Welcome to the Metaverse: Hacking Affect in Immersive Documentary to Increase Critical Big Data Literacy

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Abstract

This essay describes the process and background of the augmented reality documentary *Welcome To The Metaverse.* The authors situate themselves as research-creation practitioners and ethnographers exploring immersive documentaries as a method for increasing *critical big data literacy*, an emerging public-facing discipline concerned with pedagogical approaches to understanding power structures embedded in artificial intelligence and big data systems. The authors respond to research from critical big data literacy scholars and anthropologists using multimodal practices to foreground the ways that the digital tools used to create these works need further critical reflection. The authors explore how facial recognition and other aspects of augmented reality can be detourned or cultured-jammed in similar ways to media of previous decades, positioning immersive documentary as a method for hacking affect toward greater awareness of the multifarious politics of the Metaverse.

Keywords

Documentary, augmented reality, facial recognition, artificial intelligence, metaverse, culture jamming, multimodal anthropology, surveillance capitalism, privacy, Facebook.

DOI

Introduction

"Welcome! Blink if you agree to the terms and conditions!" an enthusiastic voice instructs you as your face is scanned. You blink. Your eyes are replaced with the celebration emoji 🎉. Music begins, and the same voice exhorts, *"We're so excited you've agreed to join The Metaverse!"*

These are the opening fifteen seconds of *Welcome To The Metaverse (WttM),*[1] an augmented reality (AR) documentary that author Gaylor created for Instagram in collaboration with HoloLabs (figure 1).

For this experience to work, billions of research dollars and millions of faces have been collected to train artificial intelligence systems that can detect the contours of your face and whether your eyes have closed. Before this experience could make its way to your phone, lawsuits were filed and settled over whether companies have the right to gather biometric data without consent (they do not).[2] While Gaylor and HoloLabs created the documentary, the Facebook corporation announced a rebranding as "Meta" and a $10 billion research agenda focused on the "metaverse," a virtual environment blending the real world with computer graphics.[3] *Welcome To The Metaverse* satirically explores why Meta desperately wants you and your data to succumb to The Metaverse.

Figure 1. Screenshots of the experience.
Image: B. Gaylor.

This paper situates *Welcome To The Metaverse* as a work of research-creation[4] in cross-disciplinary conversation with artists, scholars and activists exploring how communications technologies simultaneously reproduce unequal and oppressive relations of power and can be used to raise public awareness of those dynamics. We walk readers through chapters of the AR documentary to demonstrate immersive documentary as a medium uniquely situated

to raise awareness around issues of privacy and surveillance capitalism[5] that are at play in the Metaverse.

Building on Gaylor's earlier interactive documentary works such as Do Not Track[6] and Discriminator,[7] this paper positions *Welcome To The Metaverse* as a work of research-creation that brings into practice a call by multimodal anthropologists for a new reflexive turn in the discipline that engages with the material politics of the technologies used to create and exhibit their work.[8,9] This immersive AR documentary experience borrows tactics from culture jammers and media pranksters who use the technologies they critique to demonstrate their problematic nature. Grounded in these traditions, *Welcome To The Metaverse* aims to build critical big data literacy by alerting users to new ways that their data can be extracted and exploited.

This essay highlights how *Welcome To The Metaverse* (*WttM*) operates as a counter-narrative that uses storytelling, humour and interactivity to instigate critical reflection in users. Immersive documentary as research-creation practice represents a promising methodology for raising critical data literacy. As an approach to an emerging anthropology of the multimodal, we further present this work as an instance of augmented ambivalent anthropology in practice.

Augmented Ambivalent Anthropology

Despite the hype, the Metaverse remains a speculative media whose qualities we divine from science fiction, corporate videos, and early virtual and augmented reality works. Most people haven't tried it, and most of the experiences from SciFi and industry are still years away. The term "Metaverse" first appeared in Neal Stephenson's science fiction novel *Snow Crash* and described a virtual world that inhabitants spend time in to escape the reality of failed states, ecological collapse and corporate rule. As the cleverly named Hiro Protagonist declares: "When you live in a sh@!#t hole, there's always the Metaverse."[10]

Our times of plague, war and climate catastrophe can feel like the future Stephenson dreamed up. During the Covid-19 pandemic, Meta's Quest headset sales increased 350%.[11] It can certainly be a welcome diversion to visit the International Space Station, exercise at Machu Picchu, or experience a fantastical immersive world. For creators, the creative possibilities of VR to transport audiences to new locations and

experience things that would be otherwise impossible are often enough to overcome the reluctance to support a company such as Meta.

