

**Who's That, What's That:
Assessing Public Perception of the Metaverse
and Exploring Social Risks for Marginalised
Groups**

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Abstract:

The Metaverse was first conceived of by Neal Stephenson in the novel *Snow Crash, 1992*. In recent years something that was previously purely science fiction is nearly part of our everyday reality. Companies like Meta are consistently pushing production of the Metaverse forwards - a virtual 3D world hosting users in a perpetual environment. In the future, they expect the Metaverse will become as natural and familiar a concept to people as the World Wide Web and the Internet. However, there has been a considerable lack of knowledge and analysis of audience reception. Particularly, how socially marginalised groups - such as disabled people and those from disadvantaged socioeconomic backgrounds - have different perceptions than the mainstream. Despite developers paying attention to the technology (AR and VR) necessary to create the Metaverse, they have shown less mind to the concerns and aspirations of the people accessing it. For example, barriers may contribute to long-term detriments to underrepresented groups, including the digital divide, should the Metaverse become standard technology. Literature such as Glendinning's *Notes Toward a Neo-Luddite Manifesto, 1990* suggests abandoning the Metaverse altogether in the name of wellbeing. While principled, this course of action is naïve considering the consistent growth and investment the Metaverse projects are experiencing. In this paper, I assess how adopting the Metaverse will affect different sub-groups of society by analysing barriers to participation through a literature review of secondary sources. I argue that there is a dire need to quantify current public perceptions and recommend a future research agenda that includes conducting interviews and surveys that are then reviewed via trend analysis to facilitate further dialogue.

Introduction:

The Metaverse is a new method of social communication using a 3D virtual environment. Users interact with each other within a perpetual and persistent computer-generated environment. Some people make a case for these virtual worlds to be designed to exploit augmented reality (AR) by combining aspects of the digital and physical worlds. Everyday examples of AR include using Pokémon GO and Snapchat games and filters. However, when idealised, "Metaverse" describes an all-consuming sensory experience based entirely on virtual reality (VR). The latter is the understanding I intend to explore and develop; a seamlessly independent, universal, and immersive virtual world facilitated by physical technology (such as VR headsets). This new technology gives users previously unseen liberty on shared networks. However, this new experience also risks reinforcing existing concerns for marginalised communities online.

Marginalised groups are a concept within sociology used to describe a community which coexists with but is subordinate to a more dominant group. Part of this experience likely includes discrimination and exclusion (social, political and economic) because of unequal power relationships across economic, political, social and cultural dimensions (*NCCDH, 2022*). Due to socioeconomics and capitalism, unequal access to opportunity will exacerbate the digital divide.

Examples of concerns include the inaccessibility of banking equipment and the increased risk of already present virtual hate crimes. I propose that while mass use of the Metaverse provides an opportunity to create new business and social opportunities, there are potential risks to those left behind that need to be explored.

Technological algorithms learn from data collection, but this data is collected from only targeted (and generally mainstream) groups. Only 21% of Silicon Valley executives are female - and even fewer are CEOs (*Gender Diversity Survey 2020, Fenwick & West LLP*). The lack of representation in the workforce feeds into the technology and algorithms produced. In this essay, I posit that further research, e.g., through interviews with disabled people and people from marginalised groups, is necessary to capture the public perception of the Metaverse and consider barriers and limitations. I argue it would be beneficial to explore through primary data what people's concerns and aspirations are for this future technology. A dialogue must be created between the general public and the digital industry to relay concerns as soon as possible.

History of the Metaverse:

Despite its novelty, the Metaverse comes as a natural evolution. The late 1970s saw the first generation of social VR systems, Multi-User Dungeons (MUDs). A MUD is a computer program which accepts connections from several simultaneous users over a computer network and provides them with access to a shared "adventure game". Within the shared textual virtual environment, players can move between rooms, interact with each other and manipulate virtual objects. The structure was inspired by role-playing games such as Dungeons and Dragons. Hence players explore a fantasy setting, choosing avatars from different classes to develop skills and complete quests (*Cox, 2022*). MOOs, like LambdaMoo, are a subtype of MUDs.

