographic

interview process enabled me not only to talk to AR activists *about* their art. By observing them throughout the process of creating their art through screen-sharing technology, I *experienced* their ARt works at different stages of the design process. By focusing on artists' design strategies, and inviting them to walk me through the way they envision these strategies to serve as social and political interventions, I sought to accumulate the tacit, embodied knowledge they draw upon to generate augmented aesthetic experiences.

Throughout the ethnographic interview process, I observed not only the artists' current works, but inductively selected historical case studies based on the available recordings of my research participants' archives, as well. Fortunately, AR activists make it a common practice to thoroughly document and record their previous installations, due to their inherently ephemeral nature. Much of this footage is also publicly available online, and can be freely accessed via activist websites and social media. After gathering qualitative interview data, video footage of ARt works-in-progress, and audiovisual records of ARt installations from the past decade, the data were coded, transcribed, and analyzed inductively to distill salient themes and concepts (Luker 2009). Thematic qualitative analysis was conducted utilizing the software program NVivo. First-order qualitative codes were inductively derived from interview and observational data, then grouped by second-order codes (See Table 1, *Appendix A*).

To summarize, a critical sensory ethnographic approach to the study of augmented reality activist art necessarily expands the ethnographer's analytical purview to account for the full multisensorial potential of the interview. Subsequent analysis, therefore, relies not only on the verbal interview transcripts generated by the spoken communication overtly exchanged between the interviewer and the participant. My analysis also incorporated the hundreds of works of augmented reality art that participants shared with me as they guided me through the immersive

experiences. As I repeatedly experienced the works of augmented reality art with my participants, I gradually accumulated the embodied knowledge that undergirds their practice. Throughout my analysis, I relied on this form of tacit, extralinguistic data as a salient source of understanding and interpretation alongside the participants' verbal transcripts. Taken together, the spoken and unspoken dimensions of the critical sensory ethnographic interview enabled me to sense and perceive the participants' creative practices more fully. Throughout the remainder of this paper, it's my intention to avoid privileging one source of data over the other.

This multisensorial approach equipped me with the semiotic and sensory data I needed to address my four research questions outlined above. In what follows, I rely on the semiotic and extralinguistic dimensions of our shared augmented reality experiences to pursue deeper, multisensory interpretations of their embodied practices. Accordingly, the static screen shots of their dynamic work and written descriptions of their practices below are inherently limited representations of their repertoires. To obtain a richer sense of the participants' practices, the reader is encouraged to take advantage of the supplemental information regarding the participants' ARt provided in the footnotes throughout.

It's important to note that the methodological limitations of this study were introduced primarily due to the social distancing restrictions that my participants I navigated during the COVID-19 pandemic. Had this research been conducted during a different historical moment, I would have taken advantage of in-person ethnographic interviews and participant observation. Fortunately, my participants and I possessed the technological equipment and expertise necessary to facilitate meaningful remote encounters. Though my research interviews were fully remote, I had access to many of my participants' AR experiences on my personal devices via their software applications and could experience them first-hand. I was unable, however, to

travel to location-specific sites where some AR installations were intended to be experienced. In such instances, I had to rely on my participants video recordings of the experiences as they guided me through them. I have no doubt that I would have gathered richer data from those experiences if I had the ability to encounter them in their intended geographic locations.

FINDINGS

Between January and October 2021, I conducted remote ethnographic interviews with 30 research participants, and experienced hundreds of works of augmented reality art. I recruited the participants via email and social media, inviting them to participate in a research interview related to augmented reality activism, and their use of extended reality (XR) technologies to advance causes that were socially, politically and/or globally salient to them, broadly defined. I utilized the snowball sampling technique to obtain contact information for prospective participants throughout the data collection process (Biernacki and Waldorf 1981).

Participant Details

Interviews lasted between 1 to 5 hours (sometimes distributed across multiple meetings), during which time we utilized audio and video features of remote video chat software. Interviews began with semi-structured research questions, then transitioned into screen-shared demonstrations of participants' augmented reality art experiences as they walked me through their completed and unfinished works. The participants' ages ranged from 24- to 70-years-old. All of the participants were English-speaking, while most were based in North America. Participants were also based in China, Australia, Germany, the United Kingdom, and the

Netherlands. Participants self-identified as White or Caucasian (n=16); Black or African America (n=6); Multiracial (n=6); and Middle Eastern (n=2) (See Table 2, *Appendix B*).

Though most of the participants self-identified as artists, the professions represented by the sample were highly interdisciplinary. It was not uncommon for a self-identified artist to be employed full-time in a profession outside of the arts, as well. In this way, the participants' eclectic professional backgrounds similarly reflect the range of occupations that constitute the emerging technology industry, spanning the artistic and technical dimensions of the field. The occupational backgrounds of the participants included university professors, graduate students, software engineers, CEOs, gallery curators, graphic designers, market researchers, and entrepreneurs. For the purposes of this study, I refer to the participants as augmented reality artists with the portmanteau "ARtists" to denote their interdisciplinary backgrounds joined by their use of AR technology.[21]

The levels of technological expertise ranged significantly across the sample. Some participants reported as little as one year of experience with AR technology. Other participants reported decades of experience pioneering emerging XR technologies since the mid-twentieth century at institutions like MIT, Stanford, Harvard, and the Rhode Island School of Design. The pioneering technologists who constituted the sample explained that their early works of ARt were created with bespoke software programs and applications that they had designed either alone, or with other skilled collaborators and engineers. Some of them continued to maintain their bespoke software and apps in order to maintain full creative and technical control of their

[21] Notably, I, too, held more than one professional role throughout the data collection phase. In addition to my role as a sociology PhD candidate at a university in the United States, I was employed as a full-time User Experience Researcher for the duration of this research. Before our interviews began my participants were made aware of my industry affiliation with a tech company, and were informed that data were being collected solely for the purposes of my dissertation research.

ARt works, as opposed to navigating gatekeeping mechanisms like the Android or Apple requirements that regulate their app stores. The handful of ARtists who charted bespoke software paths tended to be highly skilled, well-connected to other technologists, and had maintained successful careers as professional new media artists or tech entrepreneurs. It was more common, however, for participants to report relying on publicly available commercial software platforms and apps to produce their ARt. Early examples of such programs included LAYAR and Blippar, while later examples included Unity, ARCore, Spark AR, Vuforia, and Snap. The range of experience levels represented across the sample suggest that the technology of AR has become increasingly straightforward to utilize, and that the barrier to entry is now approachable enough for participants who did not consider themselves technologically savvy.

Though many members of the sample were personally and professionally acquainted due to my use of the snowball sampling technique, the social and professional networks of the participants indicate that augmented reality activists do not constitute a homogeneous, organized group unified by a specific movement or cause. Rather, my data suggest that the phenomenon of augmented reality activism is a globally dispersed, emerging form of new media activism that is leveraged by hundreds of ARtists for various social, political, and global purposes.

Participant Reflections on the Medium of AR as a Tool for Activism

Before we turn to the emerging repertoires that constitute the practice of augmented reality activism below, let us first consider the participants' motivations for selecting the medium of AR as a tool for activism among other available digital tools. Each semi-structured interview commenced with a general discussion about how the participants became interested in AR technology, and why they selected the medium for activist purposes. We then transitioned into

demonstrations of their ARt. As I discussed the utility of AR as a tool for activism with each participant, most of them described ambivalent relationships to XR technology and the notion of a metaverse. Though the participants drew from a range of terms to describe their interpretation of a metaverse ("our AR future," "Web 3," "the spatial web," "XR," etc.), the majority of the participants had anticipated the social and political implications of the next wave of the internet years—sometimes decades—before Zuckerberg and Meta popularized the concept. Unlike the previous wave of Web 2 digital activists, then, today's new media activists are equipped with prior knowledge regarding the rise and fall of the utopian expectations surrounding digital tools like the internet and social media. ARtists who leverage AR for activist purposes in our contemporary moment rarely expressed sentiment toward AR that was entirely positive, nor entirely negative.

Accordingly, the most consistent theme generated by my ethnographic interviews with ARtists was that they are not enchanted by the medium of AR technology, and were careful not to fetishize the tools and media they utilize to create their work. Instead, they recognize that the imminent acceleration of Web 3 technology will result in dramatic changes to our everyday lives, and reported an obligation to equip themselves and others with embodied knowledge and strategies to use Web 3 technology from a critical and informed vantage point. If the metaverse is coming, they explain, then it's necessary to demonstrate the social and political capabilities of XR technology before mainstream use cases take precedent purely for corporate gain. Today's ARtists are deeply aware of the powerful potential of immersive XR technologies to monopolize users' time and attention. Unless we proactively and reflexively leverage technology like AR for socially and politically conscious reasons, they insist, the ascent of Web 3 will be largely determined by Big Tech actors with competing intentions for our immersive future. The

undesired version of the metaverse, they explained, is a more immersive reality where Big Tech companies take advantage of the captivating and distracting affordances of XR technology to prey on users' time, attention, and resources at an unforeseen scale. Along these lines, contemporary ARtists generate experiences that they hope will facilitate increased Web 3 literacy for all users, and serve as practical models for the critical adoption of the inevitable coming wave of the internet as the metaverse approaches.

For example, I interviewed Patrick, 37, a multimedia storyteller who utilizes AR to illuminate erased histories of gentrification in his hometown of San Francisco. In the following quotes, Patrick articulates his cautious optimism regarding the early stages of the metaverse:

> PATRICK: I don't know. I struggle with whether this is a good thing or a bad thing, right? Because I mean, I'm old enough to remember what it was like before I wanted to Google everything that I think … I mean for better or worse, right, that is what it is … yeah, I don't know if I'd say I'm excited for it, but I'm very *interested* in it, and what comes from it.
>
> ALIDA: Oh, I see. I appreciate that distinction. Say more about that—"excited" versus "interested" or "intrigued."
>
> PATRICK: Yeah, I mean, I guess for me, "excited," like, almost says that I agree that it's a good thing and I don't know that. I'm still, I'm still trying to decipher that. But yeah, "interested" is, I guess, a more neutral way of saying that. I mean, I think …It's gonna happen, right? So I don't know, maybe it's a little like giving up and accepting our fate already, but yeah. It'll happen … and it'll be another part of life. I think the cool thing is

> that, maybe being aware of that possibility beforehand. Maybe it's something that I could get in on and help shape in a way that is … somewhat less horrible than if it's other people shaping it.[22]

Patrick's inclination to "accept our fate" and cautiously embrace the coming wave of Web 3 technology, he explains, isn't entirely dystopian. Rather, his skepticism regarding the future of the metaverse is tempered by the opportunities he has identified to critically and proactively shape it during these early stages. As Big Tech companies primarily control the technological architecture for the coming metaverse, ARtists seek out opportunities to provide the average user with the experiential, embodied "scaffolding," so to speak, that will be required to move through this highly immersive version of everyday life. The following repertoires, therefore, can be thought of as countervailing modes of seeing, sensing, and consuming the metaverse in ways that thwart and resist Big Tech's monopoly of a Web 3-based reality.

Emerging Repertoires for Building a Critical Metaverse

After conducting 30 ethnographic interviews with practicing ARtists and experiencing hundreds of examples of activist ARt works myself, the data suggest that four emerging repertoires constitute the political practice of AR activism. Importantly, the repertoires utilized by today's ARtists are not static, and will surely be reinterpreted and remediated by future activists as society and technology continue to evolve. The diverse sociopolitical projects that motivate the repertoires outlined below reflect the dispersed, horizontal nature of new social movements. Though the sociopolitical subject matter varied across their works of ARt, the

[22] Personal communication, October 16, 2021

following repertoires were commonly practiced across the sample. In what follows, these repertoires are listed in descending order, beginning with the most commonly demonstrated repertoire. Throughout this section, I draw equally on the spoken and unspoken data generated by my critical sensory ethnographic interviews that consisted of discussion and augmented reality art demonstrations.

(1) Engage the physical world with AR, don't escape it with VR. Most participants had experience designing digital art using more than one of the XR technologies that constitute the spectrum of immersive tech—AR, VR, and Mixed Reality. Yet, it was common for participants to indicate that AR, in particular, afforded immersive experiences that were ideal for the social, political, and global issues that motivated their activism. The participants explained that although VR is typically regarded as an "empathy machine" that generates experiences that have proven to be more immersive than AR, they prefer to utilize AR as a tool for activism for four primary reasons: (1) AR grounds users in the real world to enhance it, rather than escape it; (2) AR technology is more accessible for both users and creators; (3) AR affords social experiences that users can share in real life; and (4) AR has not yet been commercialized to the point that its subversive potential as a medium has been exhausted. Each of these points is further explored below.

The phenomenological grounding in one's real, physical environment and surroundings was the primary reason that ARtists prefer AR to VR technology. Though straightforward, most participants felt the need to expand on this point in detail. What's at stake, they argued, is that creating activist art with AR enables them to *engage* the real world, while VR experiences result in feelings of *escaping* the real world. The out-of-body experience that accompanies a fully

immersive VR experience, they explained, might evoke strong feelings of empathy and build awareness regarding social, political, or global injustices. However, the fully synthetic nature of a virtual reality environment is unable to ground the user in a physical, real, context and feels more like a form of entertainment (a movie or video game) and less like a critical intervention. Further, because a VR environment is not as familiar to a user, it is not phenomenologically disruptive to alter it with 3D assets. The familiar phenomenological and ontological grounding of the physical world, therefore, is a prerequisite dimension of a subversive augmented reality experience.

Importantly, ARtists often depend on the built environment to ground their activist projects and utilize a range of techniques as they generate site-specific works of ARt. Leaving the physical world behind altogether, so to speak, felt counterintuitive to many of the participants who aim to design experiences that enrichen and reconceptualize the user's relationship to the real world *in situ*. For instance, ARtists frequently leverage the site-specific addition of digital assets (3D images) to disrupt the user's familiar sense of their physical surroundings, resulting in the juxtaposition of digital and physical elements to produce a hybrid reality. This repertoire is often employed by ARtists who utilize strategically placed digital elements to surprise the user, inviting them to pause and critically reflect on their familiar surroundings.

My interview with artist Tamiko, 64, nicely illustrates why AR is her preferred medium due to its site-specific affordances. After completing degrees in engineering and product design from Stanford and MIT, and a degree in studio art in Munich, Tamiko charted a unique and pioneering career at the intersection of art and emerging technology. As an original member of the Manifest.AR collective, much of her recent work leverages AR to invite the user to critically reflect on the effects of climate change. Site-specificity is an indispensable dimension of this

process, as she utilizes 3D overlays to give form to the often-unseen impacts of climate change throughout the user's physical environment (See Figures 7, 8).

Figure 7. "Clouding Green" by Tamiko Thiel (2012). Commissioned in 2012 by the Zero1 Biennial in Silicon Valley, California, and the Samek Gallery at Bucknell University, Pennsylvania. Each cloud refers to a major Silicon Valley cloud computing provider cited in the Greenpeace report "How Clean is Your Cloud," with the color reflecting the percentage of renewable energy used to power each company's cloud servers.[23]

Figure 8. "Gardens of the Anthropocene" Tamiko Thiel. 2016-7. Gardens of the Anthropocene posits a science fiction future in which native aquatic and terrestrial plants have mutated to cope with the increasing unpredictable and erratic climate swings.[24]

[23] Learn more about this ARt here: https://tamikothiel.com/AR/clouding-green.html
[24] Learn more about this ARt here: https://tamikothiel.com/gota/index.html

The second reason participants prefer AR for activist purposes is that AR technology facilitates experiences that are more widely accessible than VR, for both users and for creators. For users, augmented reality experiences can be accessed through a smartphone or tablet by either downloading an app, scanning a QR code, or, increasingly, visiting a website. While the evolution of comparatively technical hardware like AR glasses and headsets parallels the trajectory of AR technology, the smartphone is currently the modal AR interface. On the other hand, VR experiences are typically accessed with the use of wearable technology like headsets and gloves. Presently, this equipment is more costly than the typical smartphone. Participants also noted AR experiences can be designed with relative ease compared to the technical acumen and hardware required to create a VR experience. This relatively lower barrier to entry led participants to observe that AR is a more accessible technology for creators. Along these lines, several participants explained that an informal, guerilla-like culture accompanies the field of augmented reality as fellow activists exchange tips and tutorials. They contrasted this culture, rooted in anarchist DIY practice, with the comparatively polished and commercial field of VR which is more likely to be constituted by established designers at large tech companies. Many participants described their commitments to increasing access to their work by partnering with schools (a large portion of the sample are teachers), non-profit organizations, tourism boards, DIY galleries, and art collectives. Though less common, several ARtists also had experience showcasing their activist ARt in traditional outlets like museums and mainstream art galleries.

The third reason that ARtists prefer AR to VR is the phenomenological difference between AR's social, shared experiences and VR's self-contained, isolated experiences in virtual environments. As a more inherently social medium, the participants argued, AR enables users to share immersive experiences because the same screen or interface can be viewed by multiple

people in physical proximity to one other. Additionally, participants argue that sharing an AR experience in physical space with other people nearby generates stronger feelings of social co-presence than sharing virtual space with other avatars, or sharing a physical space in a room full of people wearing VR headsets that completely occlude one's sense of the physical world.

Lastly, participants noted that with any new medium, its novelty and capacity for creative subversion as a tool for activism are time-limited. They explained that the lifecycle of a new medium typically follows a trajectory from early experimentation to mass adoption that eventually culminates in the medium's domestication, commercialization, and commodification. In order to take advantage of AR's subversive potential as a tool for activism, ARtists diligently monitor the emerging Web 3 industry landscape. Many of the participants expressed a sense of urgency to leverage the subversive potential of AR as a medium as its window of opportunity inevitably comes to an end. In order to design experiences that are phenomenologically surprising and ontologically subversive, the medium itself must be just novel enough to shock or surprise users, but not so novel that it is too confusing or disorienting. If an activist attempts to utilize a new medium too early in its timeline, the work runs is at risk of being unintelligible to users and having no effect on them. Conversely, the subversive potential of a new medium can be threatened as its lifecycle approaches mass adoption, and it becomes banal. At this point in the medium's lifecycle, users have accumulated so much embodied knowledge of the technology that its "shock effect" has worn off.[25] The ARtists I interviewed frequently observed that we are in the pivotal window of opportunity in the lifecycle of AR, while this "sweet spot" for VR has likely already passed. The maturity of VR technology, they explained, has evolved at a rate that

[25] See Shane Denson's (2017) essay "Techno-Phenomenology, Medium as Interface, and the Metaphysics of Change" for a helpful treatment of these technological and phenomenological cycles.

has outpaced AR, making VR a less appealing tool for activist purposes as it approaches mass adoption, increased commodification and co-optation by Big Tech.

(2) Augment spaces, not faces. Though adding bunny ears or beauty filters to one's face are among the most popular use cases of AR technology, ARtists distanced their alternative, activist practices from these mainstream examples. ARtists often referenced the use of Snap or Instagram filters that utilize self-facing cameras to augment the user's face as an undesirable example of "using AR for the sake of using AR" (see Figure 9).