These mixed feelings are precisely the sort that anthropologists Astacio et al. encourage makers to embrace in *Multimodal Ambivalence: A Manifesto for Producing in S@!#t Times.*[9] The authors of this manifesto ask makers and anthropologists who are invested in research mobilizing new multimodal tools to pair their enthusiasm for new media with critical analysis of the political economies that underlie them. They ask us to pay particular attention to digital productions, which are often valorized for their ability to facilitate participation from under-represented communities in public discourse.

Multimodal ambivalence emerges in conversation with anthropologists such as co-author Hennessy's work with Takagawara et al. who argue that there is nothing inherently liberatory about the use of multimodal tools in anthropology. Playfully drawing on Sarah Ahmed's feminist critique of *bad habits*[12] and Pierre Bourdieu's *habitus,*[13] they identify *Bad Habitus* as the unpleasant feeling that unavoidable implication in ubiquitous big data environments and material infrastructures causes for them[8]. Through this ambivalent orientation toward the tangled politics of multimodal anthropology, they warn that uncritical use of digital technologies can reinforce racial inequality and extractivism by normalizing the problematic power structures that digital infrastructures exacerbate, online and off. They further point to research-creation as a productive methodology for an anthropology *of* the multimodal that critically engages the tools being used for greater awareness of their wider politics and impacts.

WttM is Gaylor's attempt to satirically engage the public in a dialogue around the darker side of the Metaverse. The narrator is ridiculously enthusiastic, while the actions he suggests ("scan your body!") feel dystopian. The documentary experience doesn't aim to generate outrage—it seeks to create mixed feelings and ambivalence. It does this by attempting to amuse users with interactive moments and animations, paired with allusions to Meta's attempts to gather increasingly detailed data about our homes and bodies.

FaceJams & Semiotic Resistance

WttM explores the problematics of the Metaverse in one of the most realized versions of the Metaverse available: Meta's Instagram face filters. These filters will be recognizable to the billions of users of Instagram, Tiktok, Messenger Kids, or Snapchat: a user's visage is augmented by computer graphics that track the position of their facial features.

WttM is novel in that the face filter changes to match the spoken narration. It operates as a hybrid between linear media, such as film or radio, and interactive and immersive media. We will refer to *WttM* as a "documentary experience" for this essay. By using affordances and tropes that feel familiar to social media users, Gaylor attempts with this documentary experience to introduce messages and conversations that they might not receive otherwise. In Umberto Eco's terms, he is waging *Semiotic Guerrilla Warfare*: subverting the communication "chain" by leaving the "channel" intact (Instagram) and inserting into the "message" (the documentary) a different "code."[14] This code is ambivalence—an unease about social media, tech platforms and surveillance.

The goal of the project is to use the sense of unease that the documentary experience creates as a contribution to the emerging field of *Critical Big Data Literacy,* a public-centred pedagogy focused on the growing centrality of data and critical examinations of these repercussions. In her introduction to the field, Ina Sander studied several online resources. She found that interactive creations were particularly suited to transmit big data issues because the media could be personalized and would best compete for attention.[15] *Welcome To The Metaverse* is the first immersive documentary experience to respond specifically to these findings and create new works with this knowledge in mind.

Contextual Integrity

"*To create the Metaverse, we first collected millions of photos of our users on the vintage website known as Facebook.",* the narrator declares as the next chapter begins. *"We used these faces to create an algorithm that can detect yours!"*

This narration refers to practices that Facebook has engaged in to train artificial intelligence systems. In 2021, residents of Illinois were awarded $650 million to settle a class action against Facebook, which had trained a facial recognition algorithm using their photos without consent. [2] In addition to violating Illinois' recently passed privacy laws, Facebook transgressed what scholar Helen Nissenbaum refers to as *contextual integrity.*[16] This framework judges whether information

sharing is appropriate based on "the type of information in question, about whom it is, by whom and to whom it is transmitted, and conditions or constraints under which this transmission takes place" (2004, 839).

This is essential nuance: while many users will describe uses of their data as "creepy,"[17] a fuller description of inappropriate data flows is necessary to hold tech platforms accountable.

Contextual Integrity recognizes that we might be willing to share certain information in specific contexts: we would not like intimate photos texted to a partner to be shared with our boss, for example. *WttM* users experience this firsthand when they see pictures of someone else's face, stolen from Facebook, on their own face (figure 3).

It is this notion of a violation of contextual integrity that the creators hoped *WttM* would impart, and where the work builds on and at the same time departs from subversive efforts in other media.