In later developments came graphical MUDs (now referred to as MMORPGs, standing for Massively Multiplayer Online Role-Playing Game). As the name implies, a graphical MUD is a MUD that uses computer graphics to represent parts of the virtual world and its visitors. In 1989, Habitat was the first virtual world platform with a 2D graphical interface. Onscreen "avatars" (a term created by Habitat) represented users, and players in the same region could see, speak (through onscreen text from the users), and interact with one another. Interactions included robbing and killing, and these actions were used so frequently that the game required the introduction of authority avatars.

In 1992, Snow Crash conceptualised the "Metaverse" for the first time and describes its features. The science-fiction novel follows the story of Hiro Protagonist, as he navigates 21st Century Los Angeles after a worldwide economic collapse. In this post-apocalyptic world, people can escape to the Metaverse through goggles similar to headsets used now. A cultural emphasis is based on status; public-access terminals exist in Reality, but the grainy black-and-white avatar representation carries a social stigma. Furthermore, specific environments, such as real estate and the Metaverse club Black Sun, can only be accessed by exclusive members. The Metaverse is

experienced through a first-person view and structurally resembles an MMO. The novel explores themes of capitalism and identity representation and their consequences:

“We have a small, extremely literate power elite—the people who go into the Metaverse, basically—who understand that information is power and who control society because they have this semimystical ability to speak magic computer languages.”

Between the 90s and 00s, platforms like Second Life were created to integrate new features like client-server architecture and multimedia communication.

Published by Linden Lab in 2003, Second Life allowed people to create an avatar and lead a “second life” in the virtual world. Players could start a family, buy property, and trade in the local economy. As a precursor to the current understanding of the Metaverse, its fate offers an insight into lessons learned. Many users felt like the game had a steep learning curve, even though it was rooted in “standard” technology (a personal computer and Internet). As Metaverse developers promote the use of non-standard technology (such as VR headsets and gloves), the learning curve will only get steeper. Second Life also allowed workplaces and schools to sponsor the platform, giving students and employers exclusive areas and perks. However, if only affluent institutions can afford to sponsor opportunities like these, we end up with an experience gap between different social groups. Second Life has maintained a persistent user base since 2003, notably due to its popular virtual economy. It is still active but has not been able to capture a new audience on the same scale as the next generation of social VR environments.

Platforms like VRChat and Meta Horizon World offer sensory immersion through embodied user representation and a series of tools for online education and remote meetings. RecRoom and Virbela enable access and participation through multiple devices beyond VR HMDs, such as desktop systems and mobile applications. We are yet another step closer to a persistent, virtual world.