Figure 9. Example of a mainstream use case of AR to augment the user's face. Gucci Beauty App Enables Users to Embellish their Social Media Presence with Instagram Filters featuring Augmented Reality Technology (Lazaro 2018)

Throughout my interviews with ARtists, they frequently observed that these use cases point to the untapped potential of augmented aesthetic experience for socially or politically informed purposes. Rather than fetishize the medium of AR, then, ARtists are more concerned with exploring the sociopolitical possibilities of augmented aesthetic experience.

My interview with Nicolas, 51, sheds light on the experiential potential of AR beyond its mainstream use cases. As the co-founder and CEO of AR startup Hoverlay, Nicolas and his team

are motivated to support creators without technical expertise to leverage AR technology for socially and politically relevant causes. Founded in 2017, Nicolas and his co-founder, Milan, are committed to advancing the experiential possibilities of Web 3 through meaningful AR experiences. Nicolas notes that the *experiences*, rather than the *medium* of AR, are his ultimate focus:

> NICOLAS: [When we started Hoverlay in 2017] what I noticed was that there was a level of saturation in content through the traditional outlets, starting with social media, that the quality of communication was going down. And it was really, really difficult to tell a story and connect with the public. The Web [2.0] was really in a complete silo from our day-to-day experiences. So, you have a lot of content that gets created that is less and less accessible to the public, and less and less relevant … because it's bombarding you. The curation is done by algorithms. There is no emotion in the algorithms, they are very biased in the sense that they are trying to get you to spend more time clicking on things versus trying to elevate your awareness of what's around you, your community, and so on.
>
> ALIDA: Sure (nodding)
>
> NICOLAS: […] And so I feel like there is this opportunity to rethink that interface between the public, the community, and digital content … to create a new form of content … a new medium, not just the tech, not just the 'special effects.' [We realized] AR was a good visual layer, a useful tool, but it's just the visualization piece … it *can* be the end all be all, but it's not for us. I mean we actually don't like to talk about AR that

> much when we talk because we feel like there is a certain shallowness associated with AR today … So I think we try to avoid AR as a term, to be too focused on it, because what we think we're doing is not the way people think about AR. So, we're trying to use the technology as a visual construct to narrate stories, to bring content that is going to help people experience the community, their surroundings differently. You're not going to see us doing things with the [front]-facing camera because, we're using the rear-facing camera. We want to augment how you see the world, not how you see yourself … so we're trying to augment spaces versus faces.[26]

Notably, this excerpt from my interview with Nicolas illustrates the boundary that ARtists repeatedly described between mainstream augmented reality art, and the more socio-politically conscious activist ARt that constitutes their practice. As mainstream AR use cases augment faces with things like bunny ears, humorous filters, or beauty enhancements, activists like Nicolas and the participants interviewed throughout this study distance themselves from such AR experiences. Turning the camera away from one's face, they explain, is key to constructing a critical metaverse marked by meaningful engagement with one's surroundings.

Nicolas's observations regarding the front-facing and rear-facing potentialities of AR were similarly addressed by Alan, 48, a media artist and professor of cultural and creative industry at a university in China. As an original member of the Manifest.AR collective, Alan has played a pioneering role in the development of AR as a medium for activism. Alan describes the tension between the mainstream use cases of AR that rely on the front-facing camera that faces the user to augment their face, and the alternative use cases of AR that utilize the rear-facing

[26] Personal communication, October 14, 2021

camera that points toward the user's environment. With Nicolas, Alan similarly considers the implications of utilizing the medium of AR to "augment spaces versus faces." Alan explains:

> ALAN: There is a real sort of tension or conflict in AR art, um, that is maybe there in all of media art. It certainly reminds me a lot of the avant-garde sort of media art and its realization in the internet age, you know, in this cycle, you know, multiple channels of grassroots distribution. But what that results in is a sort of disappointment of aesthetics in some ways, right? And certainly a disappointment of aesthetic revolution. And I think that's also present in AR, because I think if you look at these early AR [art works], they really dream about this real sort of engagement with the outside. You know, that AR is about geolocating. It's about putting things in reality. It's about connecting people to places or ideas or you know, it's very sort of outward focused, which I think is a tendency of art ideas, and then I think, you know, the reality is the popularization is like, you know, its first big push is around augmenting the face and sort of putting on bunny ears. And this is [AR's] big popularity. And I think that's very true right now. And so [AR] seems kind of fairly self-focused, right? And sort of narcissistic and isolating in some ways.
>
> ALIDA: Mhmm, yeah (nodding)
>
> ALAN: And I think there's a tension there, and I don't think it's particular to AR. But in some ways, that tension between a desire, I think, in people to be outward focused and [then] finding their technology is isolating and narcissistic. And, you know, that's a current tension. And so, of course, you know, art or expressive energy is going to push

against that, it's like trying to push us out even as things are pulling us in, you know, and then I suppose there's kind of capitalism on top of that (pauses, then laughs), you know, *Facebook*. And I don't know how to fit all that together necessarily (laughs).

ALIDA: (laughs) I guess that's what my dissertation is for.[27]

The quotes provided by Nicolas, and Alan above illustrate that today's augmented reality activists seek to create alternative AR experiences that depart from—and resist—the mainstream uses of AR exemplified by Snap and Instagram face filters. To borrow Alan's language, the "art or expressive energy" generated by today's ARtists seeks to "push against" the ascent of mainstream Web 3 use cases that are "pulling us in." As new media artists and activists, ARtists are more likely to leverage the rear-facing cameras of mobile devices to enhance and augment the user's physical surroundings rather than the user's face and body.

(3) Raise the dead to rewrite history. The third repertoire that constitutes contemporary ARt activism is the use of AR to resurrect historical actors to revise historical narratives through site-specific ARt experiences. This repertoire lends itself to physical sites where socially and politically significant histories are either unacknowledged or deliberately erased by the built environment. Marisa, 35, an artist and professor in Virginia, utilizes AR to resurrect erased and forgotten histories of enslaved African Americans throughout New England. One of her works of ARt, "Sweet Chariot," invites users to complete an immersive AR walking tour throughout the

[27] Personal communication, July 10, 2021

city of Philadelphia.[28] The interactive ARt guides users to eight different sites throughout the city. Users are invited to utilize a mobile app to trigger ARt that draws on song, poetry, acting, dance, and visual art to bring specific historical details related to the African American struggle for freedom to life (Figure 10). Marisa's artist statement for the project reads:

> I set out to make a ghost story. I wanted a story to creep up from behind and blow gently on your neck. And when you turned, I wanted it to flicker off—making you wonder whether you had only imagined it. Sweet Chariot is that ghost story. The guide, Amelia, is borrowed from the past. As with my previous work, I wanted to inhabit a character who could shepherd audiences through doorways, down side streets, in and out of institutions, over centuries, and out of the secret passageways of past, hidden all around us, in plain sight, in the present.[29]

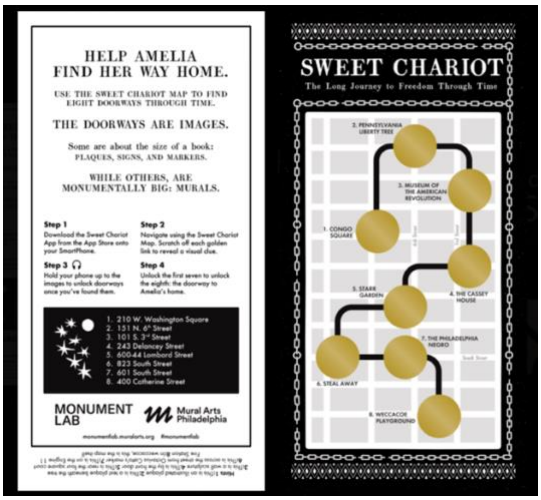

Figure 10. The map and instructions that accompany the "Sweet Chariot" immersive AR walking tour. Marisa Williamson. 2017.

[28] Learn more about "Sweet Chariot" here: https://www.sweetchariotml.com/ and here https://monumentlab.com/projects/marisa-williamson-sweet-chariot-the-long-journey-to-freedom-through-time
[29] Artist statement can also be found at: https://www.sweetchariotml.com/

Marisa further explains the work, and how augmented reality supports her artistic and political objectives:

> MARISA: I would say my number one draw to augmented reality is the way it frames questions of visibility and allows people to play and consider what might be buried or coded or embedded or hidden in black boxes like our phones or in our computers, but also in the black boxes that our monuments or historical buildings or institutions that have a similar, you know, dense cladding around their intended ideology … like, it's hard to figure out what they are *about* … And the idea of the playfulness that might be introduced on top of a solemn place that could find a way, could forge a way for ghosts and people to interact or cohabit a space peacefully. I mean that I think that's one of my goals, is to figure out how to create space for the living and the dead to be in at the same time.
>
> ALIDA: Mhmm (nodding)
>
> MARISA: […] like resistance, resistance as being a form of creating new afterlives. And I think for a lot of [Black artists], we're trying to figure out how to turn histories we learn about that are violent and painful, like trying to figure out how we live with those, because I think for some of us, it's a haunting history. It's one we're not comfortable living here with, and with that history going unmarked and we're not sure what we can do. You know what those people deserve and how we can commune with them and make their voices heard.

As we continued our conversation, I inquired about how Marisa utilizes the semiotic and extralinguistic or sensory dimensions of augmented reality in a didactic manner to invite users to unlearn or relearn history through her work. Marisa illustrated her points by referencing a particular moment in the "Sweet Chariot" walking tour—an AR overlay she positioned on top of a mural depicting W.E.B. DuBois (see Figures 11, 12).

> MARISA: Yeah, I mean I think I'm really into layers. My students are always like, "Oh you're always talking about layers, hoping that someone will get like *one* layer." … In Philadelphia and Pennsylvania, they have these blue iconic historical markers and they're a little bit above a kid's sight line. So, I always felt like they weren't really meant for everyone. And I have been interested in how we have a certain number of texts on the street, these markers, street names, you know, signs and that it's still hard to *read* a space, it's still a bit opaque, and then there are things that are completely obscure, things that aren't really meant to be easily read. And so I thought, you know, let me use something that's already here as a kind of key, as a kind of trigger to go deeper. Let me ask what is too static about a mural? What is too quiet about a mural? … And so I think for me, didactic is a kind of resistance to, it's a kind of friction and resistance and a push and a struggle. I think it's hard to learn. I've been thinking a lot recently about how it is actually hard to acquire new information. And so I think I'm trying to make work that confuses and maybe offers entertainment sometimes, but is actually trying to accidentally teach or have a lesson accidentally happen while you're invested in doing a scavenger hunt [during the Sweet Chariot walking tour].
>
> ALIDA: Mhmm (nodding)

MARISA: […] I guess I would say this is a space where I got really interested in the non-linearity of narrative … I was interested in the history of this neighborhood. It's constantly being gentrified. It's just like so densely changed. It just changes, the Seventh Ward is changing every day, and at this point the tour is getting close to the burial ground where [the walking tour Sweet Chariot] ends … So I was really interested in how a monument can be not just on site, but a journey to the site through these tough histories.[30]

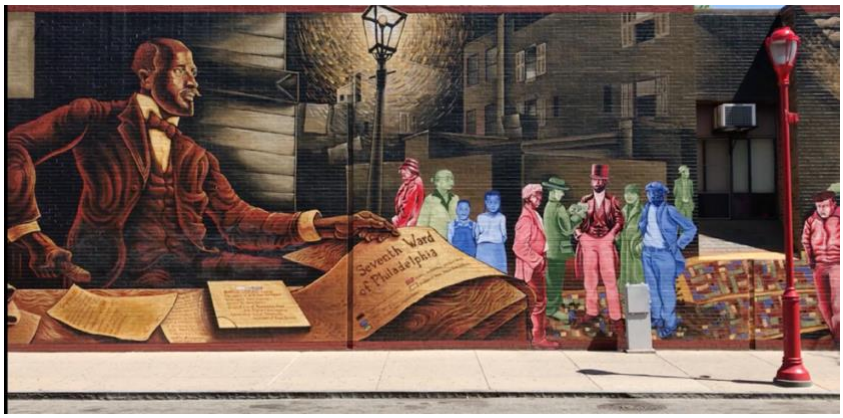

Figure 11. Original mural of W.E.B. in Philadelphia's Seventh Ward, not yet augmented by Williamson's "Sweet Chariot"

Figure 12. Mural of W.E.B. DuBois in Philadelphia's Seventh Ward, augmented still from "Sweet Chariot," by Marisa Williamson, 2017

[30] Personal communication, March 22, 2021

Marisa's ARt practice illuminates how AR permits the ARtist to disrupt time and physical space while inviting the user to reconceptualize their relationship to the unseen, or erased, histories that undergird everyday environments. The didactic impact of such experiences is two-fold. As the ARt experience occurs, the user is immersed in a reimagined version of their everyday surroundings. They are invited to reinterpret their familiar surroundings by seeing and sensing the unseen and invisible traces of the past with the help of digital overlays. When the ARt experience is over, the physical environment still contains the trace of the ARt intervention. Subsequent encounters with these familiar surroundings have the potential to reinforce a deeper, embodied knowledge of the past's "haunting" presence as they recall the unseen and invisible historical layer that AR has disclosed to them.

Similarly, the work of Craig, 62, an artist, professor and original member of the Manifest.AR collective, introduces digital skeletons across the US-Mexico border as a tribute to the migrant workers who have died attempting to enter the US. The work, entitled "Border Memorial: *Frontera de los Muertos*," was designed in collaboration with Mark Skwarek in 2015 after Craig acquired access to a database maintained by the Pima County medical examiner's office in Arizona that documented the GPS locations where human remains were found along the border. By giving form to each of the documented sites of the fallen migrant workers, the ARt generates empathy and challenges xenophobic narratives that preclude a fuller understanding of the historical context of the border region (See Figure 13).

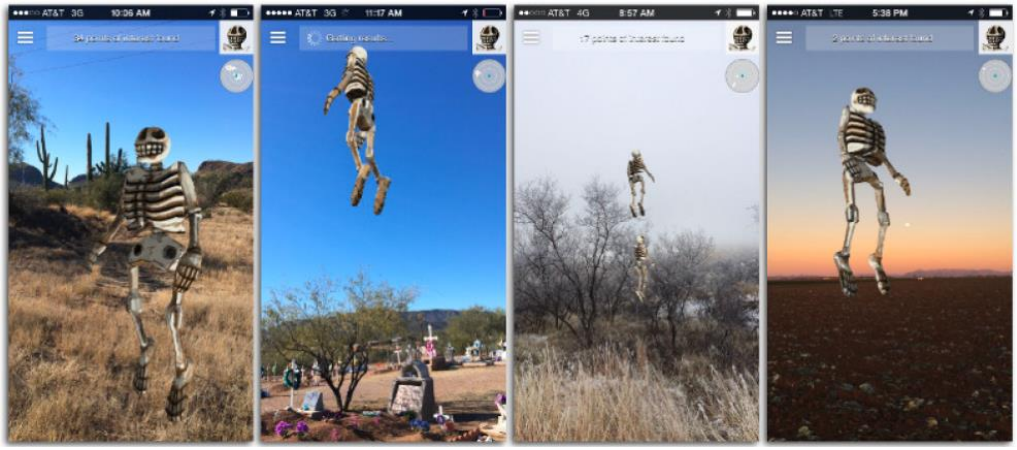

Figure 13. Border Memorial: *Frontera de los Muertos*, John Craig Freeman, 2015. (Freeman and Auchter 2015)

During my interview with Craig, he explained that the medium of AR permits him to invite users to engage their physical environments through an embodied form of reasoning that challenges rational notions of linear time and space:

> CRAIG: All of a sudden there's a whole new possibility of narrative being constructed over space rather than over time like we're used to. Like, in any form of narrative, it's always had a beginning, a middle, and an end through time. You know, cinema, storytelling, songwriting—the meaning is constructed over time. Whereas with virtual and augmented reality, meaning is constructed over space, like moving through the space becomes an act of reasoning and the construction of meaning. And so that juxtaposition of virtual objects sitting in a specific location … putting objects out in the real world based on their GPS location, right? … that act of piecing them together is where the meaning is constructed.

Craig goes on to discuss how his motivation to explore the relationship between the human being, linear reason, meaning-making, and the built environment is informed by poststructuralist theory. He also cited the work of Guy Debord and the Situationist International as a key influence:

> CRAIG: [Debord taught me] how to take this idea, like first of all, like experiencing space … the idea of these kind of alternative ways of experiencing place. You know, [the Situationist International] had the idea of navigating the streets of Paris in a way that like—*dérive*—the idea of like drifting through the streets of Paris. And this idea that there were these kinds of vortices, these kinds of places where the energy of the city comes together in an, um, emergent way.

By juxtaposing the past and present through site-specific immersive AR experiences, the work of Marisa and Craig invites users to reconceptualize their relationship to time, space, and history. Rewriting historical narratives through ARt, however, relies less on substituting traditional narratives with textual revisions. Rather, AR experiences enhance the sensory potential of a space by rendering the unseen seen, thereby reviving histories through a felt sense that there's more to the built environment than meets the eye.

(4) Virtually transgress institutional boundaries. The final repertoire enacted by AR activists is the virtual transgression of institutional boundaries. Since the inaugural interventions of the Manifest.AR collective, AR activists have exploited the boundaries of physical institutions by infiltrating them in virtual space. Two notable examples carried out by Manifest.AR include infiltrating the MoMa organized by Mark Skwarek and Sander Veenhoff in October 2010 (see

Figures 14, 15) and the Venice Biennial in 2011 (see Figure 16). In both examples of ARt activism, the Manifest.AR collective utilized augmented reality to critique the gatekeeping of prestigious institutions in the art world. With AR, the artists trivialized the power of these institutions by transgressing their physical restrictions and ignoring formal submission guidelines. They opted instead to "install" their works of ARt virtually, inviting friends to come enjoy their pop-up ARt "shows" at these iconic institutions.

Figure 14. Sander Veenhoff and Mark Skwarek test out their ARt the day before the We AR in MoMa event. October 2010

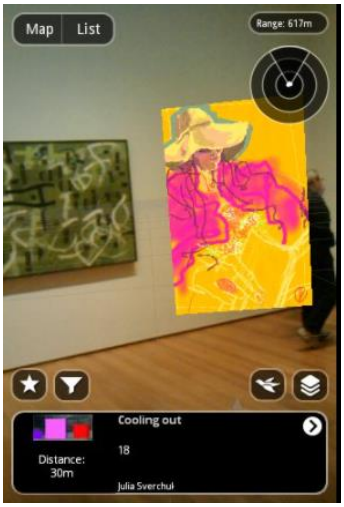

Figure 15. Work of ARt by artist Julia Sverchuk screen captured by Sander Veenhoff in We AR in MoMa

Figure 16. Shades of Absence, Tamiko Thiel, 2011 Venice Biennial. "Shades of Absence: Outside Inside" focuses on artists who have faced threats of arrest or violence. Placed in the Giardini main concourse, in this augmented reality (AR) artwork gold silhouettes of artists' faces hover in a virtual pavilion that is formed by terms of transgression used to justify censorship.