The goals of *WttM* parallel Eco's hope for "the constant correction of perspectives, the checking of codes, the ever-renewed interpretations of mass messages."[14] So, too, did those practicing critical remix on the media of the time—the so-called "culture jammers" of the 1980s and 90s who inserted counterculture messaging into billboards, radio and television broadcasts and print media.[18] These media, however, had fundamentally different characteristics than our present and future digital media. Consider an advertisement on a traditional billboard, a "one-to-many" media, in which a single message passes through a channel and is received in an identical fashion by audiences. Contrast this with an advertisement on Instagram, where the ads are chosen based on monitoring behaviour on the platform and predicting which messaging users are likely to respond to. Each will be viewed on a specific device, in a different location, and in specific language.

In the Metaverse, this trend is magnified—everything about your context, from your physical characteristics to location to your species, can be customized by you and personalized by advertisers. *WttM* applies principals of culture jamming to your specific digital context—what we call *context jamming*. This approach follows recommendations by Ina Sander *What Is Big Data Literacy* to increase the use of *personalization* in education resources, an approach well suited to networked documentaries such as *WttM* in which users are already using their own devices and are logged in with their own Facebook/Meta accounts.

"Thanks to the pioneering work on the Facebook timeline, data scientists now understand content that generates strong emotions keeps you engaged longer!", the narrator says to advance the next chapter of *WttM*. This refers to research done by Facebook engineers[19] who manipulated the type of content users would receive in their timeline to understand whether prolonged exposure to posts with strong emotions would lead to more engagement on the platform (it does). Here again the work creates a scenario where contextual norms have been violated: it is unlikely that anyone sharing an emotional Facebook post imagined that a data scientist would use it to measure "emotional contagion."

Both this story of manipulation, and the use of photos without consent, are both real stories of harm by Facebook/Meta. Having real, relatable accounts such as this was also a recommendation drawn from Ina Sander's research, and the purpose of these stories in *WttM* is to cultivate ambivalence, to acknowledge our bad habitus, to incite curiosity and seed doubt as to whether these technologies are operating in the best interest of users.

Hacked Affect

In the next chapter of *WttM,* viewers are presented with text describing how much money Meta CEO Mark Zuckerberg has made in the few minutes that the documentary has been playing. The narrator explains what is happening: *"Here is how much money Mark Zuckerberg made while you were watching this!"*
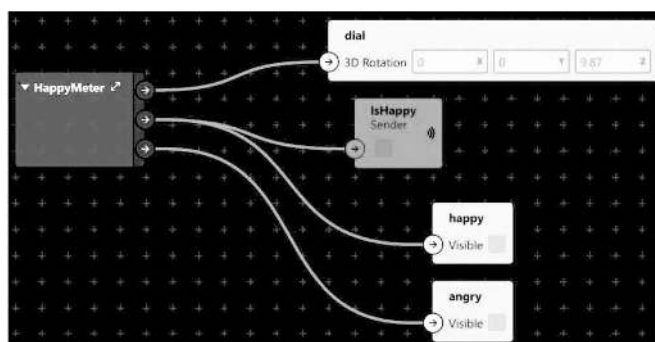

Figure 2. A screengrab of an effect triggered by a smile in Welcome To The Metaverse. Image: Hololabs.

An analogue meter appears over the user's face. By offering emotions as programming inputs (figure 2), Meta is attempting to normalize the concept of emotions as a universally consistent and measurable data point. This practice is known as *affect recognition*. As

Crawford points out, facial recognition seeks to recognize individual faces, affect recognition aims to identify universal emotions on any face.[20]

Affect recognition is currently deployed across many industries for a variety of uses, from monitoring emotional engagement during job interviews[21] to assessing student reactions during lectures[22] to detecting nervous terrorists in airports.[23] These capabilities are sometimes developed internally by companies or purchased as a service from companies. One such company is Affectiva, an MIT incubated startup that uses deep learning to offer emotional insights gleaned from training an AI on the expressions of 10 million people in 87 countries.[24] If a basic set of emotions is all a developer requires, affect detection is available in most standard facial recognition suites such as Rekognition by Amazon[25] or Face API by Microsoft.[26]