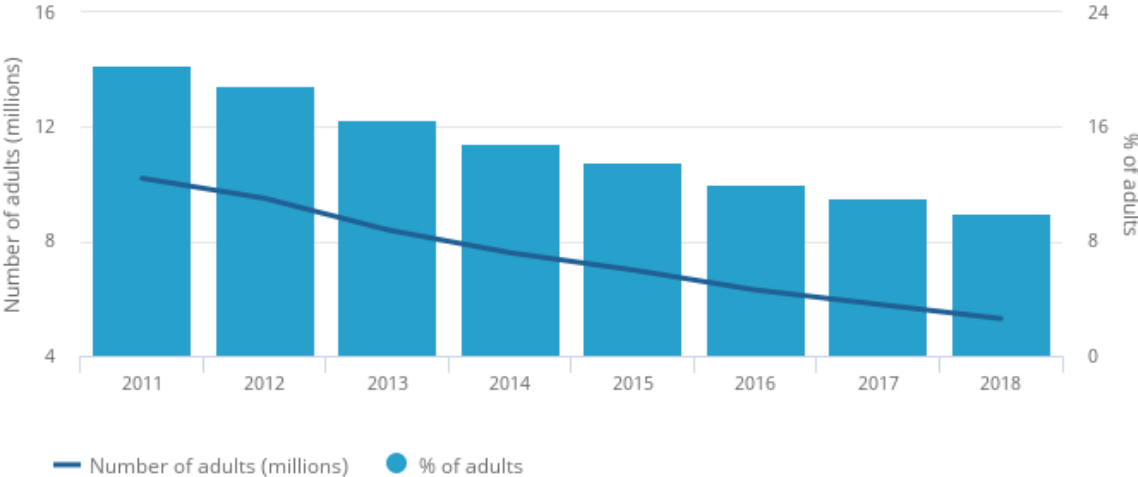
While Second Life is a more recent example of technical issues within MMOs, social issues, known problems in the non-virtual world, can also translate into the virtual equivalent. In 1993, Julian Dibbell wrote an article in the Village Voice about his experiences with LambdaMoo; “*A Rape in Cyberspace, or How an Evil Clown, a Haitian Trickster Spirit, Two Wizards, and a Cast of Dozens Turned a Database into a Society*”. The article explains how a player named Mr Bungle used a “voodoo doll” subprogramme to conduct actions that were then attributed to other users within the game. Mr Bungle spent hours describing sexual acts that characters performed on each other as well as forcing the characters to perform acts upon themselves too. The subprogram was eventually rendered useless by another user. While the interaction was entirely over text - which may seem muted to our current taste in hyper-realistic graphics - the event profoundly impacted the people involved. One victim described Mr Bungle’s actions as “a breach of civility” while, in real life, “post-traumatic tears were streaming down her face” (Dibbell, 1999). Due in part to the unprecedented nature of the event, Mr Bungle - later revealed

to be a group of NYU students on a dorm floor - faced no legal repercussions. It is feasible for the Metaverse environment to be exploited for similar incidents. However, the damage is exacerbated by the “life-like” nature of VR technology. As unregulated, unpoliced environments, they currently exist as the virtual world’s wild west. Having witnessed what has happened previously, there is no excuse for not taking precautions now. The further ethical question remains as to whose legal frameworks are responsible in the virtual world and how we can be expected to uphold them.

Business in the Metaverse:

Buying and selling resources is a repeating feature in Metaverses. Land, capital and labour are traded to represent familiar capitalist structures more accurately. However, groups from poor socioeconomic backgrounds are less likely to engage with these behaviours - and experience economic mobility - as they do not have the capital required to conduct initial investments. Opportunity exclusion in the Metaverse could be considered an extension of the digital divide.

Figure 1: The number of internet non-users has declined over time
Number (millions) and percentage of adult internet non-users, UK, 2011 to 2018



Source: Office for National Statistics - Internet Users, Labour Force Survey (LFS)

Number (millions) and percentage of adult internet non-users, UK, 2011 to 2018

Notes:

- “Internet non-users” refers to those who have never used the internet or last used it more than three months ago.

While we question whether people have access to the digital devices expected to facilitate entering the Metaverse, it is also important to consider digital skills. Even if disabled adults can afford the technology required, they may not have the experience necessary to use the equipment to its full potential. Users will still face digital exclusion because they do not know to effectively and safely navigate the Metaverse.

The Department for Education’s Essential Digital Skills Framework describes five basic digital skills that can be used to measure digital inclusion. These are: communicating, handling information and content, transacting, problem-solving, and being safe and legal online. To be proficient in each the digital skill, someone must be able to demonstrate the criteria of the section.

The virtual world exacerbates the income inequality experienced in the real world. Low-income groups may not have access to the technology needed to engage in online banking and the job market. High-income groups’ assets will only grow as they continue to buy property and media in the Metaverse. By the time low-income people gain access to the Metaverse, mass amounts of capital will be owned.