In a more recent example of this repertoire, Cheyenne, 29, is a designer and artist based in the Bay Area. Following the murder of George Floyd in 2020, protests and uprisings emerged throughout the United States in support of the Black Lives Matter movement. Physical monuments associated with racial injustice were vandalized and removed by activists during the uprisings. In San Francisco, however, Cheyenne noted that the municipal authorities responded to the increased pressure to remove problematic monuments by first inviting an advisory committee to conduct an audit of the city's monuments. Frustrated with the city's bureaucratic response to the crisis, Cheyenne hijacked the process by creating a fictional "task force" to solve the problem more expeditiously. She assembled a team of other activists and artists from the periphery of San Francisco's art world to establish the New Monuments Task Force.[31] She and her team conducted their own audit of the city's monuments, and organized a workshop to teach

[31] Learn more about the New Monuments Task Force here: https://newmonumentstaskforce.org/

activists how to vandalize them with augmented reality (see Figures 17, 18). They also issued two unofficial "reports" that contained their findings following their unsanctioned audit of the city's monuments and memorials.

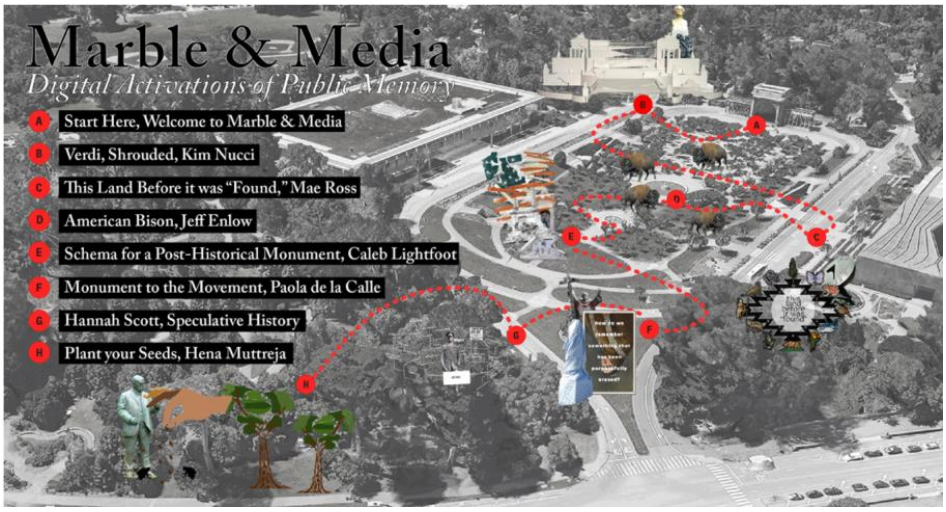

Figure 17. Map of ARt works commissioned by the New Monuments Task Force installed throughout San Francisco's Golden Gate Park

Figure 18. One of the ARt works commissioned by the New Monuments Task Force, Hannah Scott's "Speculative History" augments a statue of US Army General John J. Pershing to protest the general's memorialization. The phrase "Welcome to Future Society X" centers the AR overlay.[32]

[32] Learn more about Scott's "Speculative History" here: https://www.youtube.com/watch?v=N0UP0_1pX_8&t=1s

The work of Cheyenne and her collaborators demonstrates the potential of virtual 3D space as an emerging site of political participation. Rather than wait for their local government to take action, Cheyenne and other activists demonstrated that digital vandalism with AR sustained relevant critical discussions until physical changes to the monuments eventually took place. In this way, Cheyenne's ARt highlights the ability of AR to galvanize and sustain support for activist projects and movements. Rather than conceive of ARt activism as a removed form of sociopolitical participation that digitally hovers above real-world injustices, ARtists like Cheyenne demonstrate that AR produces augmented blueprints of a more socially and politically just real world to prompt real change.

DISCUSSION

This study's empirical findings demonstrate that the landscape of digital activism is shifting as a more immersive version of the Web 3-based internet gradually supplants Web 2 technology. The resultant emerging new media activist repertoires serve as a glimpse into a more immersive future where the relationship between the virtual realm and the physical world is ontologically and phenomenologically transformed by Web 3 technology. While the initial wave of digital activists navigated the uncharted terrain of cyberspace for the first time, my findings illustrate that the next wave of digital activists will be tasked with navigating a paradigm shift to a metaverse built with Web 3 technology.

Much like their predecessors who explored the rise of Web 2, today's new media activists are similarly concerned about the corporate race to monopolize this technological transition. Unlike digital activists operating within a social media-centric, Web 2 paradigm, however, the new media ARtists in this sample were typically unwilling to reconcile the paradox of supporting

Big Tech companies by using such platforms to advance political objectives related to social change or climate justice. Though Web 2 activist repertoires routinely leveraged social media sites like Twitter and Facebook, the emerging repertoires of today's ARtists operate beyond the two-dimensional version of cyberspace where most digital activism has occurred. My participants often remarked that they considered the activist repertoires of the Web 2 phase of the internet to be too removed from the physical world. Many of my participants expressed dissatisfaction with the notion of sending angry Tweets as a meaningful form of political participation. They considered such repertoires to be too removed from traditional forms of protest in the real, physical world. In response, they draw on a more immersive form of embodied knowledge to intervene at the intersection of the human sensorium, the real world, and the virtual realm in novel ways. Their ARtistic practices draw on embodied knowledge that will be necessary to construct and interpret political meanings in a version of reality that looks, feels, and functions differently than a Web 2-based Twitter feed on a mobile device. In doing so, today's ARtists are generating immersive forms of political participation that will be increasingly legible in the emerging context of the metaverse, and accessible beyond the parameters of mainstream platforms. While the range of sociopolitical projects of today's ARtists is diverse, their practices are buttressed by a commitment to building a version of the Web 3-based metaverse that centralizes the sociopolitical needs of the real, physical world. In McLuhan's (1964) classic terms, the *medium* of AR is an essential component of the diverse political *messages* circulated by activist ARt.

Thus far, I've primarily conceptualized the creative practice of augmented reality art *qua* activism in order to demonstrate that the above repertoires constitute the next wave of digital activism. Yet, the implications of ARtistic practice extend not only to the literatures on digital

activism and new media activism. Indeed, the research participants in this ethnographic sample identify both as activists and artists. To conclude, I argue that the sociology of art also has much to gain from closer engagement with this emerging phenomenon as the landscape of art becomes increasingly digital and immersive in a metaverse context. As Lievrouw (2011) reminds us, the creative and unorthodox nature of new media activism—as opposed to mainstream digital activism—can be attributed to the experimental influence of *artists*. By foregrounding the sociopolitical concerns of ARtists and their resultant works, rather than their institutional or economic contexts, I hope to have contributed an empirical study that responds to recent calls for a more meaningful sociology of art (McCormick 2019, 2022).

From the perspective of the ARtists I interviewed, what's at stake throughout the course of their creative practice is more than the inventive remediation of Web 2-based activist repertoires. Though the new media artists and activists in this ethnographic study have certainly remediated Web 2 forms of digital activism in creative and novel ways, their objectives aren't limited to technological experimentation or mere aesthetic novelty. The foregoing repertoires demonstrate that ARtists are among the first social actors to embody a relationship to the metaverse that combines the virtual and real worlds to advance a diverse range of sociopolitical projects. Along these lines, this study's findings support Mark Hansen's (2004) emphasis on the ways that new media artists navigate the shifting aesthetics of embodiment in an increasingly digitized environment. The embodied, creative practice of augmented reality activist art is derived from artists' concerns that the ubiquity of technology has resulted in an onslaught of digitally mediated experiences that are devoid of meaning or sociopolitical significance. In some instances, the participants in this ethnographic study have spent decades anticipating the eventual paradigm shift to the metaverse. As they've accumulated the embodied knowledge necessary to

navigate it, ARtists are acutely aware that XR technologies like AR and VR have been proven to be more capable of commanding our attention and eliciting strong emotions like empathy. They're also aware that today's typical user lacks any prolonged experience with immersive technology, which makes them susceptible to the novelty effects of Web 3 technology. When commodified and monetized, immersive experiences characterized by these heightened levels of "cognitive stickiness" can be extremely addictive and profitable. As Big Tech continues to develop Web 3 technology into a more expansive metaverse, my findings illuminate how today's ARtists have begun to embody countervailing political practices that stand apart from such mainstream Web 3 use cases. Accordingly, a virtual realm built and regulated by the world's most powerful tech companies stands in direct contrast to the metaverse envisioned by the ARtists in this study.

By grounding their hybrid interventions in the real world, ARtists leverage the expansive potential of the virtual to give digital form to real, alternative sociopolitical possibilities and futures. Thus, their socially and politically conscious interventions anticipate a critical version of a metaverse that does not yet exist, but can be glimpsed episodically with each ARt encounter. Following their predecessors who navigated both the utopian and dystopian dimensions of Web 2 activism, today's Web 3 activists are acutely aware of the strengths and limitations of the next wave of digital activism. Corporate gatekeeping, barriers to accessibility, and users' low levels of technical literacy are some of the most common obstacles that the ARtists in this sample reported. Yet, their interventions demonstrate a commitment to keep pace with the evolution of Web 3 technology. Future research is therefore needed to more fully understand how artists continue to leverage the full range of emerging XR technologies to generate new modes of embodied sociopolitical participation despite such limitations.

Importantly, it would be an oversimplification to suggest that activism of any kind is constituted by one repertoire, regardless of whether it is informed by Web 1, 2, or 3. The ARtists in this study were especially reflexive about the relationship of Web 3 activism vis-à-vis traditional forms of protest. The participants don't consider their new, experimental form of activism to be an attempt to *replace* traditional forms of protest, but rather an *additive* repertoire that activists might add to their toolkits. Indeed, many of them reported participating in traditional, in-person protests as part of their multifaceted activist practices. This further supports Lievrouw's (2011) argument that new media activists remediate activist repertoires by creatively reimagining prior repertoires in an iterative manner through time.

CONCLUSION

We are currently experiencing the transition from the Web 2.0 phase of the internet to a significantly more immersive future—variously described as the metaverse, Web 3.0, or the spatial web, among other terms. Just as the Web 2 stage of the internet irrevocably transformed our everyday lives, the ongoing development of Web 3 technology suggests a new period of transformation is underway. This ethnographic study considered how 30 new media activists have used augmented reality, an emerging Web 3 technology, as an experimental form of new media activism to advance a diverse range of social, political, and global causes. In order to explore the semiotic and extralinguistic dimensions of this pioneering form of new media activism, I've employed what I've termed a "critical sensory" ethnographic approach. Throughout ethnographic interviews and shared demonstrations of the ARtists' works, linguistic and sensory data were collected to inform analysis and further explain ARt activism.

Four emerging repertoires were identified as commonly shared across the practices of 30 ARtists in the sample: (1) engaging the physical world with AR, rather than escaping it with VR; (2) augmenting spaces, not faces; (3) raising the dead to rewrite history; and (4) virtually transgressing institutional boundaries. Each repertoire signals a phenomenological departure from the social media-centric repertoires that characterized digital activism during the Web 2 stage of the internet. Though the sociopolitical subject matter featured throughout the ARtistic practices in this study varied widely, these repertoires collectively illustrate how the Web 3 technology of augmented reality will transform the way that political meanings are constructed, perceived, and circulated in an increasingly hybrid future reality. Although the metaverse does not yet exist, ARtists have spent years leveraging AR technology creatively and experimentally as they embody critical political practices that will be legible primarily in the context of the coming metaverse. The critical metaverse they've begun to build in the process stands in contrast to the metaverse currently being designed by Big Tech companies like Meta. The embodied political practices modeled by ARtists interviewed in this ethnographic study, therefore, provide a glimpse of a metaverse where Web 3 technology will change not only how we communicate, socialize, shop, learn, work and play. The emerging practice of ARt activism anticipates a critical metaverse where the changing landscape of digital activism will also generate new forms of political participation and protest.

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Appendix A

Table 1. Coding Architecture

First-order Codes	Second-order Codes
'PLAYING' WITH THE PHENOMENOLOGICAL AFFORDANCES OF AR	AR affords emergent, spontaneous experience, new rules for being
	I play with AR as forced phenomenological metaphor or commentary
	I play with evolution from spatial AR to traditional AR
	Phenomenology of augmenting the self
	I play with AR like clay
COMPARING AR TO VR	AR app can include IRL calls to action so it's more powerful IRL
	AR feels more communal than VR to me
	AR fosters more politically salient site-specific experiences than VR
	AR is a different, hybrid kind of immersion
	AR is less immersive because smartphone interface limits its impact
	AR is less mature than VR, so less impressive for now
	AR is more accessible than VR
	AR is public, VR is private
	As a sculptor, 3D design is limitless- both AR and VR
	Prefer AR because VR too removed from IRL
	Unlike VR, AR juxtaposes clash between real and virtual
	VR blocks out distractions for a more immersive experience
	VR for pain management suggest it's more immersive
	VR is another magical world, access other consciousness
	VR is synthetic but AR retains the real world
RELATIONSHIP TO THE LABEL 'ACTIVIST'	Yes, I'm an activist, but AR will soon be corporatized and our subversive window might be closing
	Yes, I'm an activist who isn't aggressive or oppressor oriented, more victim oriented with desire to build empathy
	Yes, but not to the fullest extent possible
	Yes, I'm an activist general responses
	Yes, my identity makes me an activist by default
ARTISTIC & THEORETICAL INFLUENCES OF THE WORK	Assemblage
	Audio and sound
	Avant-garde artists inventing new language for new media

First-order Codes	Second-order Codes
	Background training is in drawing
	Binary of digital and analog
	Binary of real and not real
	Challenge linear time
	Computer science
	Early 90s locative media, memes, activism
	Electronic music
	Film and experimental video in 90s
	Fundraising and law
	Gender, Domesticity, Space
	Graphic Designer
	Greg Ulmer's extension of Derrida-electricy is new cognitive paradigm
	Inspired by locative media audiotours of hidden histories
	Journalism
	Mechanical engineering
	Philosophy
	Photography
	Physical UX design
	Pioneered product design art and engineering
	Postmodernism and Queer Theory
	Sci-fi
	Sculpture
	Situationists and DeBord-rethinking space
	Theater and storytelling
	Traditional documentary journalist in Kuwait and Egypt
	Urban Planning and Landscape Architecture
	Video and Digital Communications undergrad
	Video Art and Curation, made money as graphic design
	Video Game Design
	Youth and social work
	Concept of augmentation
	Islam and actualizing knowledge
TRANSGRESSING INSTITUTIONAL BOUNDARIES	AR exploits public vs private space
	My work can evade authorities because they don't understand XR

First-order Codes	Second-order Codes
	No formal funding or permission associated with my project
	My work breaches iconic gatekeeping spaces
	AR is a guerilla tactic because no permission needed
	I still want buy-in from the community I'm representing, even if formal permission isn't required
	You can't fine me, or destroy my ARtwork
	I had a difficult time finding formal outlets for my work, so AR was appealing
CHALLENGES AS A NEW MEDIA ARTIST TODAY	AR platforms and software strongly impact my ability to create
	AR projects require serious time investment
	Blocker for AR creation is Apple's App Store
	Navigating art world's view of AR and its status
	New media very competitive, plagiarism
	Keeping up with AR creator culture can be exhausting and competitive
	Lack of standardized AR interface and devices still an open question
	Big tech gatekeeping is a pain point for AR
	New Media wasn't respected in traditional art school when I was starting out
HABITUATING USERS	User journey grabs attention with positive experience before introducing negative subject matter
	iPhone watershed moment for AR accessibility and literacy
	Users aren't inherently very creative and need rails for XR
	Regulation for children and VR experiences
	The interface-screen, phone, public screen, impact experience
	Young people have different embodied knowledge
IMMERSION & EMPATHY ARE CENTRAL TO MY WORK	AR immersion on-site is more impactful than VR
	Exploring intersection of immersion & mental health
	I consider AR techniques that build storytelling empathy
	I'm careful not to overly gamify serious causes with XR
	Psychogeographic ARt as a form of developing understanding of site specific issues
WEB 3 IS CHANGING ACTIVISM	Civil disobedience
	Archiving Web 3 activist art
	Avant-garde tactics & Web 3
	Considering Web 2 vs. Web 3 activism

First-order Codes	Second-order Codes
	Armchair activism
	Reflexivity regarding the medium of AR
	Increasing access to Web 3 tech
KEY QUOTES (across themes)	Camila-Most AR is gimmicky right now, need more time for deeper work
	Cheyenne-First gen you experience world differently, less linear narratives
	Dean-The tech was not our north star
	Dean-What's the shittiest phone someone has and go from there to pinnacle of VR headset
	Dina-What motivates your work--my rage, my passion for equality
	Dontrese-Immersion invites call to action
	GAR-AR lends itself to critique or commentary
	GAR-Interested in history and images-before 1873 couldn't see someone move
	GAR-New media has outward hopes but narcissistic end results
	George-Curating for AR unfamiliarity for audiences
	George-In 2011 an AR exhibit was thought of as elitist because it required smartphones
	JCF-AR permits new narratives through experience-a new form of reasoning by moving through space, rather than time
	Lauren-AR is public, VR is private
	Lauren-XR industry has had no organic, creative growth
	Margaret-Struggles with translating AR experiences into academic language
	Marisa-AR allows me to play with what is visible, embedded in black boxes like our phones or monuments
	Marisa-AR is didactic through overt and non-linguistic ways
	Marisa-History of the dead, whose history is unmarked and haunting
	Mark-AR and onboarding
	Mark-Early AR was hard for people to understand but we're going through a generational shift now
	Milan-Dark side of Big Tech
	Milan-Spatial web and AR is solution around digital garbage
	Nancy-AR leaves a subversive trace on space
	Nathan-New media first wave gets no credit, second wave gets famous
	Nicolas-AR literacy is growing, a-ha moments

First-order Codes	Second-order Codes
	Nicolas-Special FX are not what makes Star Wars great-AR not focus of story
	Nicolas-Augmenting spaces instead of faces
	Patrick-My identity margins of the margins
	Patrick-Not excited about AR but intrigued-this is our fate
	Sander-Minimalistic approach to this medium
	Sander-Patent alert explanation-scripts
	Sander-Between art and activism, it's future thinking
	Sarah-DR Identity and AR medium
	Sedef- I like the real world so I like AR, new things in your existing world
	Sedef-Ambivalence about digital activism
	Sophie-I'm a tech rookie
	Sophie-My work is subtle approach to gender
	Steven-Bay Area experiences in tech
	Steven-Playing by different set of rules with AR
	Steven-Technical side of AR is not the point, it's the experiences
	Tamiko-Magpies bright colors then journey to negative trough
	Tamiko-SanFran was tech only, no art or culture-much like film industry is split
	Will-We treated the ARt like it was real-not a trick or trompe l'oeil
	Yusuf-Protest flood of info by playing with AR
SENSORY, NON-LINEAR USER EXPERIENCE	Incorporating as many of the senses as possible
	AR compared to traditional fine art
	AR is like welding or collage
	I want to hold multiple narratives in contrast without privileging one over the other
	My ARt is not narrative driven or linear
	User journey includes interactive choices
TECHNICAL & INNOVATION DETAILS	Flexible geolocative placements
	AR channels
	Design process & WIPs
	Early works that preceded ARt works
AR AS A DIDACTIC MEDIUM	AR utilizes all of the senses to capture attention as users learn on-site
	Black Historical lessons for school curriculum
	Train Black creators