With *WttM,* we are subverting Meta's attempts at normalizing this practice by introducing skepticism as to the ability of software to detect emotion. While Meta presents affect detection to developers as a trustable input on the same level as a mouse click or text entry, recognizing emotions by studying the face is, in fact, a controversial practice. Indeed, the very epistemological basis of associating affect with facial expressions, developed by Paul Ekman in the 1960s, has been challenged by psychologists and anthropologists as being methodologically unsound.[27]
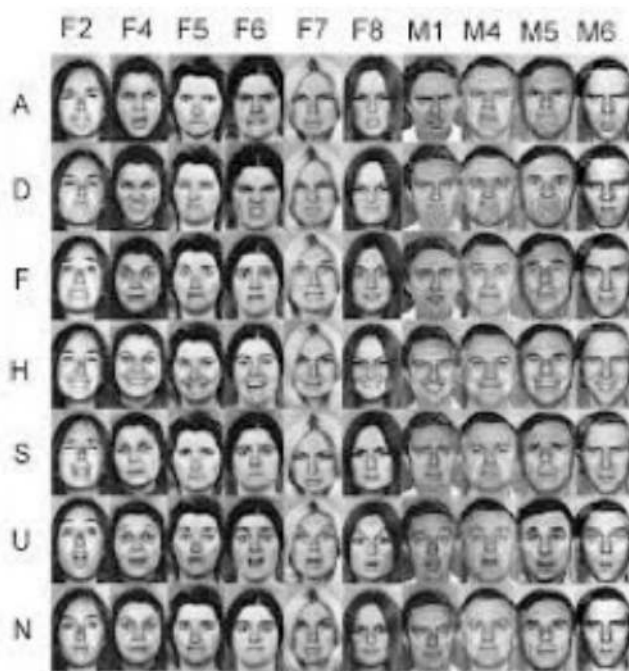

Figure 3. Photographs of facial expressions from Facial Expressions of Emotion – Stimuli and Tests dataset (FEEST). Image: Paul Ekman

This critique is based on Ekman establishing six emotion types: joy, anger, disgust, sadness, surprise, and fear, which he developed by photographing posed actors displaying caricatures of these emotions, claiming they were universal, and subsequently measuring test subjects against them (figure 3).

Anthropologist Ruth Leys notes that the central flaw in Ekman's methodology is its recursive logic: the photographs are assumed to be universal because they are free of cultural bias and culturally unbiased due to their universality.[28] Problems of this nature, where erroneous data lead to incorrect assumptions, are perfect candidates for artificial intelligence systems to make worse. Yet despite this, engineers began giving the task of comparing a subject's facial expression to photos in datasets such as FEEST (figure 7) to speed up and automate the process. As Kate Crawford notes in *Atlas of AI,* recognizing affect is a task that has been given to AI systems not because they are suited to the job but because the (weak) theory was suitable for what the tools could do—detect patterns. [20]

These systems are deployed on a global scale, such as the Screening of Passengers by Observation Techniques (SPOT) program of the US Transportation Security Administration, which uses Ekman's techniques to "detect" nervous flyers and flag them as potential terrorists.[23] Meanwhile, a comprehensive study of peer-reviewed science on affect recognition found no evidence that algorithms can detect a person's internal emotions. The research team warned, "very little is known about how and why certain facial movements express instances of emotion, particularly at a level of detail sufficient for such conclusions to be used in important, real-world applications." [28]

"Show us you're happy and we'll move on to the next chapter!" the narrator asks at the end of the sequence. *WttM* asks users at this point to perform what researchers have proven—an inner emotional state cannot be inferred by facial expression. After learning how much Mark Zuckerberg made in the minute or so of the experience (approximately $13,000), a user is more likely to be annoyed than happy. Yet they must smile to continue. Smile hard, in fact—the program intentionally delays the measurement of their smile to give the impression that they must smile more.

"Try harder to be happy!" the narrator implores and rewards them with pretend cryptocurrency once the smile registers. This immediate feedback from the system after having their affect recorded follows Ina Sander's recommendation that critical big data literacy resources should be interactive—users should be

required to make choices within the experience that influence the outcome.[15] Despite extensive literature around affect detection, there is a paucity of public-facing contributions that aim to illuminate its origins and problematics. Rather than a simple exhortation for users to protect their data from thieves, as many simplistic public service messages around privacy suggest, *WttM* is introducing a feeling of unease around the implications of having their emotions recorded by an entity they may not trust.

Asymmetrical Cognitive Ammunition

Welcome To The Metaverse, as a contribution to the emerging field of critical big data literacy, aims to plant doubtful seeds in users' conceptions of the Metaverse before it is fully realized. The work intends to call out the Metaverse as what Langdon Winner would call an *Inherently Political Technology.*[29] Winner casts technologies of this type as those that require specific political relationships to function: a ship that needs a top-down structure where the crew obeys the captain's commands, for example. The Metaverse, as conceptualized by Meta, requires *exploitation*: of the data of users whose bodies and environments are digitized, of the labour of workers who mine the minerals that are necessary for the hardware, and of the resources of the planet which must be marshalled for the energy to power the cloud computing that keeps the Metaverse running.

