The Metaverse and Other Digital Delusions

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When in October 2021, Facebook CEO Mark Zuckerberg announced the change of his company's name to Meta and its new emphasis on creating a 'Metaverse' it marked a period of increased investment in augmented and virtual reality technologies and applications and a burst of excited predictions about the new experiences. The explanatory videos that supported Meta's announcement were not, however, very specific, and by Fall 2022, when the final *Clash of Realities* Symposium was held, they had still not gained specificity, though investments continued to grow and overheated promises continued to proliferate. The emptiness of the descriptions at that time spoke louder than the large sums of money being invested, and they turned out to be a better predictor of the immediate future. By Spring 2023, the Metaverse hype had been replaced by an equal level of greed, excitement, and fear over AI, as a result of the surprising coherence of Chat GPT responses. The Metaverse-related lay-offs came sooner than even I expected when I delivered the original version of this essay as a slide talk in Fall 2022.

One of the best clues that there was no actual product in sight was the way in which the corporate rhetoric and visual evocations of the future 'Metaverse' emphasized immediate and total satisfaction. For example, here is the beginning of Zuckerberg's original Metaverse presentation:

"Desktop to web to phones, from text to photos to video. But this isn't the end of the line. The next platform and medium will be even more immersive, an embodied internet where you're in the experience, not just looking at it, and we call this the metaverse. And you're going to be able to do almost anything you can imagine, get together with friends and family,

work, learn, play, shop, create as well as entirely new categories that don't really fit how we think about computers or phones today."[1]

The promise of "almost anything you can imagine" is a promise of nothing in particular, but with unlimited gratification. As a design brief, it leads nowhere, and as a promise to consumers, it is a perfect set-up for disappointment.

Figure 1: Meta's The Metaverse and How We'll Build It Together (2021)

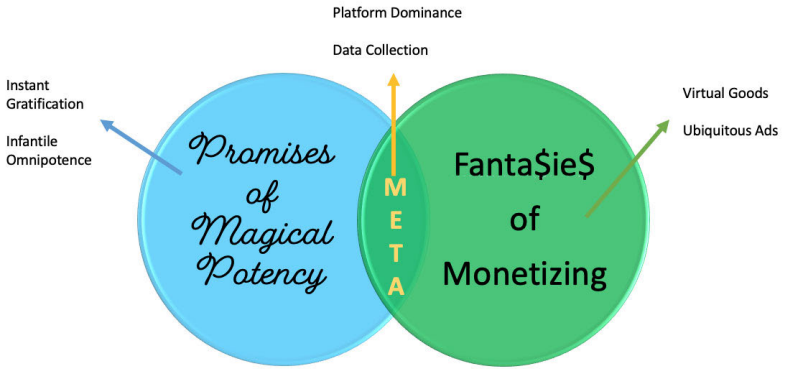
Source: Screenshot from https://www.youtube.com/watch?v=Uvufun6xer8

Though the promise is for "almost anything you can imagine," the imagination of the self-appointed builders of the Metaverse in 2021 was strikingly limited. The intro video of simulated future Metaverse interactions shows people represented as avatars, meeting around a table to play a card game (see Figure 1) or working in simulated office spaces. To the extent that exciting things are happening, the interactions have not been thought through concretely. For example, the first 'wow' moment is an avatar of one of Zuckerberg's co-workers floating in the air and then another one somersaulting backwards. But of course, this exciting weightlessness is not something that the person operating the avatar would be able to actually enjoy because they are not physically transported to this magical world,

1 Emphasis added, "Meta Connect Conference Video," transcription from https://www.rev.com/blog/transcripts/meta-facebook-connect-2021-metaverse-event-transcript, visited October 2, 2022.

but only viewing it on a headset. Later videos in the "Metaverse: Are We There Yet?" series take the form of an interviewer and a Meta executive taking a car ride through an imaginary space, enjoying a passing spectacle. The videos pointedly leave out the passengers' headsets, obscuring the boundary between the real and the (simulated) virtual. The message is clear: the Metaverse is magical, beyond the limits of the physical world, and the people selling it have not given thought to how to build it.