First-order Codes	Second-order Codes
	Helps students think critically about perception
	I don't teach--I show and invite
	I use satire to shed light on political turmoil
	Use AR for multicultural layers
	XR is a tool to keep children interested
ARCHIVING EPHEMERAL WORKS OF ARt	Working with developers to archive my work
	Important publications solidify ARt canon
	Changing archival practices
	LAYAR as a lost platform
	Early AR goal was to document on YouTube
CIRCULATING THE WORK: SCALE & ACCESSIBILITY	AR spectacles might help scale the tech more than phones
	Carving out fine art space for ARt, avoid gimmicky jobs
	Concerns about competition in XR space
	Concerns about plagiarism
	Consider version that is virtual if you can't go in person
	Scaling to other cities
	Hard to make people aware of ARt, get them to engage
	Unsure if XR curriculum at scale is possible
	Reception from XR creator community
	I want to democratize this tech
	Submit to Lenslist-AR filters for Snap and IG
SOCIAL-POLITICAL MOTIVATIONS	Increasing access to AR and Web 3 tech for underrepresented users and creators
	Anti-Bush and Iraq War
	Join the monument conversation
	Big tech monopolies of AR
	BLM and George Floyd murder
	Climate change
	Co-present AR experiences
	Corporate responsibility-sustainable products
	Empowering female creators and technologists
	Create public art beyond commodity capitalism
	Data-tech surveillance as injustice
	Disrupt conventional artworld
	Freedom of the press

First-order Codes	Second-order Codes
	Gentrification in San Francisco
	Grounding people and communities in local space
	Subverting Web 2 experiences
	Immigration abuses
	Institutional critique of art world gatekeeping
	Invite people to reflect on AR as a medium-not overly positive or negative
	Israel-Palestine border
	Tiananmen Square
	Korean Demilitarized Zone erasure
	Make XR space more racially inclusive
	My cultural identity
	My identity suffering from mental health disorder
	Police brutality
	Reveal erased indigenous histories
	Creating uncommodified Web 3 experiences
MEDIUM & MESSAGE	AR is my focus because my work reflects on the medium itself
	I'm more concerned with the activist messages of my work than the medium of AR
UNIQUENESS OF AR AS A MEDIUM	Activist art requires shock value and AR window of opportunity is closing
	AR and new media has outward hopes but narcissistic end result
	AR and onboarding or familiarity with how to use it
	AR encourages play, important for adults
	AR is a true public art form
	AR is appealing simply because of novelty effect
	AR is gimmicky at the moment
	AR is more accessible than VR, so it has more potential
	AR lends itself to critique or commentary
	AR permits me to play with questions of visibility
	Early ARt was like a meme before memes
	Experience is deeply personal, individual
	For now, we are passive users of AR and it is boring
	I like AR because I want to remain grounded in real world
	Cardiff's locative audio walks were basically AR too
	It's part live magic trick-illusion, part live video

First-order Codes	Second-order Codes
	Seems like artworld not interested in AR until NFTs
	We need low barrier to entry so people realize how easy it is to become AR creators
WORK ENGAGES HISTORY	Demonstrates that things are deliberately destroyed, not just simply lost to time
	Erased Black histories
	XR experiences for Chicago History Museum
	Black Panthers project
	Alaskan cultural history
	Shaw Memorial Monument
	History of gentrification in SF
	AR brings oral history layer to IRL historical sites
	Indigenous DR culture

Appendix B

Table 2. Participant Self-Reported Demographic Information

Participant Name	Age	Location	Racial Identity	Occupation(s)
Dontrese (he/him)	48	Virginia, United States	Black	Educator; Owner-Creative Marketing Strategy Firm
Yusuf (he/him)	43	Ohio, United States	African-American	Artist; Educator
Steven (he/him)	30	Oregon, United States	Black	Teaching Artist; Content Creator
Nathan (he/him)	42	Alaska, United States	White	Artist; Special Education Teacher
Juliah (she/her)	40	Ohio, United States	White	Artist; Educator; Graphic Designer
Nancy (she/her)	50	California, United States	White	Artist; Producer
Mark* (he/him)	-	New York, United States	White	Professor; Digital Creative; App Developer
Dean (he/him)	44	Virginia, United States	White	Co-owner-Market Research Firm
Marisa (she/her)	35	Pennsylvania, United States	Black-American	Artist; Assistant Professor of Media Arts
David (he/him)	36	Virginia, United States	White	Small business owner; Immersive Media Producer
Margaret (she/her)	-	Indiana, United States	White	Associate Professor; New Media Artist
Sarah (she/her)	28	New York, United States	Latina/Multiracial	UX Designer; Creative Technologist
Dina (she/her)	27	New York, United States	Middle Eastern	XR Artist
Lauren (she/her)	39	New Mexico, United States	Black	“Jane of All Trades”; Entrepreneur
Cheyenne (she/her)	29	California, United States	Filipino-American	Designer; Artist
Sophie (she/her)	24	Melbourne, Australia	White	Freelance Animator; Professional Athlete
Mathilde (she/her)	28	London, UK	White	Freelance Illustrator & Artist
Craig* (he/him)	62	Massachusetts, United States	White	Artist; Professor of New Media
Alan* (he/him)	48	Shanghai, China	White	Professor; Artist
Sedef (she/her)	31	Istanbul, Turkey	Middle Eastern	Freelance AR Content Creator

Camila (she/her)	32	California, United States	Latina/White	Multimedia Artist
Sander* (he/him)	48	Amsterdam, Netherlands	White	AR artist
Tamiko* (she/her)	64	Munich, Germany	Japanese, German-American	Media Artist
Will* (he/him)	66	New York, United States	White	Artist; Educator
Patrick (he/him)	37	New York, United States	Filipino-American	Multimedia Storyteller
Julian (he/him)	26	New York, United States	White	Creative Technologist; Software Engineer
Abdul (he/him)	26	California, United States	Black	Entrepreneur & CEO-AR Startup
George (he/him)	70	Massachusetts, United States	White	Arts Administrator; Art Curator
Nicolas (he/him)	51	Massachusetts, United States	White	Founder & CEO-AR Startup
Milan (he/him)	55	Massachusetts, United States	Serbian	Entrepreneur; Digital Marketer; Musician

* Denotes original member of Manifest.AR collective who first popularized the practice of augmented reality activism
** Racial Identity and Occupation(s) columns reproduce terminology self-reported by participants

ARTICLE THREE

Augmenting the Sociology of Art for the Metaverse: Materiality, Meaning & the Future of Aesthetic Experience

Alida Goffinski

ABSTRACT This ethnographic study adapts the analytical and theoretical tools of cultural sociology to meet the empirical demands of art that is increasingly designed for the evolving context of the metaverse. If the future of art is digital and immersive, it follows that the sociology of art should prepare for more meaningful engagement with these empirical transformations brought about by Web 3 technology. What's at stake is a more nuanced understanding of these phenomenologically novel Web 3 aesthetic experiences as salient—though underexplored—sites of meaning making and emerging cultural knowledge. This paper argues that a conceptual shift in defining what the "metaverse" is—and is not—will be critical to the future of a cultural sociology of art. During this early stage of the metaverse, I propose cultural sociologists of art must break with the sociology of art's previous reliance on spatial metaphors like "fields" or "art worlds," because the metaverse isn't *really* a field or a bounded art world, but a relationship. Ethnographic research conducted with 30 augmented reality artists demonstrates their shared concern that the initial stage of the metaverse has habituated users to passively perceive the metaverse as an exciting destination, and themselves as passengers along for the ride. New directions in the sociology of art must rely less on realist, spatial metaphors as we shift our analytical gaze instead to the study of the emerging relationship between materiality and meaning in a Web 3 context. This relationship warrants ongoing cultural sociological investigation as Web 3 technology continues to transform the lifeworlds of social actors who bring a diverse range of positionalities and levels of technological literacy to these rapidly shifting landscapes.

INTRODUCTION

Though nascent, tech industry experts have begun to utilize the term "metaverse" to describe an advanced version of the Web 3 Internet, which is anticipated to reach a mature state

in the next decade (the terms “Web 3” and “metaverse” are used interchangeably throughout). In this regard, the technological infrastructure for the metaverse is being built, while our encounters with Web 3-based experiences provide us with glimpses of this future state of a lifeworld transformed by the Web 3 Internet. At the time this research was conducted, we began to experience the most pronounced stage of commodification of XR experiences to date, marked by industry leader Facebook’s rebrand to Meta in October of 2021. At present, tech companies like Meta, Apple, Microsoft, and Google (referred to henceforth as “Big Tech”) are investing in Web 3 experiences at an unforeseen pace as they seek to build and commodify the metaverse according to their specifications. This ethnographic study adapts the analytical and theoretical tools of cultural sociology to meet the empirical demands of art that is increasingly designed for the evolving context of the metaverse. If the future of art is digital and immersive, it follows that the sociology of art should prepare for more meaningful engagement with these empirical transformations brought about by the metaverse. What’s at stake is a more nuanced understanding of these phenomenologically novel Web 3 aesthetic experiences as salient—though underexplored—sites of meaning making and emerging cultural knowledge.

Ethnographic interviews were conducted remotely with 30 artists and activists who utilize augmented reality technology to produce immersive art that is socially and politically salient to them, broadly defined. The phenomenon of augmented reality art activism (henceforth “ARt activism”) is an emerging Web 3-based artistic practice leveraged by new media artists and activists to advance a diverse range of sociopolitical projects. For the purposes of this paper, I’ve selected a case study by ARt activist Sander Veenhoff to support my argument that ARt activism generates new forms of aesthetic experience that illuminate the emerging conditions of meaning making that will structure art encounters in the metaverse. In order to augment the sociology of

art for a Web 3 context, sociologists of art will be tasked with understanding and explaining how these new technological conditions are transforming the relationship between materiality and meaning in the metaverse to come. We conclude with a discussion of several defining characteristics of our emerging relationship to the metaverse that I hope will inform future cultural sociological studies of art as the metaverse approaches mass adoption in the coming decade.

The current study leverages what I've termed a "critical sensory ethnographic" approach (Goffinski 2022b). This approach sensitizes the ethnographer to the full range of sensory and semiotic data in order to disclose and interpret their relationship. The approach is critical in the sense that the ethnographer assumes that structural inequalities at the "macro" level are detectable at the "micro" level, and is thereby attuned to the way that power is interpreted and experienced by participants phenomenologically.

Before we continue, several brief notes regarding key technological terms used to describe the empirical case are necessary. Throughout, the reader will notice that the technological term "user" often supplants the artistic term "recipient," illustrating the interactive nature of an ARt experience. With augmented reality (AR) technology, users require a mobile device to reveal digital assets that appear to hover over the physical world to produce an augmented gestalt of their surrounding environment. With virtual reality (VR) technology, the user requires a headset (and optional gloves) in order to become immersed in a fully digital environment that obscures any elements from the physical world. Mixed reality (MR) experiences combine elements from the physical world with virtual technologies to produce an interactive, hybrid experience. Mixed reality experiences can be thought of as AR experiences that include interactive digital assets that the user can manipulate, rather than assets that simply

hover above the physical environment. Collectively, the spectrum of digitally enhanced realities is referred to with the umbrella term "extended reality," or XR. The full range of XR technologies constitute what is known as the next stage of the Internet, or Web 3.0 (often abbreviated to "Web 3").

Before Big Tech companies collectively accelerated their investment in Web 3 technologies, however, pioneering technologists and new media artists laid the foundation for the metaverse. Though AR was introduced into the mainstream with the 2016 release of Niantic's AR game Pokémon Go, and has grown in popularity through Instagram and Snap face filters, the genealogy of AR technology has not always been gamified. For over 20 years, an experimental strand of ARt works has been designed by new media artists and activists with sociopolitical objectives, which motivated this ethnographic study. Since their inception, works of ARt have been conceptualized by ARtists as socially and politically salient because they stand to transform the way we see and sense our physical realities. In this way, ARtists leverage AR in order to give material form to their imagined social and political alternatives. As an emerging form of Web 3-based art and activism, therefore, the case of ARt activism is relevant to a range of sociological subfields, including cultural sociology and the sociology of art.

METHODS

Throughout 2021, I conducted ethnographic interviews with 30 artists, engineers, developers, and curators who contribute to the interdisciplinary practice of augmented reality activist art. Data were collected remotely due to social distancing restrictions required during the global COVID-19 pandemic. During our interviews, I utilized screen-sharing technology to experience and observe the creators as they designed AR projects first-hand, inviting them to guide me

through the design process of their ARt works. As I observed the participants, I posed semi-structured questions regarding their aesthetic and political goals, while allowing for the possibility of more inductive, probing questions. The screen-shared, ethnographic interviews were recorded and transcribed to facilitate subsequent analysis. Importantly, the ethnographic interview process enabled me not only to talk to AR activists *about* their art. By observing them throughout the process of creating their art through screen-sharing technology, I *experienced* their ARt works at different stages of the design process. By focusing on artists' design strategies, and inviting them to walk me through the way they envision these strategies to serve as social and political interventions, I sought to accumulate the tacit, embodied knowledge they draw upon to generate augmented aesthetic experiences.

As I've outlined more thoroughly in a methodological chapter devoted to the study of augmented reality art (Goffinski 2022b), the field of digital anthropology has generated sophisticated ethnographic approaches to the study of digitally mediated experiences. The work of anthropologist Sarah Pink (2013, 2015b, 2015a; Pink, Ardèvol, and Lanzeni 2020), in particular, cogently joins the sensory and semiotic dimensions of digitized aesthetic experiences to produce what they term a "sensory ethnographic" approach. Pink's sensory ethnography directs ethnographic attention to the way that extralinguistic, atmospheric conditions combine with the linguistic aspects of the ethnographic case during both the interview and observational components of ethnographic investigations. For our purposes, what's promising about Pink's approach is that they proceed from the assumption that the relationship between materiality and meaning can be fruitfully explored through careful ethnographic study. Throughout this process, the analyst seeks to (a) accumulate their participants' tacit, embodied knowledge and (b) interpret semiotic codes that render participants' experiences meaningful.

However, current digital anthropological approaches do not adequately attune the ethnographer to the multisensoriality of power and inequality. Though pioneering, the work of Pink and their colleagues do not directly engage with the political dimensions of multisensorial experience, or the way that power and inequality operate, and are reproduced, at the phenomenological level. In order to more fully explore the nuanced, multisensorial questions of power and inequality surfaced by augmented reality activists, Pink's sensory ethnography warrants a critical supplement. By joining Pink's multisensorial analytical posture with D. Soyini Madison's (2005) *Critical Ethnography: Method, Ethics and Performance,* we pursue an ethnographic approach that more comprehensively engages the relationship between phenomenology and politics. Taken together, I've termed this approach "critical sensory ethnography."

Notably, Madison's commitment to the political dimension of phenomenology suggests that ethnographic studies of participants' subjective, or "micro," experiences serve as a promising opportunity to explore embodied political knowledge. They distinguish their phenomenological methodology from the classical, Husserlian study of a transcendent consciousness and subjectivity that is "bracketed" from the surrounding, natural world (Husserl 1999). Madison opts instead for Heidegger's hermeneutic phenomenology, which accepts that our first-hand experiences are indelibly marked by society, culture, and history (Heidegger 1962, 1999). In Madison's formulation, the critical ethnographer presupposes macro-level systemic inequalities and political injustices to be detectable at the phenomenological level of our participants' everyday, subjective experiences.

Drawing on the work of Pink and Madison above, a critical sensory ethnographic approach to the study of augmented reality activist art can thus be summarized by several overarching questions:

1) What kind of practices are ARtists enacting or contributing to in our contemporary moment?
2) What sensory, somatic, semiotic, cultural, and political categories do ARtists rely on, reflect on, manipulate, subvert, play with, or generate through the augmented aesthetic experiences they create?
3) What are the conceptual, formal, and experiential conditions that ARtists mobilize to facilitate contemporary, augmented aesthetic experiences?
4) And finally, how do ARtists use the technology of AR to reimagine or protest their physical realities through ARt practices?

LITERATURE REVIEW: CULTURAL SOCIOLOGICAL APPROACHES TO AESTHETIC EXPERIENCE

In a recent introduction to a special issue of the *American Journal of Cultural Sociology*, Lisa McCormick (2022) succinctly argues that the sociology of art is in a holding pattern. The stagnation that's taken hold in the subfield, they argue, is the result of two ongoing intellectual trends. They diagnose the first as the critical stream that runs throughout the field's foundational works. Citing Pierre Bourdieu (1977, 1984, 1986, 1996) as this stream's exemplar, McCormick conceptualizes this intellectual trend according to its emphasis not on works of art, but on the power relations that structure artistic production, institutions, and networks. Though Bourdieu is the most prominent proponent of the critical current that runs throughout the canon of the

sociology of art, McCormick also attributes this impulse to the feminist sociology of art, the production of culture perspective, Howard Becker's art worlds approach, and Raymond Williams' cultural materialism.

The second source of stagnation in the sociology of art, McCormick suggests, is the result of the intellectual boundaries that distinguish the "sociology of culture" from "cultural sociology" in the discipline of sociology more broadly (see Reed 2009). McCormick (2022) aptly summarizes the tension that has marked these two uses of culture:

> Sociologists who study cultural objects, such as art and music, concentrate on the typical sociological concerns of taste, markets, and careers, leaving aside any questions to do with meaning. And sociologists who adopt a cultural approach continue to neglect artistic domains and gravitate towards politics, the mass media, and social crises to develop their ideas about social facts and processes. Those who diverge from these well-worn paths risk getting stranded on the median strip. (P. 198)

In sum, the sociology of art could be defined as a sociology of artistic labor and commodities, often propelled by a Mannheimian urge to unmask the networks of social actors who believe that art *means* something—economically, spiritually, emotionally, or socially. If we dispel with the critical stream's tendency to dismiss the social fact that art is indeed imbued with meaning by social actors, it follows that the cultural sociologist has much to contribute to a meaningful sociology of art. Rather than "exposing" and demystifying the contexts that enable the production of art, or avoiding the cultural interpretation of art, McCormick challenges cultural sociologists to pursue new directions in the sociology of art. Against this intellectual background, she announces a new stage in the relationship between cultural sociology and the

arts, calling for a "meaningful sociology of the arts that moves beyond production perspectives and their limiting focus on the social organization of artistic endeavors" (McCormick 2022:197).

