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The Prophetic Metaverse of "Snow Crash"

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“The metaverse is having a moment,” wrote Casey Newton in July of 2021. The project to create a shared virtual world that Mark Zuckerberg recently called an “embodied internet” had been growing for years. Advocates believed that the technology and infrastructure needed was finally available, and Zuckerberg wanted his company to be the leader in realizing this new world. The announcement of the rebranding of Facebook to Meta arrived in October of that year, in the midst of criticism about how the social network failed to manage misinformation on its platform. Although Zuckerberg denied any connection to the news cycle, there were important omens in those allegations that were predicted in the very novel that the optimists were using for inspiration. Those dark prophecies, first alluded to by Neal Stephenson in his novel, *Snow Crash*, speak of how virtual reality would affect the way humans interact both because it is a medium and because that medium is controlled by those who built it. That is certainly too vague to be useful, so let us step back a few decades and follow the trajectory that led to *Snow Crash*, the novel that coined the term Metaverse^[1] and described the three-dimensional, multi-sensory virtual experience that tech pundits are so keen to create.

The internet arose from US Department of Defense research in the post-war period. Initially, it was closely associated with telephony, but as it spread to industry, it went beyond voice technology to provide a distribution network that could encode, transmit, and decode many types of information. Early terminals displayed green or amber text on a dark background, and access was limited to the military, financial institutions, research teams, and those in higher education. With the popularization of visual operating systems by Apple in the 1980s and the explosion of the World Wide Web in 1994, a graphical means of interacting with that information spread around the globe. Going “online” became the goal of retailers, entertainers, and individuals throughout the early 2000s. Today, a company without a website can be at a serious disadvantage to competitors.

The earliest versions of online worlds were text-based “multi-user dungeons” or MUDs. These games allowed multiple, simultaneous visitors to explore mazes displayed with text symbols on terminals but developed into much more sophisticated graphical versions written for PCs and home consoles in the nineties. When Stephenson was researching and writing *Snow Crash*,

networked versions of 3D games were not yet a reality, but the idea of a visualized cyberspace with machine-brain interfaces was already popular in science fiction literature, such as in William Gibson's 1984 novel *Neuromancer*. Those imagined worlds highlighted the need for higher speed and broader availability on the network side, and new devices on the consumer side to display three dimensions in an immersive way. This was typically imagined as some form of visor or glasses, data gloves, and other sensory devices, if possible.

It sounds like a movie plot until we recall that this was a chilling prophecy of the strategy that Meta, Google, Twitter, and other major media companies follow today.

Early attempts at developing consumer-grade headgear by Sega and Nintendo in the nineties led to issues with nausea, disorientation, lagging, and pixelation, but advances in the technology have exploded in the past few years. Facebook's purchase of the VR headset company Oculus in 2014 was typical of the increased interest in the technology among gamers and media companies. Hyped by CG-heavy movies like *Johnny Mnemonic* (1995), *The Matrix* (1999), and *Ready Player One* (2018), the promise of wearing a lightweight headset with stereo speakers and a microphone to experience a virtual world has become the norm among a significant portion of the population. The race is now on to improve network speed and access, and to reduce headset price while improving the experience.

Placed within this context, Stephenson's description of the Metaverse is both unsurprising and prescient. It is unsurprising because it is much less an origin story of shared, virtual worlds as a culmination of the dreams and predictions that had been circulating in research labs and game companies for decades. It is prescient because *Snow Crash* has a lot to say about how the metaverse will play out in human society, and much of it is alarmingly accurate. It is as much a testament to Stephenson's grasp of human nature as it is to his ability to weave a compelling tale.

Snow Crash is a dystopian sci-fi novel told in a darkly comedic style. Its fast-paced, present tense narrative follows Hiro Protagonist, a pizza delivery driver whose name and occupation immediately telegraph Stephenson's mockingly self-aware attitude toward his hyperbolically imagined future world. Although the geopolitical disposition is not intended to paint a realistic vision, he is meticulous in his description of how various technologies operate and how they are used.

Hiro loses his delivery job in the first chapter of the book, but through this we are introduced to his past as a legendary programmer deeply involved in the creation of a virtual online world called the Metaverse. His avatar—his three-dimensional likeness in the Metaverse—is immediately recognized by many when he logs in and visits the Black Sun, a famous but selective virtual bar built and frequented by him and his former colleagues. Hiro's programs give him privileged access to information and allow him to interact with elements of the Metaverse in exceptional ways.