Figure 2: Map of the Metaverse 2022



Source: Janet H. Murray

In fact, Meta's projected Metaverse can be summarized by the Figure 2 Venn diagram. Claims for the Metaverse, in general, as a commercial target in 2021-22 are at the intersection of magical potency promised to consumers and omnipresent marketing promised to 'brands.' The 2021 Meta version of this hype is at the intersection of these two pipe dreams and takes the shape of proprietary control over the 'next internet, and the devices that will offer access to it. The corporate goal is to create an even more intrusive and pervasive platform than Facebook, one that will literally get us where we live—but also where we work and where we travel in between those venues—in order to collect even more specialized and marketable information and ad-targeting information than they can with their current platforms. This vision of expanded platform dominance and ad revenue was the heart of the large investment, the magical wish the corporation dreamed of fulfilling. The buzzword 'Metaverse' turned that wish for unlimited revenue into something that sounded like a place, an actual destination.

As many commentators pointed out, the notion of a magically gratifying 'Metaverse' is particularly odd since the term and the original concept from Neal Stephenson's dystopian *Snow Crash*,[2] in which mega-corporations like Facebook/Meta are depicted as forces for evil, and the Metaverse is a vastly different experience depending on your wealth. But it is even more important to note that the Metaverse in that book, in which you can have exciting adventures by navigating your avatar through a parallel geography complete with its own discos and supervillains and vehicles and weapons, is wholly fictional, an invention of a novelist. But, as we have seen before, there is an easy progression from a fictional technology to an aspirational technology to a delusional technology.

Figure 3: "Fragments" Microsoft HoloLens demo 2016

Source: Screenshot from https://youtu.be/m6Wndguve8U

In a 2015 *Clash of Realities* keynote titled "How Close Are We to the Holodeck,"[3] I traced the progression from Gene Dolgoff's actual and highly limited holograms to Gene Rodenberry's entrancing imaginary Holodeck, a recurring fictional technology in the STAR TREK universe, starting in 1974, to the embrace of a holodeck as an aspirational technology, a 'holy grail,' by early AI and VR researchers starting in the 1980s, and then to the assertion that 'The Holodeck Is Here!' by the manufacturers and reviewers of early consumer VR and AR headsets in 2015 and

2 Cf. Stephenson, Neal: *Snow Crash*, New York, NY: Bantam Books 1992.

3 Murray, Janet H.: "How Close Are We to the Holodeck," in: Clash of Realities (ed.), *Clash of Realities 2015/16: On the Art, Technology and Theory of Digital Games. Proceedings of the 6th and 7th Conference*, Bielefeld: transcript 2017, p. 29-43.

2016. But the Holodeck was not here. It was just intensely wished-for and hallucinated on top of much more limited technology. For example, the HoloLens promotional video of 2016 showed a digital image of a person sitting on a real-life couch next to a real-life user (Figure 3). The actual experience of that application was far less impressive because the limited field of view presented slices of the image, which was clearly a pre-corded video projection rather than a character open to interaction.

Figure 4: Magic Leap Promotional Video 2015

Source: Screenshot from https://www.facebook.com/watch/?v=1426631567381322

In 2014, one 'Metaverse' company, appropriately named "Magic Leap," conflated reality and fiction by hiring Neal Stephenson himself as "Chief Futurist." Magic Leap, which remains in business in 2023 without having released a mass consumer product, has raised billions of dollars from venture capitalists lured by the promise of a new technical approach capable of projecting a more powerful illusion into real space. The company's highly successful 2015 demo offered the amazing spectacle of a huge three-dimensional whale dramatically splashing down in an elementary school gym where children—not wearing headsets—sit astonished (see Figure 4). This is, of course, an impossible effect and not in keeping with the headset-based experience they were actually building. As anticipation grew from the spectacle of the concept video, the company avoided describing any particular application it intended to deliver. The internal story is no doubt very complex, but

the failure of Magic Leap could have been predicted from the disconnect between fantasies of spectacular immersion and a lack of mechanics of interaction.

By contrast, a successful application for the HoloLens was RoboRaid (see Figure 5), in which the headset has the doable task of mapping a virtual effect to a blank wall in the space of the interactor, something that can be seen in its entirety from a suitable distance. The wall seems to crack, and whimsically drawn invaders come at the interactor, who has a simple point-and-click device for zapping them.