With McCormick, I, too, recognize the stagnation in the sociology of art, and am compelled by their claim that the tools to dismantle extant stalemates can be found within cultural sociology. Thus, I endorse her call for a meaning-centered sociology of art—a *cultural* sociology of art. However, I suspect that a substantive move beyond the current stalemate affecting the sociology of art would require a paradigm shift that is more pronounced than even McCormick suggests. If we truly endeavor to chart new intellectual directions and discover new things about the relationship between art, the human experience, and surrounding social lifeworlds, I suggest cultural sociologists consider two related paths forward. First, I propose that cultural sociologists of art keep pace with the empirical and technological developments that are transforming contemporary artistic practices as they become increasingly digitized and immersive. The rapid acceleration of Web 3 technology and the approaching metaverse pose significant changes to the empirical conditions of artistic practice and aesthetic experiences that sociologists of art have previously explored. While McCormick acknowledges the contributions sociologists of music have made to the digitization of music, the digitization of art has received little empirical attention in the sociology of art more broadly. In order to understand and explain these empirical shifts in contemporary artistic practice, cultural sociologists will be tasked with interpreting the emerging practices and lifeworlds of contemporary experimental and avant-garde artists leveraging Web 3 technologies.

Secondly, extending McCormick's diagnosis of the stalemate that marks the sociology of art, I argue that limited theoretical engagement with the foundational concept of aesthetic experience has enabled both the critical stream and the "sociology of culture" approaches to

routinely produce empirical studies of *art-adjacent* subject matter, rather than meaningful studies of art and aesthetic experience. Throughout the history of the subfield, aesthetic experience is arguably the concept that sociologists of art are most likely to defer to disciplines like art history, philosophy, or anthropology. Circumventing the concept of aesthetic experience is the analytical move that enables sociologists to overlook questions of meaning and significance. In doing so, the analyst is also able to avoid questions of inherent value or artistic intention, thereby reducing the art object to a mere conduit of power or labor. By neglecting to empirically and theoretically engage with the aesthetic experiences that art affords for artists and recipients, however, sociologists of art eschew questions that are most germane to a meaning-centered sociology of art in the process.

By foregrounding the aesthetic experiences created by ARtists from an ethnographic perspective, we are not concerned with demystifying the artistic production of augmented reality art works, or debunking theories of artistic genius. Rather, my aim is to extend the subfield's empirical and theoretical purview beyond these traditional research concerns to understand the cultural role that this emerging art form plays in social life, and how social actors derive meaning from the resultant aesthetic experiences. In doing so, I'm especially invested in exploring new directions for the sociology of art while addressing the subfield's empirical gap related to digital art that is increasingly designed for a Web 3 world.

We turn now to a survey of cultural sociological scholarship that seeks to define the concept of aesthetic experience, and foregrounds the relationship between materiality and meaning from a cultural sociological perspective. Taken together, these two approaches serve as poles on a conceptual continuum that ranges from the iconic to the indeterminate approaches to studying meaning and materiality. By juxtaposing the two approaches below, I aim to

demonstrate that both the iconic and indeterminate concepts of aesthetic experience are salient to a cultural sociology of art, but must be adapted for the study of augmented aesthetic experiences in the context of the metaverse.

Iconic Aesthetic Experiences

In a 2012 collection of essays, *Iconic Power: Materiality and Meaning in Social Life*, Jeffrey Alexander (Alexander, Bartmanski, and Giesen 2012) draws on the work of philosophers Hans Ulrich Gumbrecht, Gottfried Boehm, and sensory studies scholar David Howes (2005), to argue for an "iconic turn" in cultural sociology—a rapprochement of the symbolic and material approaches to the study of culture and perception. Put simply, he argues that a richer hermeneutic is available to us by extending cultural sociological accounts of *meaningful* depth with analytical attention toward the *material* surfaces that jointly constitute social life's terrain. Along these lines, Alexander takes "iconic consciousness" as his object of analysis. He explains, "Actors have iconic consciousness when they experience material objects, not only understanding them cognitively or evaluating them morally but also feeling their sensual, aesthetic force" (Alexander, Bartmanski, and Giesen 2012:1). Alexander provides a broad definition of the cultural "icon," including visual emblems like sculptures and paintings, popular songs, perfumes, company logos, and celebrities. He suggests that such icons possess aesthetic force, in the sense that they "participate" in social life: "It is because they galvanize narratives that icons are not only aesthetic representations but also become full citizens of public discourse. In the iconosphere of society, the meanings of social life take on sensual form, whether by sight, hearing, touch, taste, or smell" (Alexander et al. 2012:3).

Alexander's work on iconicity seeks to amend cultural sociology's foundational emphases on semiotics and morality by encompassing the non-representational (Alexander and Smith 2003; Reed 2009). He further explains:

> [A]fter the cultural turn that has transformed the human sciences, sociologists have learned that a society's normative standards are not established primarily by formal rules or even by such general and diffuse things as social values. Rather, they are established through collective discourses built from codes, narratives and metaphors. We need to extend this new understanding one step further still. Collective discourses also assume an iconic form. Their meanings are learned through subjective immersion and projected through materiality. (Alexander 2008:9)

Alexander's argument that we look beyond formal rules or social values to gain additional analytical purchase on social life is promising, as is his gesture toward "subjective immersion" and "materiality."

Accordingly, I interpret Alexander's call as an invitation to center aesthetic experience at the heart of cultural sociological inquiries of art. The iconic turn, as he describes it, raises fundamental questions about what it *means* to have an aesthetic experience at a given time, in a given place, that is afforded by a given cultural icon. Framed in this way, extending cultural sociology with a careful account of the way social actors make sense of aesthetic experiences is a necessary amendment to early cultural sociology. Yet, Alexander remains unpersuaded by historicist accounts of aesthetics, and is committed to the notion that aesthetic experience remains structured by the beautiful/sublime binary, despite the work of scholars who explore how this binary has been challenged and extended by abstract, surreal, pop, and conceptual art (Danto 2003). In this way, Alexander is more invested in the normative, the consistent, and

recurrent meanings (what he describes above as morally-laden codes, narratives, and metaphors) that comprise iconic consciousness to advance cultural narratives, rather than centralizing what happens when they are transgressed, altered, or for our purposes, *augmented*.

While I am persuaded by Alexander's call to extend cultural sociology with increased attention toward the sensuous, immersive, and material dimensions of social life, I wish to extend the traditional definition of aesthetic experience inherited by his programme. Put simply, I argue that we inherit unnecessary theoretical barriers if we seek to explore, as Alexander does, the implications of contemporary sensory experience exclusively within the constraints of Kantian aesthetics. Alexander's Kantian interpretation of aesthetic experience embraces a metaphysical dualism between material surfaces and cultural depth,[33] and implies that the relationship between materiality and meaning is not symmetrical, but is skewed in favor of extant cultural codes. Material dimensions of aesthetic experiences merely serve to amplify these codes through increased sensory stimulation (see Figure 1).

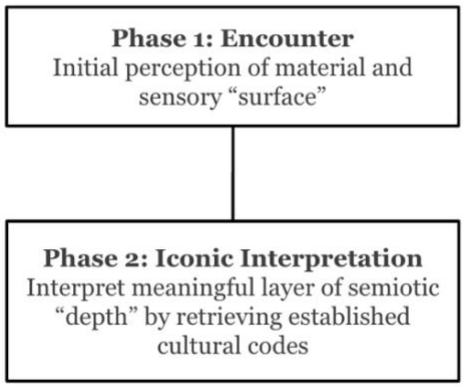


Figure 1. Alexander et al.'s (2012) Phases of Iconic Aesthetic Experience

[33] See de la Fuente (2019) for a related discussion regarding the implications of metaphysical dualism in the field of cultural sociology more broadly.

Though I am similarly invested in Alexander's questions regarding the relationship between materiality and meaning, the empirical case of augmented reality art requires a more nuanced account of aesthetic experience that reaches beyond the linguistic, the represented, or the moral (precisely where Alexander's account stops). In my view, the notion of an aesthetic experience must not be held as an analytical constant as we pursue an understanding of the nexus of the symbolic and the material. The very notion of aesthetic experience in our contemporary moment serves as an underexplored sociological point of departure—a dependent, rather than independent variable—as the cultural sociologist probes the joint processes of what we might delineate as "*meaning*-making" (corresponding to the cognitive, perceptual, and symbolic) and "*sense*-making" (corresponding to the tactile, the haptic, and material). In this regard, Alexander's framework forecloses the possibility that the engine of aesthetic experience has autonomous generative potential in its own right. For this reason, Alexander's iconic turn mobilizes an account of aesthetic experience defined as a closed loop—an immersive process of semiotic retrieval, rather than a performative, open-ended experience. Thus, Alexander's iconic account of aesthetic experience is appropriate to explain aesthetic experiences afforded by art objects that meet the recipient's gaze as familiar "icons." These aesthetic encounters are common, and important to explain from a cultural sociological perspective as Alexander does. However, we might also ask how cultural sociologists ought to explain aesthetic experiences that aren't familiar, and fail to activate a recipient's iconic consciousness. Put differently, what do the material, sensory dimensions of an art object *do* besides amplify existing semiotic meanings or reinforce cultural narratives via what Alexander describes as aesthetic or sensuous force? And why does this matter to cultural sociologists of art as the metaverse changes the material conditions of contemporary art practices?

Indeterminate Aesthetic Experiences

As the metaverse is developed, it will become increasingly common for users to encounter immersive art designed with Web 3 technologies that challenge and extend the iconic forms of aesthetic experience conceptualized by Alexander. Phenomenologically, these experiences will not be immediately familiar to the average user as they navigate the emerging relationship between materiality and meaning in a Web 3 world. Accordingly, this study seeks to demonstrate that the empirical case of augmented reality art activism calls for a post-Kantian aesthetics that permits more nuanced questions regarding the role of form and medium beyond traditional questions of semiotic codes, the beautiful/sublime binary, or disinterested contemplation.

As sociologists Joseph Klett and Alison Gerber (2014) have also argued, Alexander's notion of iconic consciousness is constituted by an account of aesthetic experience that presumes judgments of icons are informed by preexisting cultural codes. The semiotic tracks of collective discourse are, in effect, already laid while the aesthetic experience serves as an engine that simply navigates them. In this way, the linguistic and representational aspects of cultural icons are privileged, leaving little room for more performative, emergent aesthetic experiences. By joining Alexander's cultural sociological approach to the extralinguistic elements of sensory experience, this study seeks to contribute a more robust account of aesthetic experience that is suited to the increasingly indeterminate sensory environments generated by Web 3-based new media (McLuhan 1967).

Building on Alexander's iconic conceptualization of aesthetic experience, Klett and Gerber identify a distinction between an aesthetic experience that serves as a mechanism to reinforce or retrieve cultural codes that are evoked by familiar icons (as outlined in Alexander's

framework), and an aesthetic experience that operates in a more indeterminate manner. Their findings suggest that something as indeterminate as Noise Music—a non-genre, liminal genre, and counter-genre all at once—can be analyzed sociologically through the creative theoretical consideration of the structured and contingent practices that constitute it. Rather than explore the rules and codes that explain what Noise Music *represents*, they ask what Noise Music *does*—their emphasis falls on the experience of Noise Music as an embodied, performative context of expectation (see also Meyer 1967). The indeterminacy of Noise is a central dimension of the aesthetic experience of liminality that keeps fans engaged: "Noise ensures all participants are always listening, as the 'ears remain open' constantly engaged on the most immediate, perceptual level" (Klett and Gerber 2014:278). The indeterminacy of Noise Music is central to the aesthetic experience of recipients who wish to be immersed in a liminal performance that keeps them alert, surprised, and engaged (see Figure 2). Yet, such liminality is precisely what they argue an iconic account of aesthetic experience would neglect to take into account. The full range of iconic and indeterminate interpretive possibilities, therefore, must be incorporated into a meaningful account of aesthetic experience.

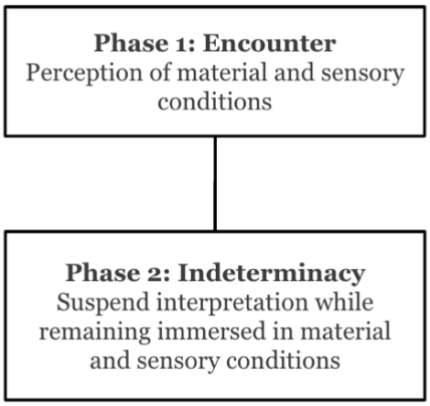


Figure 2. Klett and Gerbers' (2014) Phases of Indeterminate Aesthetic Experience

During indeterminate aesthetic experiences, the emergent relationship between materiality and meaning cannot simply be explained by situating the art encounter amidst underlying cultural narratives or codes. In such cases, the analyst has the opportunity to recreate processes of meaning making by relying more centrally on the material, embodied, or interactive dimensions of the art encounter. Proceeding inductively from a multisensory account of the aesthetic experience, the analyst might recreate the range of interpretive possibilities without limiting the horizon of meaning to familiar or preexisting narratives or codes. Importantly, though, indeterminate aesthetic experiences need not be reduced to idiosyncratic, subjective moments that are devoid of meaning. Instead, indeterminate aesthetic experiences provide the sociologist with an opportunity to consider how established cultural narratives and codes are subverted, challenged, or transformed, rather than reinforced by such encounters.

With their fresh take on the phenomenon of Noise Music, Klett and Gerber supplement Alexander's notion of iconicity with some of the contingency that characterizes Antoine Hennion's pragmatics (1989, 2001, 2002, 2005, 2007). For the purposes of this study, Hennion's account of aesthetic experience is especially relevant. Hennion, with Line Grenier, takes seriously the role of aesthetic experience as a *mediating* force in the process of interpretation, rather than simply an act of semiotic retrieval:

> The dilemma now faced by sociologists is how to incorporate the material character of works produced and devices used, without reverting to autonomous aesthetic comments […] The work of resocialization of art also needs to come closer to art lovers' tastes and practices, without contenting oneself with an external acknowledgment of the value given to art by members of an art world as if art was a belief, and not also an experience of

> pleasure, expression and emotion collectively lived by subjects and bodies through specific objects and procedures. (Hennion and Grenier 2000:341)

Hennion's (2005) essay, "Pragmatics of Taste," further outlines a sociology of the arts that takes its inspiration from visual culture scholars like Michael Baxandall, and the "new" art history that periodizes the gazes, tastes, and ways of seeing that render any form of cultural artefact meaningful to the viewers (Tanner 2010).[34]

Hennion suggests that, contra Bourdieu (1984, 1996) and other critical theorists, ways of seeing, judging, and experiencing the arts generally, are not explicable with a passive account of the viewer (they take issue, in particular, with the passive notion of the "cultural dope" implied by such positions). Drawing on the pragmatic turn in literary criticism initiated by the Constance School, including Hans Jauss (1982, 1989) and Wolfgang Iser (1978), Hennion suggests that the co-formation of subjective tastes and objective works necessitate the reorientation of sociological analyses of art. Art is not simply constructed by powerful cultural gatekeepers from "on high." Hennion argues instead that what makes the arts sociological is perhaps best comprehended "from below," as the gazes, frames, and collective schemas that are required to perceive and experience them are produced, negotiated, and reinforced. In this way, Hennion lays the foundation for a "new" pragmatic, performative, and materialist sociology of the arts. Though they primarily consider musical forms of cultural expression, their suggestions are relevant to the arts generally:

[34] Additional works often related to the consolidation of the field include Alpers (1977, 1983); Haskell (1980); Haskell and Penny (1981); Hauser (1951); Meiss (1951); and Panofsky (1957).

> Musics are made, they make their world and their listeners, and are measured only through what they make. Just as music is a history writing its own history, so it is also a reality making its own reality. The points of method are the same: it is necessary to go through each mediation, look at each device, see each situation act, and follow the way in which pieces and languages, but also bodies, collectives, objects, writings, ways of judging and ways of listening circulate, producing sets of works or styles of music, qualified and commented on, and publics ready to receive them. This general circularity, here again, relates not to the sterile arbitrariness of a play on codes, but to the co-formation of musical objects that convey increasingly elaborate differences, to listeners who are increasingly able and desirous to perceive them and, more generally, to collective frames that enable this activity to be deployed in all its diversity. (Hennion 2005:133)

Subsequent sociological studies of art, along these lines, have been oriented to the interaction between subjects and objects as processes of seeing, sensing, and interpreting unfold in complex, meaningful ways (Acord and DeNora 2008; DeNora 2000; de la Fuente 2000, 2007b, 2007a, 2019; Greenland 2016, 2018; Strandvad 2012; Willis 2005). This work contributes nuanced accounts of aesthetic experiences that are made possible and emerge within the co-construction of audiences and cultural artefacts as their meanings are negotiated *in situ*—"a reality making its own reality"—as Hennion explains above. The sociologist of art, therefore, remains focused on the aesthetic knowledge that emerges from such experiences, and can situate these forms of knowledge amongst broader societal and historical shifts.

The foregoing gestures toward a cultural, meaning-centered sociology of art will require ongoing engagement to substantively advance the subfield. Though this extant scholarship shares

a commitment to exploring the relationship between materiality and meaning broadly defined, these attempts to construct a meaningful sociology of art could hardly be considered a cohesive wave, or a unified intellectual project. Accordingly, my interpretation of the theoretical stalemate in the sociology of art is that an intellectual impulse to further theorize *indeterminate* aesthetic experiences exists, but has yet to be clearly conceptualized by the subfield more generally. This is evident in the repeated calls for a "new" sociology of art that have punctuated the past two decades of scholarship while drawing on a range of philosophical traditions that embrace the sensory and performative dimensions of human experience. It can be difficult for the reader to parse through scholarship that mobilizes the related concepts of the aesthetic, the sensory, the embodied, the material, the pragmatic, and the performative in the pursuit of a new sociology of art. This brings us to our contemporary moment, and how the current research seeks to further consolidate and build on this earlier work.

Augmented Aesthetic Experiences

In the rapidly evolving context of the metaverse, closer engagement with the way that social actors derive meaning from technologically mediated aesthetic experiences is warranted. Supposing industry experts are indeed correct that the metaverse will transform our lives in unforeseen ways (Ffiske 2022; Papagiannis 2017), it's possible that our extant ways of seeing and sensing not just art—but reality itself—will be transformed by Web 3 technology. A growing body of new media scholarship exploring the aesthetics of digital art attends to the affordances that distinguish today's digitally mediated aesthetic experiences from aesthetic experiences of traditional art works (Brinck 2018; Kwastek 2013; Paul 2016; Qu 2017; Shanbaum 2020; Stern 2013). Importantly, scholars of digital aesthetics argue that the aesthetics

of interactive art lies somewhere between the aesthetics of production and the aesthetics of reception, stretching extant categories of "artist," "recipient," and "production" by challenging what it means to create and view art (Jauss 1982; Kwastek 2013; Paul 2015, 2016). New media artists, therefore, do not simply produce discrete artefacts such as paintings, musical scores, films, or sculptures to later be interpreted by recipients and critics. Rather, new media artists like the ARtists in this ethnographic study design *experiential conditions* where meaning and materiality are negotiated by recipients who co-create the art with each interaction. These conditions of aesthetic experience are the primary focus of the analysis of interactive art because they structure the art's interpretive and experiential potential.