The plot follows Hiro and the teenage skateboard messenger, YT, as they become embroiled in a plot to spread the deadly drug Snow Crash^[2] that exists in both a physical and a virtual form. The story is wildly complex, involving cynically-named sovereign suburbs such as Mr. Lee's Greater Hong Kong, the diminished, overextended United States Federal Government, and the Mafia-run Nova Sicilia pizza chain. It takes us through diverse themes such as violence against indigenous peoples, diversity and representation in the programming world (Hiro

himself is of African American and Asian descent), and the philology and mythology of ancient Sumer.

Teasing out the details of the mystery is not as interesting as exploring two of Stephenson's most striking characters. The first is Juanita, Hiro's one-time girlfriend who participated in the early development of the Metaverse. As the only female programmer among a group of males jockeying to build their fame, she is stereotypically the only one interested in facial expressions on avatars. Predictably, the men thought this to be largely a waste of time, but of course it became the most important aspect of communication in the Metaverse.

The other is L. Bob Rife, an entrepreneur who has amassed control over most of the world's fiber optic network that enables global communications generally and the Metaverse in particular. Rife is obsessed with the idea that programmers are the only technicians who are allowed to take their tools home with them every night—their knowledge. This leads him into improbable surveillance schemes, cultic religion, and mystical incantations in an effort to control the experts on which his technologies rely. Ultimately, it is Rife's megalomaniacal desire to control the world that lies at the heart of the Snow Crash drug and virus, and he is every bit as much a caricature as the fictional world he inhabits.

Juanita credits her grandmother's perceptiveness of body language and tone of voice for inspiring her work on facial expressions. After all, the goal of the Metaverse, much like that of *The Matrix* that followed seven years later, is to create an idealized virtual world that is indistinguishable from the real world—or at least immersive enough that participants will not mind the gaps. Its creators strive to make it transparent enough that it is no longer experienced as a medium, but immediately. Juanita is the only programmer among the creators of the Metaverse who seems to understand that non-verbal communication is critically important, a conceit that seems unbelievable only until we realize that current social media apps were restricted to text communication before we built networks fast enough for video. It would be unrealistic to assume that video alone could close the communication gap, particularly with current restrictions on size and quality. Hence, we build asymptotically toward realism.

If Hiro and his programming colleagues are interested in a minimal level of believability, Juanita stands as the opposing voice that recognizes, "No matter how good it is, the Metaverse is distorting the way people talk to each other."^[3] Part of her claim certainly involves the lack of transparent non-verbal communication, but another, very significant part of it is the facades that people use to interact in the virtual world: there is a tendency to pose, to decorate one's avatar, to be seen in the right places, to associate with the right people. These behaviors cannot be dismissed because they have analogs in the real world; in fact, they have to be highlighted precisely because they are amplifications of real-world issues that we already consider fraught. The enhanced effect of such behaviors serves to diminish human communication beyond what we consider normal and, in spite of the strategies that were developed to minimize miscommunication and deception, Juanita asserts that these barriers are part of the nature of the virtual world. She tells Hiro, "You and I are the only two people who can ever have an honest conversation in the Metaverse."^[4] We are not certain if that is because they have previously dated or because they are both knowledgeable about the inner workings of the Metaverse and more aware of the issues, but the point is still relevant.

In addition to the limits inherent in the technology, *Snow Crash* repeatedly visits the realities of access to the Metaverse. There are better and worse devices (computers, glasses), connection speed limitations, and more or less sophisticated avatar software that dictate the quality and frequency of participation. Some characters, such as YT, spend little to no time in

the Metaverse, though we assume that they could participate more if they wanted. Others, such as the poor of the world who accumulate around L. Bob Rife's private yacht in a massive raft of crime, decadence, and poverty, have no ability to participate. Early adopters have the best "virtual estate" near the brightly lit central road, but as this space becomes crowded, they must build further back or down the road, limiting their visibility.

The twin barriers of distorted communication and limits to access should sound disappointingly familiar. Twenty-five years ago, we heard promises about the Web as a great equalizer in which race, age, sex, religion, and disability would become irrelevant in the marketplace of ideas. These were largely never realized. The inability to keep large groups on topic, civil, and welcoming was recognized by moderators of newsgroups long before modern social media introduced the intricacies of likes, followers, selfies, and video. Similarly, the lack of access to the right equipment, fast and stable internet access, and sufficient time to craft one's online presence quickly marginalizes the majority of voices. While optimists point to the possibility of anyone breaking through these barriers, the overwhelming probabilities favor the privileged, as surely as they do for standardized tests and mortgages.