Figure 5: Microsoft HoloLens RoboRaid 2016

Source: Screenshot from https://youtu.be/Hf9qkURqtbM

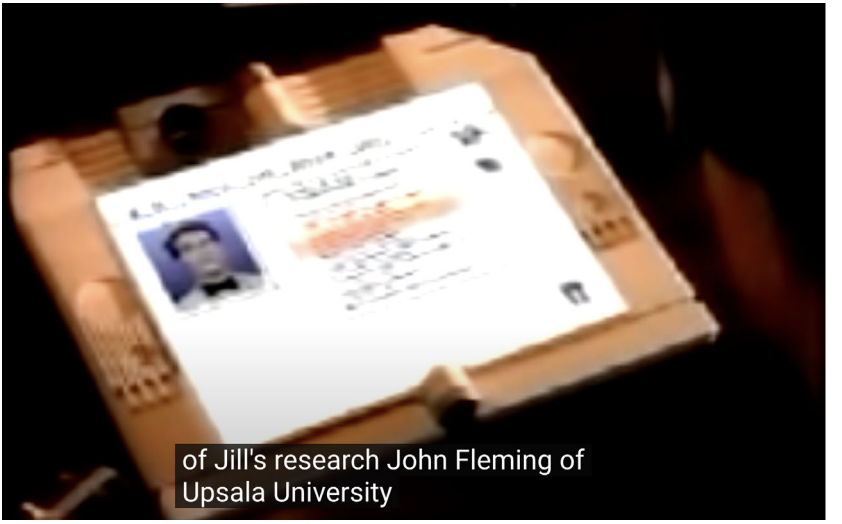
Figure 6: Niantic Pokémon Go 2016

Source: Screenshot from gameplay by J. Murray

Like the wildly popular POKÉMON GO application of the same era (Figure 6), which ran on the limited displays of smartphones, the size of the virtual creature and the simplicity of the gesture (shooting a missile or 'collecting' the Pokémon by essentially taking its picture superimposed on the real world) provides an appropriately transparent interaction.

The truly magical illusion of a fanciful creature in real space is created because the interaction matches the modest, specific affordances of the actual technology. Interaction design has replaced spectacle. I have called this focused work "inventing the medium," and noted that it is a collective effort and it involves utilizing known media conventions and inventing new ones.[4] There is no way to shortcut this process because it is iterative as platforms mature to serve emerging genres. The first vocalizations of hominids did not mark the invention of a language. The invention of the motion picture camera was not the same as the invention of the movies, which is based on a 'language of cinema,' which demands editing and closeup lenses and acting innovations and new meanings for visual juxtapositions like 'establishing shots.'

Figure 7: Apple's "Knowledge Navigator" concept video 1987



Source: Screenshot from https://www.youtube.com/watch?v=umJsITGzXd0

4 Cf. Murray, Janet H.: *Inventing the Medium: Principles of Interaction Design as a Cultural Practice*, Cambridge, MA: MIT Press 2012.

The emptiness of the demo videos for Meta can be compared with another futuristic concept video, Apple's "Knowledge Navigator" of 1987 (see Figure 7).[5] The Apple video is fanciful and unrealistic in many ways, but it is built around a very specific set of tasks within one master user scenario, and it proposes a specific interface for performing those tasks. A professor is preparing a lecturing which requires him to look up scientific journal articles, manipulate data, video conference with a colleague in another country, and screens all on a single tablet-like instrument. All of this is mediated by a servant-like digital assistant with a bowtie who also fends off phone calls from the professor's mother. Despite the absurdities and cultural gaffs of the personified assistant framework and the irritating arrogance of the professor, the basic concepts of the video are impressively timeless. As a vision piece, it is a good guide to the next decades worth of innovation in platforms and applications because it is focused on a task that fits the affordances of the medium, though they will later take the form of Google searches and Zoom calls.