For our purposes, however, theoretical approaches to new media art in general often fail to account for the novel phenomenological conditions afforded by augmented reality technology in particular. Canonical works in the field of digital aesthetics such as Katja Kwastek's (2013) *Aesthetics of Interaction in Digital Art* or Christiane Paul's (2015) *Digital Art* provide key foundational concepts to analyze digitally mediated aesthetic experiences, but relate primarily to forms of digital art that preceded today's ascent of augmented reality technology. In order to update this literature, Qu (2017) adapts several canonical theories of digital aesthetic experiences to create a framework for the study of augmented aesthetic experiences (see Figure 3).

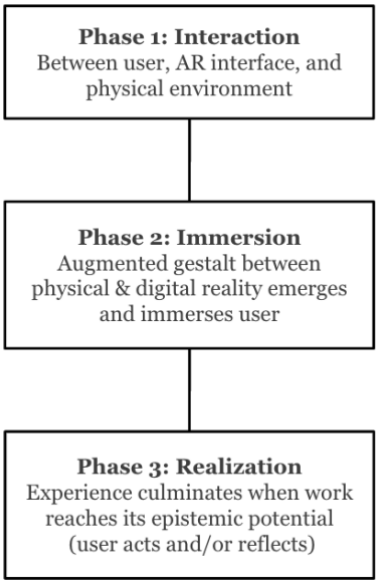


Figure 3. Qu's (2017) Phases of Augmented Reality Aesthetic Experience

The first phase, Interaction, consists of the initial encounter with the ARt. This phase parallels the initial Encounter phase of the iconic and indeterminate accounts of aesthetic experience as the user initially perceives the art's material and sensory qualities. Qu's formulation, however, emphasizes that the user not only perceives the ARt, but must situate it vis-à-vis the physical environment on which it is projected. The second phase, Immersion, occurs when the user begins to perceive their hybrid physical reality and augmented reality as a unified gestalt. At this point in the process, they have become immersed, but have not yet interpreted the experience (and may not necessarily progress to Phase 3). If the user remains in the Immersion phase, we might conceptualize this as a form of indeterminate aesthetic experience that does not culminate in the cognitive retrieval of semiotic codes. And lastly, if the user reaches the final Realization phase, the experience is "complete" when the user either physically or cognitively responds to the experience within conditions designed by the ARtist. This final phase might include one or both of these elements, which media theorist Katja Kwastek (2013) terms a digital

art work's "epistemic potential." A physical response may include the completion of a purposeful interactive task (like walking through an AR portal), while a cognitive response may include interpreting the experience's cultural subtext. If the user's cognitive response includes the interpretation of semiotic codes, the aesthetic experience can be conceptualized as iconic.

Qu's account of augmented aesthetic experience consists of three distinct phases that address both the iconic and indeterminate potential phases of such experiences, and leaves open the possibility that the experience may not always culminate in iconic interpretation in the final phase. Qu's concept of augmented aesthetic experience, therefore, will serve as our point of departure for the present study. In what follows, we turn to a case study of augmented reality activist art that illustrates how the emerging form of aesthetic experience afforded by Web 3 technology provides phenomenologically novel interpretive conditions for meaning making in the context of the metaverse. Throughout, I'll amend Qu's approach to further account for divergent varieties of aesthetic experiences afforded by contemporary activist ARt works, and related meaning-making processes.

To conclude this survey of the literature, we return to McCormick's call for a meaningful sociology of art. What makes McCormick's challenge so refreshing is that it revives promising theoretical debates regarding the foundational concept of aesthetic experience and its relationship to meaning making. I have suggested that cultural sociologists of art further engage with what McCormick identifies as short-lived attempts to construct a meaningful sociology of art. As McCormick suggests, engagement with the work of scholars like Jeffrey Alexander (2008; Alexander, Bartmanski, and Giesen 2012) and Antoine Hennion (2001, 2002, 2005; Hennion and Grenier 2000), and Joseph Klett and Alison Gerber (Klett and Gerber 2014) exploring materiality and meaning has yet to be sustained long enough to move the sociology of art beyond its

intellectual inertia. Further engagement with such debates has the potential to generate promising, new directions for a cultural sociology of art. For instance, cultural sociologists have an opportunity to investigate art *ecosystems* rather than bounded art *worlds*, emerging artistic *practices* rather than established *institutions*, modes of *embodied perception* rather than reception, and multisensory aesthetic *experiences* rather than static art *objects*. All of which must take place, of course, from a value-neutral, interpretive analytical vantage point if we are to change course from the subfield's dismissive critical legacy.

EMPIRICAL CASE: SANDER VEENHOFF'S "PATENT ALERT"

The phenomenon of ARt activism can be traced to the early 2000s when New York-based media studies scholar and artist Mark Skwarek assembled the first AR activist collective, Manifest.AR.[35] Along with fellow artist/activists Sander Veenhof, Tamiko Thiel, Will Pappenheimer, Christopher Manzione, Geoffrey Alan Rhodes, John Cleater, and John Craig Freeman, the collective launched their first AR activist intervention in October 2010—We AR in MoMa.[36] The collective invited spectators to download an app on their smartphones and survey their surroundings as augmented reality art was distributed throughout the museum. The exhibit opening was then unveiled at the New York Museum of Modern Art without the institution's awareness, or consent. Rogue digital designs, sculptures, and symbols subverted the museum's extant installations by altering them with AR technology as artists and viewers enjoyed the first ARt activist experience. The experience was intended to subvert the MoMa's powerful

[35] Learn more about Manifest.AR here: https://manifestarblog.wordpress.com/
[36] See the project website here http://www.sndrv.nl/moma/, as well as accompanying video here: https://www.youtube.com/watch?v=b9T2LVM7ynM&feature=youtu.be

gatekeeping influence by demonstrating that art developed with AR isn't subject to the art world's conventional institutional—or ontological—boundaries.

In 2014, Skwarek and his colleagues published a compilation of notable augmented reality art experiences, which served as the first monograph devoted to the emerging genre of augmented reality art (Geroimenko 2014). Skwarek's opening chapter, "Augmented Reality Activism," was the first academic publication on the topic of ARt activism. Drawing on a mélange of twentieth-century avant-garde art movements, the first ARt activists were motivated by two key questions: Can AR create real social change and can it unite society by turning virtual experiences into physical ones? (Geroimenko 2014:ix). To date, many of the original members of Manifest.AR continue to produce AR activist art. This original network has also expanded to a geographically dispersed group of artists, developers, and activists who are not part of the Manifest.AR collective. Today's ARt activists form a prolific, growing network of new media artists motivated by diverse social and political goals.

An original member of the Manifest.AR collective, Dutch artist Sander Veenhoff's work turns the medium of AR back on itself to invite users to contemplate the phenomenon of augmented reality experience, and develop a critical embodied relationship to this rapidly evolving form of Web 3 technology. With a background in computer science, Sander designs experimental ARt experiences that foster a sense of unguided play and emergence. In this way, he creates experiential space for users to become more self-aware of Web 3 technology by becoming corporeally acclimated to the phenomenological details that constitute an augmented aesthetic experience. Below, we consider Sander's ARt work entitled "Patent Alert," that demonstrates these artistic and social objectives.[37] Sander explains that the ARt work invites

[37] Learn more about "Patent Alert" at this link: https://beyourownrobot.com/byor/patents/

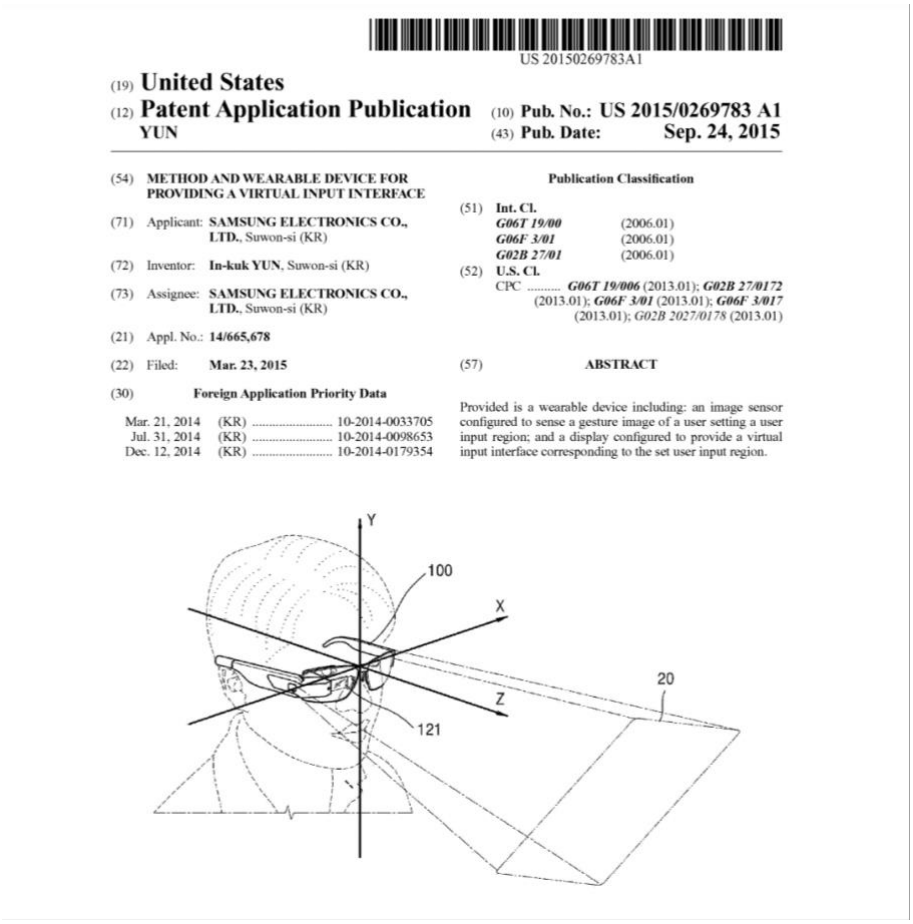
users to contemplate our imminent "AR future," that is already being meticulously patented, designed, and controlled by powerful Big Tech companies before we have had the opportunity to form our own relationships to a Web 3-based reality.

Throughout this case study, it's important to bear in mind Sander's positionality as a founding member of the activist collective Manifest.AR. Since the early 2000s, Sander and his co-founders have conceptualized the medium of AR as an opportunity to give material form to imagined social and political possibilities via digital interfaces. These augmented realities—AR enhanced gestalts that invite the user to see their physical world through a more sociopolitically just lens—were what drew Sander and his fellow ARtists to the medium.[38] As I developed empathy for Sander and his co-founders throughout this ethnographic project, it became clear to me that they shared a creative commitment to retaining this potentiality of AR as a medium. It also became clear that they've spent the past two decades observing how the commodification of AR has resulted in an influx of gamified experiences that rarely illustrate the medium's sociopolitical potential. As such, this case study can be thought of as an expression of Sander's concern about the future of the metaverse marked by superficial and corporately controlled augmented reality experiences. This work provides a glimpse into his anti-vision for the Web 3 world, as well as an invitation to pause and reflect about our relationship to it.

"Patent Alert" was designed in 2017 as an app for the AR headset Microsoft Hololens after Sander spent time browsing the US Patent Database section related to XR patents.[39] While exploring the database, he was disturbed by the volume of patents that establish ownership over

[38] See Goffinski (2022a), "Building a Critical Metaverse: Augmented Reality Activist Art & the Emergence of Web 3 Activism," for an extended account of these repertoires.
[39] The United States Patent Database can be searched via this link: https://www.uspto.gov/patents/search

precise behaviors and gestures that users perform while wearing XR headsets (see Figures 4 and 5).



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(54) **METHOD AND WEARABLE DEVICE FOR PROVIDING A VIRTUAL INPUT INTERFACE**

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(57) **ABSTRACT**

Provided is a wearable device including: an image sensor configured to sense a gesture image of a user setting a user input region; and a display configured to provide a virtual input interface corresponding to the set user input region.

Figure 4. Example of a US Patent for a wearable device manufactured by Samsung

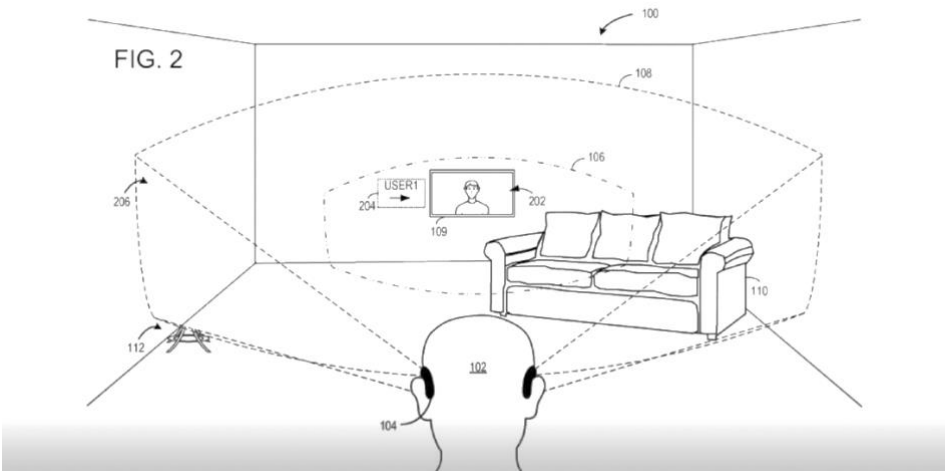

Figure 5. Example of an AR headset patent illustration that motivated Sander's "Patent Alert"

During Sander's "Patent Alert" AR experience, the user is invited to explore their physical surroundings freely. However, an automated voice periodically interrupts the user with audible warnings that their physical gestures are prohibited because they are "incompatible" with the Microsoft Hololens patents. For instance, the user might be interrupted by a voice that states, "Warning, you are not wearing Google Glass [a competitor AR headset], so please avoid making gestures reserved for that device as documented in patent #49321496 by Google," or "Sorry, a person in the room might be waving but I cannot tell you the meaning of the gesture because of patent #US8933876B2." The automated voice then encourages the user to align their physical movements with the approved choreographic "scripts" that can be enacted within the legal parameters of the available Hololens patents. After 7 violations, the Hololens will repeatedly buzz until the affordance motivates the user to remove the headset altogether (see Figures 6-8).

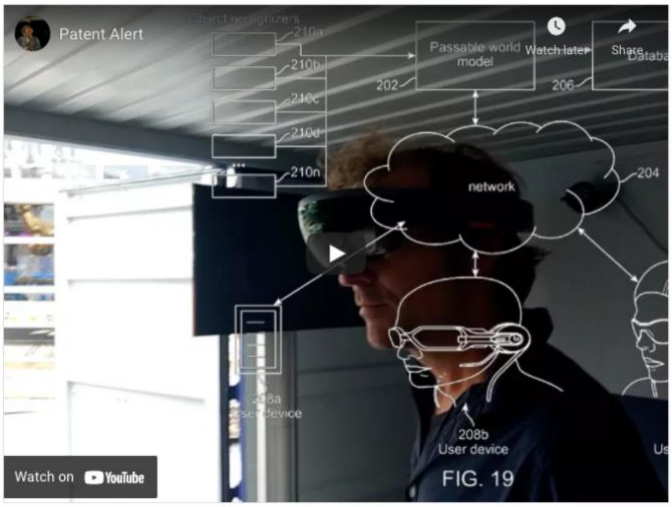

Figure 6. Artist Sander Veenhoff provides a demonstration of his augmented reality experience, "Patent Alert"

Figure 7. Artist Sander Veenhof demonstrates his "Patent Alert" AR experience

Figure 8. Artist Sander Veenhoff's augmented reality experience "Patent Alert," audibly and visually warns users if their bodily gestures are not compliant with their AR headset's approved patents

Sander further explains that his whimsical, unstructured ARt is motivated by a concern that our increasingly immersive future is evolving at a rate that outpaces the average person's ability to accumulate the embodied knowledge needed to navigate it reflexively and critically. His playful ARt is intended to provide opportunities for users to accumulate embodied knowledge that will enable them to become critical consumers of immersive experience as Big Tech monopolizes the technological and experiential parameters that govern and define evolving Web 3 technologies.

Sander includes simple white outlines derived from patent illustrations as the work's only visible assets. These simple sketches guide the user's attention not toward familiar iconic images, but instead to the embodied experience of navigating a hybrid real world/digital augmented reality on their terms. The robotic voice that interrupts their gestures is the only audible dimension of the experience. A user's iconic consciousness, therefore, will not get them very far in such an experience, though this ARt is no less *meaningful* as a result. Sander's ARt reminds the user that their ability to navigate the coming metaverse could be profoundly, though

subtly, policed by large corporations who are incentivized to commodify all of their behaviors in a Web 3 world. In this way, Sander seeks to create an aesthetic experience that leaves interpretive space for the user to derive meaning on their terms, punctuated by intermittent reminders that their behavior is being controlled.

After Sander walked me through "Patent Alert" and several additional examples of his ARt, we further discussed the implications of his work:

> ALIDA: Something I appreciate about the work you make is that there's a light sort of playfulness about what you do. At the same time, I'm interpreting some of these [ARt works] as having a very serious kind of undertone, because I sense you having serious concerns about… sort of… the state of being in our present, our future, and think you bring this playful veneer over some topics that are important—our relationship to this technology, how it's being infiltrated by power that we have no control over. Can you tell me a little bit more about what's at stake, and some of those more serious undertones I'm picking up on this work?
>
> SANDER: (Nodding and smiling) Yes, it is exactly right, as you say, that those two things—yes, I'm addressing serious topics, but the "flavor" is not too serious … And that's because I don't want to block all of this [technology] out of my world. No, I don't want to say, "Oh stay away from this! This is so horrible! Totally disastrous!" No, I'm saying [the metaverse] is going to be great, but there are some things to fix, and we can all fix them if we keep thinking and make up our own minds … and I'm having fun as I make this.

ALIDA: (Smiling) Yes, that comes through.

SANDER: And I make it accessible. If I just have a very harsh message then I'm not getting the right audience. So this is my way of finding the audience, and I think that's important. I really think—especially with "Patent Alert"—it really has a message to tell people that something is coming, you have no clue. Like we all said about the mobile phone, "Oh no, that's not the device I'm going to use" and turned our backs. But things can change, not radically but gradually. And that is going to happen with our AR future as well … So it's going to be a slow process and it helps to already know where it's going to go.[40]

The above exchange with Sander is representative of the approach that many participants in the sample espoused toward a Web 3 future. As the transition to Web 3 progresses, ARtists expressed a sense of responsibility to leverage their early fluency and familiarity with AR to build experiences that will prepare others for this immersive future. The participants frequently observed that the average user lacks the "literacy" required to navigate the kind of reality that will characterize the metaverse. As Big Tech companies primarily control the technological architecture for the coming metaverse, ARtists seek out opportunities to provide the average user with the experiential, embodied "scaffolding," so to speak, that will be required to move through this highly immersive version of everyday life. Their ARt interventions, therefore, can be thought of as countervailing opportunities for users to explore the phenomenologically novel relationship between materiality and meaning in the context of the metaverse on their own terms.