None of this exploitation is apparent when using the early prototypes of the Metaverse. The brightly coloured landscapes and diverting amusements offer no hint of the materials or labour marshalled to bring each virtual moment to life. Digital environments were not conceived in a manner that would make their processes transparent.[30] This makes efforts to crack open the "black box" with public-facing works such as *WttM* all the more urgent. As Vladan Joler and Kate Crawford remind us, the stakes of digital exploitation are vast:

"The scope is overwhelming: from indentured labour in mines for extracting the minerals that form the physical basis of information technologies; to the work of strictly controlled and sometimes dangerous hardware manufacturing and assembly processes in Chinese factories; to exploited outsourced cognitive workers in developing countries labelling AI training data sets; to the informal physical workers cleaning up toxic waste dumps."[31]

As creators, we feel that the most effective way to critique these problematic systems is to have users experience them within a new context. Yet this brings its own challenges: a tactical shortfall of semiotic guerrilla warfare is that the enemy owns the battlefield. This is true of all mass media: radio, television and Instagram are all difficult to hack because a layer of permission is applied before a message can appear on the platform. Yet to increase the literacies related to contextual integrity that we have highlighted in this essay, we we're obliged to use Facebook/Meta as both the channel and message. We could not take a picture of our critique and transmit the message as we could with a billboard culture jam. While creating *Welcome To The Metaverse,* we witnessed firsthand the limits of critiquing within such a vertically integrated communications system.

SparkAR, created and owned by Meta, facilitates the uploading of augmented reality face filters to its Instagram and Facebook platforms directly from within the app. There is no alternative distribution venue. Unlike the World Wide Web, this ecosystem is known as a "walled garden" and requires that each piece of content made available be screened and approved before appearing in listings and searches.

Upon submitting *Welcome To The Metaverse,* our team waited 24 hours, after which we received a notice that the project had been rejected. The notice stated that we had violated Policy 3.7 from the SparkAR policy by using a trademarked asset or colour gradient. There was no indication of which part of the experience violated the policy, but the team was confident that the violation was caused by using the "like" button. The narrator asked users to *"tap the like button to continue"* and displayed the blue thumbs-up image.[32] This image, and apparently the blue colour scheme, are trademarked by Facebook.

Our team replaced the like button with a heart, an image which Meta does not (yet) own, and resubmitted the project. Another 24 hours later, the filter was accepted and available to the hundreds of millions of users of Instagram and Facebook.

It is ironic that this image, which we found easy to replace, was censored. After all, the entire piece is a direct criticism of the Meta corporation. Our hunch, which we will never be able to confirm, is that our review was undertaken either by an algorithm or an outsourced temporary worker. Neither appears suited to detect satire, but both are another example of the extractive stack that the Metaverse is being built upon. Scholars have noted how content moderation algorithms reinforce white supremacy as they make no distinction between critiques of whiteness and racial violence.[33] Human-

based content moderation requires the exploitation of hundreds of thousands of workers around the globe working precarious jobs and being exposed to traumatizing images.[34]

Our team published a work that could easily be removed. Just as a McDonald's billboard spray-painted with vegan messaging would likely be taken down once the corporation or ad network became aware of the intervention, our project is likely ephemeral. Where it ever to be successful and brought to the attention of a Meta employee, it would likely be de-platformed.

Conclusion

By creating *Welcome To The Metaverse*, we enacted a promising approach to engage users of Meta using the company's own technology, introducing ambivalence surrounding the company's attempts to collect more of their data. By introducing the novel concept of *context jamming,* the documentary experience hopes to build critical big data literacy while hacking affect and encouraging the public to interrogate the power structures that underlie digital technologies.

This research-creation approach holds promise for those wishing to subvert and detourn extractive platforms, yet it also points out the control these platforms can exert to prevent the cultivation of doubt about their intentions. This is why critiques such as *WttM* must be followed, or potentially supplanted, by alternative visions on new platforms. The Metaverse of Meta is only one manifestation of a networked world, and virtual communities that uphold humanist values are waiting to be explored. As Langdon Winner reminds us, "it can happen that within a particular complex of technology... some aspects may be flexible in their possibilities for society, while other aspects may be (for better or worse) completely intractable."(1999, 135)[29] A non-extractive Metaverse is possible.

If creative resistance to the Metaverse of Meta is to take hold, producers and users of the medium need to imagine what alternatives could look like and distribute these speculative imaginings on platforms of their own creation. Encouraging yesterday's culture jammers to manifest a more healthy media landscape, advertising hacker Stuart Ewen asked them to lead by example. "If our critique of commodity culture points to better alternatives, let us explore—in our own billboards of the future—what they might be."[35]

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