By contrast, Meta's Metaverse demo videos are replete with confusing animations and devoid of specific tasks. There are somersaults and levitations, rides through cluttered landscapes, and mockups of avatar-based corporate meetings, but none of them offers a persuasive case for doing something meaningful that improves on the opportunities of the actual physical world or existing technologies.[6] The depiction of Zuckerberg's own avatar opened him up to considerable ridicule on social media. The roll-out showed little evidence that Meta/Facebook was connecting mixed reality with real-life problems any better than they did when Zuckerberg notoriously offered an offensive combination of 'product promotion' and 'disaster tourism' after the 2017 hurricane disaster in Puerto Rico.[7]

By 2022, there were some more reality-based promotional videos on the site, built on the commercially available Quest VR headsets (built by the Oculus team

5 Cf. Mac History: "Apple Knowledge Navigator Video (1987)." *Mac History*. March 4, 2012. YouTube video, 5:45, https://www.youtube.com/watch?v=umJsITGzXd0

6 Cf. Zuckerberg, Marc: "The Metaverse and How We'll Build It Together. Connect 2021." *Meta*. October 28, 2021, YouTube video, 01:17:26, https://www.youtube.com/watch?v=Uvufun6xer8

7 Cf. Solon, Olivia: "Mark Zuckerberg 'tours' Flooded Puerto Rico in Bizarre Virtual Reality Promo," *The Guardian*, October 9, 2017, https://www.theguardian. com/technology/2017/oct/09/mark-zuckerberg-facebook-puerto-rico-virtual-reality#:~:text=Mark%20Zuckerberg%20'tours'%20flooded%20Puerto%20Rico%20in%20bizar re%20virtual%20reality%20promo,-The%20Facebook%20CEO's&text=A%20cartoon%20version%20of%20Facebook's,disaster%20tourism%2C%20part%20product%20promotion

acquired by Facebook in 2014). One showed a bicyclist gathering a team from disparate locations for a virtual race. The riding of a bicycle in a virtual landscape is a staple of screen-focused exercise equipment, as is the internet-enabled synchronization of sessions with multiple gamers or bike-riders. Another persuasive application on the site was the convening of Parkinson's disease patients for ping-pong matches, using VR to expand their range of motion.[8] These demonstrations work because there are actual target users, simple demands on the interface, an existing platform with specific affordances, and, very importantly, because they build upon the framework of a game.

The game framework is, of course, key to the coherence of these applications, as it is to POKÉMON GO and ROBORAID because games restrict expectations from "anything you can imagine" to a very limited and carefully ritualized set of actions. Games give designers a way of evaluating whether or not what they are building works. Do the players know what to do? Can they win? Do two players have the same understanding of the state of the game? Games, in general, are excellent frameworks for synchronizing human/computer interactions because they make human responses highly predictable and allow computer systems to be reliably responsive. People gathering to play sports online within very limited rule structures (e.g., ride this bike over this shared virtual path; send this ping-pong ball over the net within the fixed boundaries of this shared virtual table) fit this pattern. By contrast, the card game in the 2021 Metaverse demo is just set decoration, an excuse for the group to gather around a virtual table but disconnected from the spotlighted magical interactions of somersaulting avatars.

What makes empty demos so appealing? The Magic Leap apologists, like other Silicon Valley entrepreneurs, often rebutted skepticism with the famous remark of science fiction writer Arthur C. Clarke that "Any sufficiently advanced technology is indistinguishable from magic."[9] This adage does capture the excitement and wonder of the changes brought about by the digital revolution in processing speed, capacity of storage, miniaturization, and programming virtuosity, bringing us space exploration, word processing, laptop computers, autopiloted planes, videogames, cell phones, wireless data transmission, etc. It has been hard to predict what is fantasy and what is next year's reality, but these innovations do

8 Cf. Meta Quest: "Ping Pong Parkinson | Meta Quest." *Meta Quest*. June 30, 2022, YouTube video, 2:33, https://www.youtube.com/watch?v=77jd00lQj34

9 Clarke, Arthur C.: "Hazards of Prophecy: The Failure of Imagination," in: *Profiles of the Future: An Inquiry into the Limits of the Possible*, New York, NY: Harper & Row 1962, pp. 17-32.

not arrive by magic but by documented collective processes of design and discovery. And in the 2000s, I would propose that Clarke's observation can be usefully reversed: "Any sufficiently desired magic is likely to be mistaken for a real new technology."