[40] Personal communication, July 13, 2021

In this way, this early wave of augmented reality art activism generates new ways of seeing and sensing a Web 3 world from a critically informed vantage point.

DISCUSSION: MATERIALITY, MEANING & THE METAVERSE

Before embarking on this ethnographic project, I had internalized the popular notion that the metaverse is a "place" or "location" where we will live out augmented or virtual versions of our lives as the metaverse is gradually built around us. Indeed, Web 3 technologies are being designed to give us a sense that we are transported to a new, immersive version of reality that might be augmented, virtual, or somewhere in between. Yet, after conducting 30 ethnographic interviews with practicing ARtists and experiencing hundreds of examples of activist ARt works myself, the embodied knowledge I acquired resulted in fundamental shifts in my perspective. Participants like Sander taught me that the metaverse isn't a place or location, but a relationship between human beings and Web 3 technologies that powerful tech companies deem highly profitable.

This conceptual shift in defining what the metaverse is—and is not—will be critical to the future of a cultural sociology of art. During this early, liminal stage of the metaverse, therefore, cultural sociologists of art must break with the sociology of art's previous reliance on spatial metaphors like "fields" or "art worlds," because the metaverse isn't *really* a field or a bounded art world, but a relationship. Moreover, ARtists fear that users do not often realize this is a relationship over which they have any agency. Rather, the initial stage of the metaverse has habituated users to perceive the metaverse as an exciting destination, and themselves as passengers along for the ride. New directions in the sociology of art must rely less on realist, spatial metaphors as we shift our analytical gaze instead to the study of the emerging relationship

between materiality and meaning in a Web 3 context. This relationship warrants ongoing cultural sociological investigation as Web 3 technology continues to transform the lifeworlds of social actors who bring a diverse range of positionalities and levels of technological literacy to these rapidly shifting landscapes.

Throughout this paper, I've relied primarily on the continuum of aesthetic experiences generated by cultural sociologists who seek to understand the relationship between materiality and meaning as it relates to art encounters. I've suggested that these forms of aesthetic experiences range from the iconic to the indeterminate, while current sociological literature assigns varied levels of importance to the semiotic and sensory dimensions of such experiences. Drawing on Isaac Reed's (2011) notion of a maximal social interpretation as historically located and culturally specific, this study demonstrates that Web 3 technology is gradually introducing a particular set of material conditions during our contemporary moment that must be taken into account due to their mediating effect on the range of interpretive possibilities available to social actors in the emerging context of the metaverse. In this regard, a cultural sociology of art must continue to account for the mediating effects of Web 3 technologies on horizons of interpretation as the metaverse evolves. Understanding the way that social actors derive meaning in the midst of these shifting experiential conditions of both immersive art, and reality itself, will be central to a cultural sociology of art related to the metaverse.

In order to further develop a maximal interpretation of Sander's work, we must reach beyond the conceptual parameters of the cultural sociological concepts outlined in this paper thus far. I've argued that the concept of an iconic form of aesthetic experience is more developed throughout the literature, while the sociology of art has an opportunity to consolidate analytical efforts to explain indeterminate aesthetic experiences. At this juncture, we therefore run the risk

of privileging iconic accounts of meaning due to a lack of cohesive vocabulary to bring to bear on the indeterminate aesthetic experiences that constitute a Web 3 based environment. Yet, the art of the metaverse produced in our particular historical context demands more than the activation of a social actor's iconic consciousness as they "read" the iconographic cultural narratives or codes invoked by a work of immersive art. While the study of aesthetic experiences in the context of the metaverse poses unique challenges for the analyst, cultural sociologists of art have an opportunity to further investigate how social actors relate to this emerging technology as it transforms the phenomenological conditions of art encounters and the meanings we derive from them. The metaverse is gradually introducing an experiential paradigm shift that is transforming Alexander's notion of a cultural iconosphere with each immersive encounter. A cultural sociology of art must move beyond the metaphor of the "eye" in order to explain aesthetic experience in our contemporary context—the metaverse marks the decline of ways of seeing, and the ascent of ways of *being*.

In order to supplement extant understandings of aesthetic experience with additional nuance related to our complex and emerging relationships to Web 3 technology, the following framework draws on phenomenological vocabulary. At a foundational level, a phenomenological approach to the study of any kind of human praxis defines experiences as relationships between the human and their environment (see Figure 9). In what follows, I have adapted existing approaches by underscoring how a user's relationship to AR technology conditions the trajectory of their experience after the initial encounter in Phase 1 along three experiential pathways. From a phenomenological perspective, the framework chronicles how the relationship between meaning and materiality is qualitatively conditioned by the user's familiarity with AR as the technology approaches the final phase of mass adoption by users.

The “users” to which we refer throughout the subsequent explanation of this framework are ideal types that inform ARtists’ design processes. Throughout this ethnographic study, I learned that ARtists like Sander are guided by imagined interactions that their future users will co-create from the experiential conditions they design for their ARt. As mentioned previously, interactive works like augmented reality art challenge traditional categories like the “artist,” “recipient,” and “production.” I suggest that a meaningful study of ARt must begin with the experiential conditions that ARtists design, while subsequent research might explore how users eventually navigate such conditions to co-create their own experiences. What I’ve outlined in the framework below are the possible pathways that ARtists like Sander imagine their users will traverse as they interact with works of ARt. In other words, the framework is an ARtist’s blueprint that informs the experiential conditions they design to co-create augmented aesthetic experiences with their users.

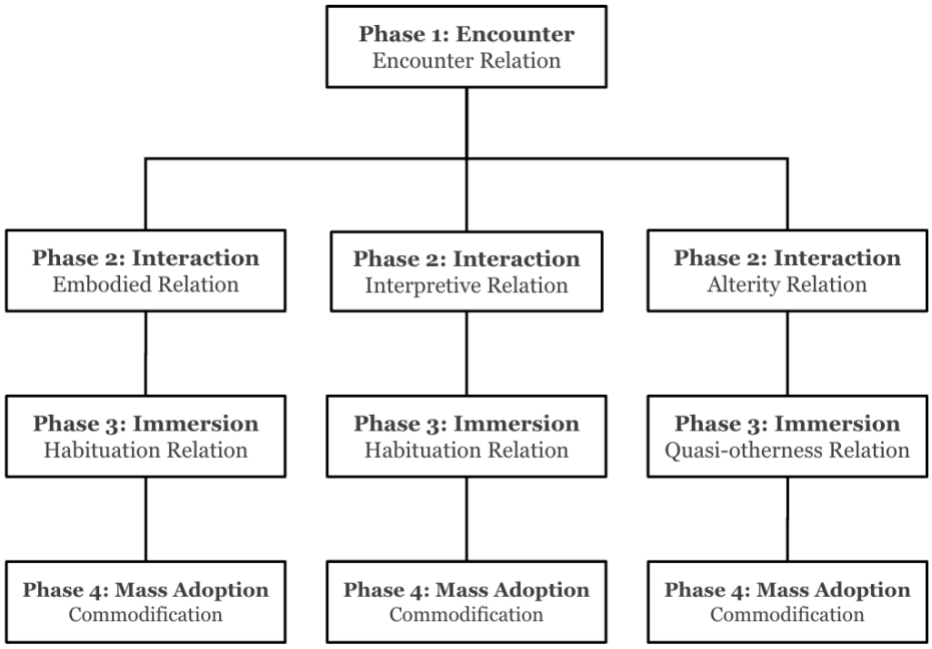

Figure 9. Three Relational Forms of Augmented Aesthetic Experience

Phase 1 of the framework describes the initial moment during an aesthetic experience when the user encounters the work of ARt. This phase is commensurate with the initial phases of aesthetic experience previously outlined by Alexander et al. (2012), Klett and Gerber (2014), as well as Qu (2017). During Phase 2, Interaction, we depart from prior approaches by introducing concepts put forth by philosopher of technology and phenomenologist Don Ihde (1990, 1993). Ihde's phenomenological programme suggests that our corporeal relationships to technology are fundamentally plural, and can be described by three forms of relationships to technology—embodied relations, hermeneutic relations, and alterity relations. Each relation refers to different levels of transparency that the technology possesses in the course of our experience, ranging from the inconspicuous (embodied relations) to the conspicuous (alterity relations). When a user relates to technology in an embodied relation, the technology is experienced with little-to-no effort, instruction, or interpretation. Ihde's common example of an embodied relation is one's relationship to eyeglasses. For our purposes, embodied relations encompass the indeterminate form of aesthetic experience put forth by Klett and Gerber (2014).

The opposite form of relation, however, is an alterity relation. When a user relates to technology in an alterity relation, the technology remains conspicuous and does not recede into the user's environment in an embodied manner. In such experiences, the technology remains a "quasi-other" in the environment, and retains its phenomenological presence as an object. An example of an alterity relation is one's relationship to a refrigerator. And in between these extremes, Ihde situates hermeneutic relations, which I've renamed as "interpretive relations" in the above framework to reflect contemporary cultural sociological terminology. Interpretive relations to technology require the user to interpret something about the technology in order to understand their experience. Ihde's example is a thermometer, because the user must "read" its

information during the course of interaction. The interaction needn't be visual or textual, however. A ringing smoke alarm also affords an interpretive relation, for instance. Interpretive relations encompass Alexander et al.'s (2012) notion of iconic aesthetic experience.

During Phase 3, Immersion, I've extended earlier approaches to aesthetic experience by incorporating technological literacy over time into the framework, because ARtists design their works specifically with users' AR literacy in mind. For an emerging technology like AR, the novelty and learning curve associated with the technology directly condition the user's capacity to derive meaning from works of ARt. For instance, a user's fascination might condition positive meaning-making processes, while a user's frustration with the learning curve might condition a negative experience. After repeated embodied relations or interpretive relations with a technology, the user might proceed to what I've termed a habituation relation in the first two paths of the framework. A habituation relation is marked by the user's routinized relationship to the technology that occurs after repeated encounters (see Thompson 2009 on the neurobiological concept of habituation). A user may not reach this level of familiarity with technology, however, in which case the form of immersion available to them would merely solidify the quasi-otherness of the object in their environment after repeated encounters. Thus, I'm suggesting that the concept of immersion is not monolithic, and can serve to solidify a range of relations to technology.

Lastly, I have included the final—and optional—phase, Mass Adoption, which embeds the framework in its broader sociopolitical context. Extending Qu's (2017) approach to the study of augmented aesthetic experience, I argue that one's experience of augmented reality art is conditioned by the technology's level of adoption and subsequent commodification. As AR approaches mass adoption throughout the coming decade, the meanings that users derive from

ARt experiences will be similarly impacted. Further, ARtists and activists like Sander actively monitor an emerging technology's progression towards mass adoption, because its subversive potential as a medium diminishes as the technology approaches commodification. Thus, the alterity relation pathway of the framework represents the kind of augmented aesthetic experience Sander has designed with "Patent Alert," although he fears that mainstream use cases like Snap have already begun to uncritically habituate users along the embodiment relations pathway of the framework.

To be clear, not all aesthetic experiences afforded by augmented reality art serve to generate critically informed modes of embodiment in the metaverse. Sander explained that works of ARt that are socially and politically informed make up a small proportion of the augmented reality art currently being designed by mainstream creators. Users are already becoming accustomed to the forms of aesthetic experience afforded by mainstream uses of XR such as the popular beauty filters found on Instagram and Snap. As corporations capitalize on users' fascination with this novel technology, ARtists fear that the metaverse will be reduced to an immersive realm characterized by face filters, virtual shopping malls, and gamified opportunities to escape reality and mindlessly spend money. The longer a user remains distracted in a virtual or augmented version of reality, the more susceptible they will be to monetization opportunities.

This is further evidenced by our discussion regarding the reception his work has received throughout the digital art world. Sander explained that his minimalist, indeterminate ARt experiences are routinely criticized by other digital creators and augmented reality artists in online communities like Reddit. Their criticisms, he explains, are typically rooted in accusations that the works are too unpolished and aesthetically simple. To Sander, their critiques suggest that uncritical ways of seeing and sensing augmented reality art have already begun to take hold as

Big Tech companies like Snap and Instagram primarily circulate AR filters devoid of any social or political significance. It is rare for Sander to encounter other creators who are motivated to design similar, indeterminate AR experiences. Today's uncritical user, he explains, expects to be entertained, and to escape reality in a Web 3 environment. This signals to him that even the earliest wave of augmented reality experiences has habituated users to passively consume Web 3-based experiences. By designing aesthetic experiences beyond these mainstream use cases, ARtists like Sander seek to provide users with opportunities to navigate the unfamiliar medium of AR with increased critical autonomy. Bolstering users' autonomy along these lines is intended to thwart Big Tech's monopoly of a Web 3-based reality as our collective capacities to perceive the metaverse become gradually more reflexive and less passive over time.

In Sander's case study, we saw him design an alterity relation to invite the user to reflect on the medium of AR and their relationship to it, reminding social actors that the metaverse isn't an escapist "ride," but a two-way relationship with consequences that aren't immediately perceptible. Sander's work serves as a critical reminder that there's more to a Web 3-based user experience than meets the eye. The way we see, sense, and derive meaning from immersive aesthetic experiences in the context of the metaverse may be fun, distracting, and easily embodied to the untrained user. A maximal interpretation of Sander's "Patent Alert" highlights opportunities to further explore the way that power and art intersect to shift interpretive possibilities in even the most indeterminate aesthetic conditions. His work demonstrates the way that avant-garde artists are attuned to their recipients' perceptual tendencies, and carefully design aesthetic experiences that challenge and habituate recipients to see and sense the world anew.

Sander's work invites users to develop an informed, critical relationship to immersive media with each ARt encounter. As such, ARtists like Sander are generating new, embodied

modes of seeing, sensing, and constructing meaning in an immersive reality by reminding users that simply existing in the metaverse is a politicized experience that Big Tech companies deem highly profitable. Though subtle, the perceptual shifts that artists like Sander seek to facilitate point to the political significance of phenomenological encounters with avant-garde art. If we apply a cultural sociological perspective to the case of Sander's ARt, it's apparent that the medium of AR is itself a politicized dimension of the ARt encounter that conditions interpretive possibilities in the absence of familiar cultural icons. By subverting mainstream ways of seeing and sensing one's reality through aesthetic experiences, we can relate the interventions of Sander and the ARtists who constituted this ethnographic sample to a long tradition of avant-garde artists who believe that perception—whether iconic or indeterminate—is a political phenomenon. Much like the work of Guy Debord (2021) and the avant-garde collective the Situationist International, ARtists take their primary site of artistic and political intervention to be everyday aesthetic experience itself, and design subversive, carefully curated moments and situations that shed new light on old ways of seeing and sensing our highly mediatized reality.

CONCLUSION

Augmented reality activist art like Sander Veenhoff's "Patent Alert" generate questions about the phenomenological changes that are rapidly underway as Big Tech companies develop Web 3 technologies at an unprecedented scale. This liminal phase of the metaverse also provides powerful tech companies with a blank experiential slate, so to speak, as they subtly control the choreography of users who are new to this Web 3-based reality by reinforcing certain behaviors. While Sander's "Patent Alert" serves as a hyperbolic demonstration of this form of control, it points to the way that existing Web 3 experiences have indeed begun to habituate users to seek

out a particular form of augmented reality—the gamified, entertaining variety that we see on Instagram and Snap. By bringing this embodied power relation to the foreground of the user's awareness in his work, Sander introduces a form of phenomenological friction (or alterity) into the user's experience to interrupt their passive engagement with augmented reality. Thus, ARt interventions like Sander's "Patent Alert" can be conceptualized as more than simply experimental art works. Such works serve as socially and politically salient attempts to transform our collective perceptual capacities—the ways we see, sense, and gradually embody an environment that is becoming phenomenologically transformed by Web 3 technology and monopolized by Big Tech.

What's at stake for cultural sociologists, I suggest, is the way that social actors make meaning in such technological conditions, and the fact that this novel phenomenological relationship is nested in an institutional context marked by a corporate race to commodify and monetize the metaverse relationship. I propose that this empirical reality hastens an intellectual convergence between the "sociology of culture" and "cultural sociology" to pursue new directions in the sociology of art. Cultural sociologists of art must be attuned not only to the way that Web 3-based art combines meaning and materiality in novel ways, but also to the reality that such encounters are being commodified and curated largely by Big Tech companies controlling our emerging, embodied relationship to this technology. As cultural sociologists continue to respond to McCormick's (2022) call for a meaningful sociology of art, the relationship between materiality and meaning must be conceptualized as a power relation with both phenomenological and institutional implications. *Pace* Bourdieu and the critical stream's tendency to foreground how power and art intersect to reinforce the capital of cultural gatekeepers at the institutional level, however, I suggest that cultural sociologists of art begin by investigating the relationship

between power and art at the phenomenological level of the user's experience with Web 3-based art. This, I argue, is where the tools of cultural sociology are well positioned to further explain the paradigm shift that is currently underway, thereby producing more analytically precise accounts of the aesthetic experiences that will continue to confront social actors as Web 3 technology changes the social terrain of their lifeworlds.

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CONCLUSION

This dissertation has explored the phenomenon of augmented reality activist art with the goal of providing several conceptual entry points for interdisciplinary scholars interested in further understanding this emerging form of sociopolitical participation, and the metaverse more broadly. The three articles that constitute this project have contributed findings that pertain to the case of AR activist art from methodological, empirical, and theoretical vantage points, respectively. While I summarized these contributions in the *Introduction*, I'd like to utilize these concluding pages to reflect on my sociological contributions in further detail.

My hope is that this dissertation motivates sociologists to consider how our evolving relationship to the metaverse might impact the social actors and lifeworlds they investigate. I've endeavored to contribute an accessible project that demonstrates why the metaverse, and the medium of AR in particular, warrant sociological attention from cultural sociologists, sociologists of art, and sociologists of social movements who may not have prior experience studying technology or new media. Along these lines, I've framed my methodological, empirical, and theoretical contributions without assuming my reader's subject matter expertise in the subfields of new media or technology. If the predictions of this study's ARtists are correct, the study of the metaverse will eventually evolve from a specialty area that's primarily relevant to media scholars and tech enthusiasts to a quotidian dimension of our social lifeworlds. The initial wave of augmented reality activist art suggests that the proliferation of Web 3 technology will be accompanied by phenomenologically novel experiential conditions that will transform the ways we learn, work, shop, and play.