Enter L. Bob Rife, the entrepreneur who owns the means by which the Metaverse, the place where the cool kids hang out, reaches every living room and pair of VR goggles. Rife is the parody of the greedy capitalist who couches his bid for more market share in the language of compassion and access. We discover that Rife's plan is to speak directly to the preconscious parts of the human brain, allowing him to program people in the same way that coders program computers. It sounds like a movie plot until we recall that this was a chilling prophecy of the strategy that Meta, Google, Twitter, and other major media companies follow today.

True, contemporary marketers do not make drugs or viruses like Snow Crash. They want our attention, and their algorithms are designed to capture and hold it by giving viewers more of the stories, videos, and images that they come to crave. The ability to craft individual engagement is an exponential expansion of the subliminal effects that mid-century print advertisers chased and that came to dominate successful television commercials. Instead of pitting our critical faculties against advertising departments, we now have to contend with machine learning based on instantaneous feedback and the historical data trends from millions of viewers. The carefully curated front page of print newspapers has been replaced by the mass individualization of news feeds, video reels, and stories, each automatically tailored to bring its viewer more of the kind of entertainment that can distract and engage for hours.

What media CEO would not want to be in Rife's shoes, owning not only the means by which the metaverse is brought to the masses, but engaging them with a sufficiently enticing experience that they would never want to leave? It would involve creating not only the platform on which these experiences could be had but making sure that the access and technology were also available. It is easy to imagine this goal clothed in the best intentions and laundered through the promise of transparent technology. It is equally reasonable to think that the builders of such technologies would claim they are creating a utopian world with a new economy and equitable participation. What is hard to believe is that the social interactions or marketing strategies of any virtual world would be somehow different from what we see happening online today.

New York Times reporter [Kashmir Hill](#) shared her experience in Meta's Horizon Worlds in October of 2022. Her account reads like a refreshing version of the typical experience in current social media apps: the possibility of meeting people from all walks of life, from around the world. These encounters are "spontaneous" and, she says, without "the algorithm"

dictating the meeting. Yet there are also underage visitors, trolls, and conversations that escape the moderators. Will Meta be able to supervise most interactions, control stalking, and keep its hands clear of algorithmic influence? In the unlikely event that Meta achieves these goals, we should still expect the creation of darker virtual worlds where none of these rules are respected, and we should still expect the same kinds of psychological abuse and technological crime that we see right now in social media. There is no evidence that would convince us the metaverse would play out any differently, despite Zuckerberg's claim that it doesn't have to be that way.

Instead, we ought to ask ourselves, why do it in the first place? Among some, there is a desire to create and to realize what is in many ways a technical and artistic challenge. For others, there is entertainment value—virtual 3D games that involve movement and immersion. It is also the next level of encounter in social settings, enabling conversations with old and new friends separated by distance in a novel way. These are the positive and innocuous benefits that the Rifles and Hiros of the world cite. Yet those goods cannot conceal the darker motives behind owning the platforms on which virtual worlds are built and deploying the addictive technologies that engage and eventually monetize attention. Nor does being a hero in the Metaverse obscure the facts that Hiro lives in a storage unit, struggles to find gig work for the CIA, and has no real relationships or prospects for a fulfilling adult life when the novel opens. Deploying the metaverse will require billions and will impose new costs on participants. None of that wealth will address the concrete issues experienced by individuals and communities.

The only way to resolve poverty, lack of opportunity, conflict, feelings of depression, isolation, and despair, and the myriad other problems that face us today is by engaging and collaborating with those around us in the real world. We can and must participate in distributed communities. We need the benefits of leisure and entertainment. However, we first need to answer serious questions about how much we are willing to expend on projects that are primarily designed to make media companies wealthy. To the extent that we sink our time and money into the diversions of virtual reality, we reduce our investment in our immediate communities and urgent problems. Given that there will be a reckoning for every careless word uttered (Mt 12:36), now is the time to intentionally decide how much of our attention will be given to the simulation of reality and how much we choose to attend to the real world.

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[1] The Metaverse is the proper name for the virtual world of *Snow Crash*. The metaverse is the generic term used by modern technologists and pundits to describe the realization of such a virtual world.

[2] *Snow Crash* is the proper name of the drug and computer virus after which the novel was titled.

[3] Neal Stephenson, *Snow Crash* (New York: Bantam Books, 2008), 77.

[4] *Ibid.*, 80.