Meta's announcement of an impending Metaverse with the change of name for the global social media giant Facebook and the accompanying huge financial investment set off an international conversation about the potential delights and disasters that the Metaverse might bring. As an academic expert, I was asked to be on panels and interviewed by media sites, and I found myself repeatedly reminding interviewers that "There is no such thing as 'the Metaverse.'" The more people talked about it, the more money was invested in it, the more it took on the power of a globally shared hallucination. The effect, I pointed out, was similar to the delusions that crypto-currency was based on something of value. It was the seduction of wish-fulfillment fantasy dressed up with technological jargon. It was a blank canvas for projecting fears that were displaced from actual dangers in the current social media world, such as Facebook's lack of action against democracy-endangering and medically lethal disinformation. We are very ready to believe in magical effects when they are accompanied by hand-waving about technical breakthroughs and when they chime with our deepest wishes and fears.

There seems to be a repetitive cycle in which overinflated claims for a magic technology create unrealistic expectations, which go unmet, discouraging investment in the actual slow-growing medium of VR or AR, until the next wave of technological hand-waving invokes the same volatile mixture of polymorphous desire wedded to impatient greed. The promotional media are telling as a clue to the ratio between design thinking and wishful thinking in the company's agenda. For example, a staple of the corporate promotion of magical digital illusion is a large sea creature that appears superimposed over the real world (for mixed or augmented reality) or threateningly close in a VR application. The spectacle carries the day, creating excitement even without any indication of interaction. But when these big images are delivered inside a headset, they lose their charm when all you can do is look at them. The power of the spectacle lies in the novelty of the new headset or proposed magical platform—but novelty grows old very quickly.

The cycle went particularly quickly in the case of Meta's investment in the Metaverse, with the collapse of expectations and the withdrawal of investment coinciding with the rise of a new focus for magical expectation: 'sentient' chatbots. In spring 2022, a Google employee, Blake Lemoine, told the *Washington*

Post that he believed an AI system he was charged with testing was now sentient.[10] The claim was fanciful, and Lemoine was fired, but a year later, the delusion became more general when the public was able to access the Large Language Model AI chatbot, Chat-GPT. Although many computer scientists explained that the program had no knowledge of the actual world,[11] its ability to mimic the rhetoric of human discourse, from rhyme patterns to scholarly articles, made it an eerie simulacrum of a human conversational partner.

The same fear of missing out on a new technology, the same assumption that something imaginary was actually realized that had fueled the Metaverse bubble now attached itself to the prospect of human-level intelligence and even sentience in computer programs. This is an aspiration with a history that goes back to the very beginnings of the modern computer. As early as 1943, Alan Turing and Claude Shannon were imagining an electronic "brain" that could prove its intelligence through chess playing.[12] By 1950, the year of the first realized actual modern digital computer, Turing published his famous paper proposing an adaptation of a gender-based "Imitation Game" as the touchstone for achieving human-like intelligence in the machine.[13]

It is significant that from the dawn of computer science, games were proposed as the testing ground for human-like intelligence in machines. As I have argued elsewhere,[14] games have a special role in the history of media because, our delight in synchronized behavior—the core pleasure of gaming—underlies all media invention. We know, for example, that in infant development the emergence of language is preceded by games like peek-a-boo, and other ritualized and joy-inducing behaviors between the baby and the family member or other responsive person.

10 Cf. Tiku, Nitasha: "The Google Engineer Who Thinks the Company's AI Has Come to Life," *The Washington Post*, June 11, 2022, https://www.washingtonpost.com/technology/2022/06/11/google-ai-lamda-blake-lemoine/

11 Cf. for example, Marcus, Gary: "How Come GPT Can Seem So Brilliant One Minute and So Breathtakingly Dumb the Next?," *Substack: Marcus on AI*, December 1 2022, https://garymarcus.substack.com/p/how-come-gpt-can-seem-so-brilliant

12 Hodges, Andrew: *Alan Turing: The Enigma*, New York, NY: Simon and Schuster 1983.

13 Cf. Turing, Alan: "Computing Machinery and Intelligence," *Mind*, no. 59 (1950), pp. 433-460, http://www.loebner.net/Prizef/TuringArticle.html