If I have succeeded, then my contributions will equip sociologists without specialty knowledge to leverage my methodological, empirical, or theoretical work to advance their own questions about our evolving relationship to the metaverse. It may surprise my reader to learn that this is not because I aim to reify the metaverse as an *essentially* interesting or promising sociological subject. My personal biases actually skew in favor of life offline and unplugged. As a sociologist writing in 2023, however, this project is the result of my observation of the proliferation of ubiquitous computing technology, and the rapid ascent of immersive technologies like augmented reality. Thus, I approached my case not as a technological apologist or enthusiast. I was simply invested in understanding how immersive technology is transforming the lifeworlds of social actors, especially those who derive sociopolitical meanings from immersive experiences. As data collection progressed, I grew increasingly convinced that my sociological colleagues interested in the study of contemporary social life would benefit from exploring social actors' relationship to the metaverse. I believe this to be the case for sociologists of technology, of course, but this also holds true for cultural sociologists, sociologists of art, and sociologists of social movements.

Though an important dimension of sociological work is connecting one's findings to ongoing scholarly conversations, one of my key contributions has actually been my argument that we *revive* a scholarly conversation about aesthetic experience within cultural sociology and the sociology of art. This has methodological, empirical, and theoretical implications which motivated the structure of this project. While much of this prior work had been conducted theoretically, I was motivated to understand how augmented aesthetic experiences are conducive to ARtists' sociopolitical objectives from an ethnographic perspective. As I pursued my interest in this phenomenon as an important nexus of meaning and materiality, I had to adapt extant

ethnographic methods to meet the empirical demands of my case. My survey of the sociological literature related to ethnographic methods, however, did not provide me with the methodological tools to deeply engage with a new technological medium. Thus, I tasked myself with developing my own approach to the study of the aesthetic experiences that constitute my research participants' creative practices.

It was during this preliminary phase of my research that I benefited from the subfield of digital anthropology. Their ethnographic approach to the study of digitally mediated lifeworlds was more advanced than related sociological resources, from my perspective. Yet, a core tenet of my training as a sociologist, and as a former social worker and activist, is to assume that the distribution of power is a fundamental dimension of social life. As I outline more specifically in Article 1, "Making Sense of ARt: A Methodological Framework for the Study of Augmented Reality Art," digital anthropologists do not necessarily share this assumption about the ethnographic study of social life. I read dozens of digital anthropological ethnographies that did not incorporate the study of power and inequality into their analyses. Moreover, I struggled to find methodological resources that provided me with clear guidance regarding the rigorous study of aesthetic experiences that addressed the phenomenological dimension of power and inequality. This was until I discovered the work of anthropologist D. Soyini Madison. This project is deeply indebted to her pioneering treatment of politics, phenomenology, ethics, and ethnographic methods.

By "power" and "inequality," I generally refer to the distribution of resources and opportunities (material and immaterial) among individuals, groups, and communities. For the purposes of my project, I sought methodological guidance that corresponded to the way that unequal distribution of resources and power is sensed and experienced by social actors

phenomenologically. If the focus of my analysis was to be the sociopolitically motivated aesthetic experiences of ARtists, I needed to equip myself with a methodology that assumed aesthetic experiences could be sites of sociopolitical significance. The result is "critical sensory ethnography," a method I have adapted to augmented aesthetic experiences. Though my application of the method was medium-specific throughout this dissertation, I invite qualitative sociologists and ethnographers to further develop the method for studies that pertain to both the semiotic and sensory dimensions of social lifeworlds. I hope I have not privileged one source of ethnographic data above the other throughout this project, and have demonstrated how they might jointly inform analysis.

Throughout this dissertation, I have also argued that the metaverse must not be conceptualized as a reified place or destination, but as a relationship between users and Web 3 technologies like augmented reality. I propose that these points are particularly relevant to cultural sociologists, and sociologists of art. With Article 3, "Augmenting the Sociology of Art for the Metaverse: Materiality, Meaning & the Future of Aesthetic Experience," I leveraged critical sensory ethnography to argue that augmented aesthetic experiences constitute some of the earliest illustrations of the way that meaning and materiality will relate in the emerging context of the metaverse. My research participants' emerging creative and sociopolitical practices draw on a distinct form of embodied knowledge that ARtists have cultivated for years. This embodied knowledge assumes a particular relationship between meaning and materiality whereby the digital and physical, the seen and unseen, the real and the imagined, are inseparable. At a foundational level, this relationship leverages digital assets to create an augmented gestalt for the user to critically consider what is perceived, erased, hidden, latent, or possible about their real, physical worlds. Augmented aesthetic experiences are visceral moments that stretch the user's

traditional spatial, temporal, and ontological logics, inviting them to reinterpret the social and political contexts of their real lives.

I've also demonstrated that new media activists are leveraging augmented reality technology to create aesthetic experiences that critically habituate users to reflect on their relationship to Web 3 technologies like AR as Big Tech works to commodify this profitable immersive relationship. Years before Mark Zuckerberg and Meta championed the metaverse, ARtists like the ones in this research sample were already convinced that our future would be constructed with Web 3 technologies. They weren't convinced because the technology can be gamified for entertainment or commercial purposes, although they assumed these use cases would certainly become popularized in the mainstream. Indeed, Facebook's transition to Meta is largely driven by the potential profitability of such use cases.

Rather, this dissertation has demonstrated that ARtists' use of augmented reality is not driven by utopian fascinations with novel technology, or escapist impulses to traverse alternate realities beyond the real world. Before Pokémon Go or Instagram beauty filters, ARtists were among some of the first people to routinely incorporate augmented reality into their lifeworlds. Their motivations have always been to explore the sociopolitical potential of augmented aesthetic experiences, and their implications for injustices that are grounded in the physical world.

By reviving scholarly debates regarding aesthetic experience, therefore, I hope that cultural sociologists and sociologists of art will benefit from my theoretical conceptualization of augmented aesthetic experience. The cultural sociologist and the sociologist of art may note my emphasis on *experiential conditions* in lieu of traditional conceptual categories like the "audience," "cultural production," or the "artist." Interactive ARt challenges these categories by

inviting users to become co-creators of emergent, augmented aesthetic experiences. In a choose-your-own-adventure-style of immersive participation, users are invited to navigate the ARtist's experiential conditions in a manner that is dependent upon their level of habituation to this new technology. During this early stage of our evolving relationship to the metaverse, I suggest that these experiential conditions are salient sites of meaning-making that must be further explored by sociologists of art, and cultural sociologists more broadly. As Web 3 technology continues to evolve toward mass adoption of the metaverse, future sociological studies of these processes will be necessary to interpret immersive social lifeworlds.

Lastly, we conclude with a discussion of Article 2, "Building a Critical Metaverse: Augmented Reality Activist Art & the Emergence of Web 3 Activism," and its relevance to sociologists of social movements. As I have reiterated throughout this dissertation, the ARtists in this study consider their emerging practice to be additive to existing activist repertoires. None of my participants considered ARt activism to be the culmination of activism, or the only repertoire necessary to pursue meaningful sociopolitical change. It was widely accepted among the participants that activism is a multifaceted practice that consists of a range of repertoires. Against the backdrop of extant repertoires available to *today's* activist, the ARtists in this dissertation also seek to prepare the activists of *tomorrow* as our relationship to the metaverse evolves.

Anchoring their interventions in the physical world is an integral part of their creative process, which ARtists routinely explained distinguishes the medium of AR from an entirely synthetic, VR experience. ARtists hope that by participating in an augmented aesthetic experience, their users will derive increased levels of empathy, awareness, and motivation that will extend to real, practical sociopolitical participation. They also hope that AR will get users out of their homes, and more engaged with their physical surroundings than Web 2 activism

affords. For location-based ARt experiences, ARtists explained that ARt has implications even after the experience has concluded. The embodied knowledge that accompanies a work of activist ARt renders the physical locations and monuments augmented in the user's memory over time. After interacting with a work of ARt, users might embody a different relationship to familiar monuments or murals, for instance, because the physical sites still contain a trace of the ARtist's activist intervention.

The average user of AR technology, however, is not readily equipped with this embodied common sense, and may struggle to either access or derive meaning from works of activist ARt prior to habituation. Accordingly, as I discussed the concepts of protest and activism with my research participants, I asked them if they've had to navigate criticism accusing their novel form of digital activism to be a kind of "armchair activism" or "slacktivism." These critiques were common as internet activism was on the rise for the first time. My participants were reflexive about the novelty of the medium of AR, and the challenges that accompany the circulation and subsequent impact of their ARt interventions. They frequently explained that they deemed ARt activism to be a more engaging form of activism compared to the insular nature of online activism via Facebook and Twitter, or the synthetic environments of VR. Importantly, AR requires a user to experience the real world rather than simply retweeting a politically charged post. Thus, ARtists routinely observed that their ARt activism remediates Web 2 activist repertoires by inviting users to participate and perceive the real world through a more sociopolitically conscious lens. In this way, their use of the medium of AR signals a critical departure from the mainstream Web 3 use cases that Big Tech companies are currently monetizing.

Admittedly, however, they're aware that the average user is not habituated to this practice. This is a known limitation of their work in our current moment. Yet, ARtists curate aesthetic experiences with the expectation that they will become increasingly legible as users continue to become habituated to Web 3 technologies over time. Along these lines, I've included an excerpt from my interview with Tamiko, an experimental technologist and Web 3 activist artist, as we discussed skeptical responses to her activist ARt. Tamiko's perspective is especially salient, due to her pioneering role as a co-founding member of the Manifest.AR collective, and her career as an influential new media artist and activist spanning over 40 years of technological and sociopolitical transformation. Trained as both a mechanical engineer and an artist at MIT and Stanford, Tamiko's career was launched in Silicon Valley in the 1980s as she helped design the world's first commercial supercomputer.[41] She has created avant-garde, multimedia works of art since. Below, Tamiko discusses notions of accessibility and impact of avant-garde works of activist ARt:

> ALIDA: Have you had to engage with criticism about what it means to protest through ARt versus, say, getting out in the streets with picket signs or other traditional modes of protest?
>
> TAMIKO: Definitely, in the beginning it was like, well, you know, no one will see [the activist ARt]. No one will know about it …but because I am a visual artist, I believe in the power of the image. And I believe in the power of documentation. And, you know, as someone who's been a practicing artist since … 1986 … if I hadn't documented all that I could, I wouldn't have gotten into the Museum of Modern Art. That's simply a fact of life.

[41] Learn more about the CM-1 and CM-2 supercomputers at the following link: https://www.tamikothiel.com/cm/

> And so I believe in documentation and I believe that even if, you know, at the point when [the ARt] happens, perhaps people didn't see it, you could say the same thing about … early performance art, early conceptual art. How many people saw it back in the 60s? Back in the 70s, you know, and now we go, "Luckily there's this fuzzy film from the 70s," and "Look how innovative that performance was," and "Isn't it great that we have that?" So, as an artist who has been forced to focus on long term rather than short term, because the work that I was doing wasn't considered art when I was first doing it, I believe in the power of documentation to live over the ages and communicate over the ages …
>
> So, I think any sort of avant-garde art movement always deals with that problem. It's not like AR art is the only work that can be invisible to a large number of people. There's all sorts of problems with getting people to look at your work when it's actually happening. And it's not just the problem for ARt. You know, as Lynn Hershman points out, she told me she was over 72 before she sold her first work of art. Louise Bourgeois, you know, [was 98] and she's now getting her first solo show in New York … You've got to be in it for the long game.[42]

Tamiko's understanding of the "long game" is pertinent as she describes the way that avant-garde artists and future-oriented technologists produce work amidst sociohistorical contexts where their work is not immediately accessible, legible, or impactful for a wide audience. Much like avant-garde artists before her, Tamiko conceptualizes her practice with an emerging medium as an iterative process that may—or may not—eventually culminate in

[42] Personal communication, July 14, 2021

recognition or substantive impact. She's aware that the average user will not understand how to navigate the experiential conditions she has designed, but isn't discouraged by their lack of embodied knowledge. She understands that users will need to develop their relationship to the metaverse before her work can be fully realized. Like many of the other participants, Tamiko regards each ARtwork as an opportunity to invite users to gradually develop the perceptual capacities to understand and engage with her work.

As the medium of AR proceeds toward mass adoption, Tamiko trusts that the latent impact of her ARt will become increasingly apparent. The process of documenting her interventions, therefore, is an important dimension of Tamiko's long-term practice. During this early stage of the metaverse, she carefully documents her works via her website, social media, and through formal and guerilla exhibitions in order to circulate her ongoing attempts to provide users with a new form of aesthetic experience. Much like the Impressionists of the 19th century, or the performance artists of the 1970s, she explained to me that teaching audiences how to see and sense a new form of art is a requisite task of avant-garde artists. Their work, therefore, is two-fold. Not only do avant-garde artists create aesthetic experiences that challenge extant ways of seeing and sensing one's reality. Oftentimes, avant-garde artists must also equip—or habituate—their recipients with new perceptual capacities to see and sense the work, which may not occur during the lifetime of the artist. Such perceptual transformations are an important dimension of the circulation of any new medium, from film to television to the mobile phone.

From a critical sensory ethnographic perspective, Tamiko's work taught me that a deep understanding of ARt must account not only for the sociopolitical content of her work, which ranges from climate change to gender disparities in the art world. We must also account for the subtle, yet significant, phenomenological shifts afforded by her ARt as her users slowly

accumulate the embodied knowledge to interact with it, and co-create it within the experiential conditions she designs. Like many of my participants, Tamiko takes this phenomenological exercise seriously because she's aware that Big Tech companies have a vested interest in training users to see and sense augmented realities as passive consumers. By focusing on the long game, ARtists like Tamiko are committed to equipping users with a more critical mode of seeing and sensing their realities through augmented aesthetic experiences that interrogate the sociopolitical conditions of their everyday lives. Partly art, partly activism, augmented reality ARt joins sociopolitical meanings with the material conditions of AR to generate a new mode of political consciousness that begins at the phenomenological level.

Tamiko and I continued to discuss the elastic boundaries of the categories not only of art, but of activism. As Web 2 activism was on the rise, for instance, accusations of armchair activism were directed toward activists who took to the internet as a new form of political participation for the first time. Today, it is unfathomable to envision an activist movement without a social media component. From the perspective of ARtists like Tamiko, it's simply a matter of time before mass adoption of Web 3 technologies makes it unfathomable to envision activism without technologies like AR. As an avant-garde artist, however, Tamiko's perspective illustrates an important dimension of emerging, unorthodox activist strategies that challenge our definitions of politics and political participation generally. Put simply, ARt reminds us that perception is political, especially within the emerging context of the metaverse. ARtists are some of the earliest translators, so to speak, of a new mode of perceiving reality that could eventually become commonplace in the coming decade.

As social movement scholars like David Graeber (2002, 2009) and Leah Lievrouw (2011) have observed, the early forms of emerging activist repertoires are often generated and

sustained by artists who, by definition, seek to creatively transform conventional ways of seeing and sensing one's reality through art. Similarly, the ARtists in this research sample aren't committed to traditional definitions of art or activism because they're invested in exploring the inherently fluid nature of both concepts. As social movement scholar Zeynep Tufekci (2017) argues, our benchmarks and gauges for what activism "is" and "isn't" must be increasingly pliable as digital technologies continue to transform society and politics in unorthodox ways. Thus, this dissertation suggests that the benchmark with which we measure the impact of augmented reality activist art must not be grounded in the Web 2 forms of activism that precede it.

Along these lines, scholars of social movements may have noted that ARt activism provides us with a potential case of *prefigurative politics* (Boggs 1977a, 1977b; Farber 2014; Gordon 2018; Juris 2008, 2016; Raekstad and Gradin 2020). Recently, the study of prefigurative politics has undergone a resurgence in scholarly interest (Törnberg 2021), evidenced by the first monograph dedicated to the topic in Raekstad and Gradin's (2020) *Prefigurative Politics: Building Tomorrow Today*. Though traditionally associated with specialized studies of radical Marxist and anarchist political theory and practice, I suggest that future research explores the emerging political practices of today's augmented reality activists from a prefigurative perspective. As social movement scholar Luke Yates explains, "To prefigure is to anticipate or enact some feature of an 'alternate world' in the present, as though it has already been achieved" (Yates 2015:4). Rather than looking to the past, my research participants create ARt that's grounded in future-oriented imaginaries where Web 3 technologies are commonplace. Further, these imaginaries are marked by a future state where Web 3 technologies reach mass adoption, and Big Tech companies stand to profit immensely from passive users captivated in a dystopian

virtual mall known as the metaverse. Against this anti-vision for a Web 3-based metaverse in the future, ARtists have provided the experiential foundation for users to develop a critical relationship to the metaverse in the present.

Just as the introduction of Web 2 technologies was accompanied by disparities between users who had access to the internet, to cell phones, and other privileges associated with tech literacy, and those who did not, the introduction of Web 3 technology stands to create and exacerbate a new kind of digital divide. At present, current debates in the tech industry relate to whether the technological architecture of the metaverse will facilitate a "closed metaverse" or an "open metaverse."[43] This study's research participants shared a concern that the metaverse is being designed by corporations like Meta who have purchased a "head start," so to speak, as they build a closed metaverse according to their specifications. In the context of a closed metaverse, Big Tech actors will continue to own and patent the software and hardware required to participate in these highly curated immersive environments. Participation in these environments might require significant pay walls, expensive gear (headsets, controllers), and a fragmented experience that is incompatible with other metaverse environments owned by competing companies. Thus, a closed metaverse amounts to the dystopian, virtual shopping mall that my research participants fear will exist primarily to captivate and profit from immersed users. My participants feared that this will be especially likely if the technology of VR outpaces that of AR, because fully synthetic environments are (1) more expensive to join, (2) require more technical skill to develop, and (3) insulate users from their sociopolitical reality in the physical world.

An open metaverse, on the other hand, would be characterized by the democratization of Web 3 proprietary technology and experiences. My research participants suggest that this is more

[43] Related debates also contemplate whether the metaverse will be "centralized" or "decentralized."

likely to occur with AR technology, rather than VR, because the barrier to entry is significantly lowered with AR. It's currently possible to experience an augmented version of reality with a smartphone, and the technology is easier for creators to learn and develop when compared to VR. As this dissertation has illustrated, an augmented aesthetic experience also serves to enhance the user's relationship to their real, physical environment. It follows that an environment where users move freely throughout the physical world enhanced with AR assets is more conducive to an open metaverse when compared to a VR environment that replaces the physical world. Further, an AR experience requires less bandwidth than a VR experience, which will be an increasingly important dimension of the Web 3 digital divide as metaverse experiences place more demand on consumers' internet connectivity compared to Web 2.

Thus, future sociological studies of the metaverse must continue to explore questions of access, comprehension, and the quality of users' relationships to emerging Web 3 technologies. As I've argued throughout this dissertation, it will be increasingly important to adopt a medium-specific approach to such questions, due to the substantive differences that distinguish AR experiences from VR, in particular. Adapting our questions and analytical methods to keep pace with our evolving relationship to the metaverse on the road to mass adoption will open up meaningful, new directions for sociological investigations of our immersive future.

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