14 Cf. Murray, Janet H.: *Inventing the Medium: Principles of Interaction Design as a Cultural Practice*, Cambridge, MA: MIT Press 2012; Murray, Janet H.: "Toward a Cultural Theory of Gaming: Digital Games and Co-evolution of Media, Mind and Culture," *Popular Communication* 4, no. 3 (2006), https://web.archive.org/web/20160305151448id_/http://homes.lmc.gatech.edu/~murray/PC0403_Murray.pdf

Developmental psychologists refer to this stage of development as the creation of a joint attentional scene, a common focus of interest.[15] And the motivation for focusing attention on the same actions and items and sequences is the intrinsic pleasure of synchronizing our behavior with one another, which provides evidence of the presence of other minds that share a common perceptual and social world with oneself. This pleasure forms the basis of complex social patterns, including the invention/acquisition of language—the association of vocalizations with entities and actions in the external world and eventually with the feelings and concepts generated subjectively by lived experiences. All media reflect our delight in sharing the experience of consciousness, of creating the 'shared attentional scenes' that are the basis of games. The paradigm is even stronger with computers, which have been constructed as logical 'thinkers' and potential companions from the beginning of the digital revolution. Computational artifacts, unlike earlier media forms, can represent the opponent (or teammate) as well as the gameboard. And when they respond to us in plausible human language, the illusion of companionship becomes all the stronger.

How do we defend against the credulity we are all vulnerable to because of our deeply rooted longings for magical gratification and connection? We can remember that the activity of inventing a medium is a collective effort of establishing conventions and genres, and that this effort cannot be short-circuited by the excitement of early spectacle presentations. The test of a new application is the interaction pattern. And games, with their very specific interaction patterns, can be a fertile ground for the growth of viable conventions that will lead, not to a magical Metaverse, but to more coherent and functional AR and VR applications.

A good example of magical powers that have been productively instantiated by specific gameplay into a coherent, repeatable convention is the Gravity Glove in HALF-LIFE: ALYX (2020).[16] The Gravity Glove adds a magical impetus to hand gestures in virtual reality. For example, it causes something you reach for to leap into your hand. This corresponds to our magical wishes for telekinesis, our Jedi knight power to control objects beyond our reach, and it also suits the affordances of gesture tracking in current platforms. The Gravity Glove provides a simple mechanic for this effect and operationalizes it with an appropriately ritualized gesture that synchronizes input through the VR controller with the behavior of the virtual target object. Because it works so well, the mechanic has been generalized into a

15 Cf. Tomasello, Michael: *The Cultural Origins of Human Cognition*, Cambridge, MA: Harvard University Press 1999.

16 Cf. PC Gamer: "We Love Half-Life: Alyx's Gravity Gloves." *PC Gamer*. March 25, 2020, YouTube video, 3:08, https://www.youtube.com/watch?v=g_PQB6JRlIU

public 'asset' in the Unity store, a property that can be attached to objects in any Unity-based VR game. It has moved from a cool feature of a single game to a potentially robust and ubiquitous convention of the VR medium. When we create a shared convention like the Gravity Glove, we are expanding the space of shared attention between human and machine and contributing to a shared language of expression within an evolving medium.

The Knowledge Navigator exemplifies a useful concept video, which may get the individual mechanics wrong but correctly identifies a large design space of meaningful tasks suitable for further development. The Gravity Glove is an example of a specific small but generalizable convention of interaction, a building block of design in virtual space. In order to create an actual 'Metaverse' or 'Holodeck,' we would need to establish the real tasks worth creating and then set about the hard work of building up the platforms with specific building blocks of feasible interaction design. We create a new medium application by application, convention by convention, in response to specific tasks performed by actual interactors. We need a very specific and limited magic, which is only coherent within the greater collective enterprise of building up meaningful genres of representation. At the moment, we do not have a 'Metaverse,' but we do have VR and AR and 'mixed reality' platforms that can continue to co-evolve with the creation of specific applications.

Corporate leaders will likely repeat the cycle of grandiose expectations leading to disappointment, with periods of windfall funding followed by funding withdrawals in waves of waxing and waning delusional excitement. It is good for designers, educators, and scholars to remain detached from the immediate cycles and focus on the long-term possibilities of the medium. In the end, it is only the design of specific meaningful applications that can yield the transparent conventions that will translate the inchoate desire for magical gratification into a stable and expressive new medium of representation.

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GAMES

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