One perk of the Metaverse is the normalisation of working from home. Covid-19 isolation legislation saw the practice peak in popularity, with many firms and employees adjusting to flexible and remote working hours. This can be especially advantageous for disabled employees, no longer restrained by non-wheelchair accessible offices or chronic fatigue during 9-hour work days. 73% of disabled workers self-reported equally or more productive working from home (*COVID-19 and disabled workers: Time for a homeworking revolution?*, Unison 2020). This move improves employment access and economic mobility for a new wave of people. However, hour flexibility can quickly devolve into an obligation of always being at work. Nippert-Eng’s 1996 paper *Calendars and Keys: The Classification of “Home” and “Work”* argues for two types of workers. *Segmentors* leave work at the door, focusing on home matters when away from their job. *Integrators*, however, continue their work at home. Integrator behaviours include checking the occasional email to writing entire reports while out of work. I suggest that due to internalised ableism, disabled employees who feel embarrassed or guilty about their disabled identity are at particular risk of overworking. The United Nations define internalised ableism as the physical and emotional toll that can result from navigating an ableist world shaped for and by nondisabled people (2007). During Campbell’s research of internalised ableism, he explained that to achieve the respect awarded to nondisabled people, disabled people must “overcome” their disability - behaving in a way that supposes their disability does not affect them at all. As a

result, ableism is ingrained within our culture. Disability is, at its best, tolerated but never celebrated (*Campbell, 2008*).

As the workplace creeps into the home, what initially seemed an opportunity for social mobility, could result in overworking and stress-related illness. The Office for National Statistics (ONS) found that people working from home during the pandemic worked six hours of unpaid overtime per week. The World Health Organization and the International Labour Organization estimated that three-quarters of a million people die from ischaemic heart disease and stroke yearly due to long work hours (*Pega et al., 2021*).

Wellbeing in the Metaverse:

Outside of business, one must also consider the implications on wellbeing. Wellbeing is a combination of psychological, social and physical health concepts. When achieved, they overlap and contribute to an overarching sense of wellness (*Prilleltensky & Prilleltensky, 2003*).

Communication is a valuable tool for fulfilling these criteria. The Metaverse presents a chance to socialise in a life-like way with people across the globe, connecting niche communities and promoting self-expression. However, for disabled people, this is only true if the tools are accessible. In order to accommodate deaf and hard-of-hearing visitors, Metaverse environments would require captioning systems. Similarly, blind and visually impaired users would need audio descriptions. Access requirements must be carefully considered if the intention is to make a world rich with new opportunities, or groups will be left behind.

Even if disabled people can enter the Metaverse, their experience of everyday life is likely to be different. In modern society, we are subject to several laws and social expectations that dictate how we behave. We are deterred from stealing because we fear the consequences: being shamed by our community and receiving legal punishment. However, online spaces are harder to regulate, meaning users feel more liberated to express harmful ideas without fear. 92% of Internet users agreed that when interacting through social networking sites, people are ruder and more aggressive than their offline expressions (*Antoci et al., 2016*). Presumably, if Metaverse avatars are to be an extension of oneself, disabled people's avatars will be disabled too (e.g. a wheelchair user). This aggression is generally worse if you are a member of a marginalised community. In *Doubly Disadvantaged? Bullying Experiences among Disabled Children and Young People in England (2016)*, researchers identified that disabled people are at a greater risk of being cyberbullied than their non-disabled peers, and children who have experienced cyberbullying are eight times more likely to experience suicidal ideation (*Kaltiala-Heino, Rimpelä, Marttunen et al., 1999*). *Bullying, Cyberbullying and Suicide (2010)* identified the "always-connected" nature of adolescents' lives as a reason why cyberbullying creates such harm. If people feel they cannot escape the harassment of their identity, they are more likely to consider suicide. As the Metaverse lobbies to become a part of everyday life, what is to be said about the risks of everyday harassment?

To minimise negative experiences, marginalised users might be tempted to alter their avatars to assimilate with the majority group. This could be an equaliser in some fields by withdrawing the risk of negative biases. If every avatar in a Metaverse-based job interview is white, then the risk of racial bias is minimised. However, there is an ethical problem of reinforcing social expectations. If minorities are encouraged to hide their identity and conform to a norm, this seriously undermines the values of pride and diversity. Feeling obliged to assimilate and hide one's differences is associated with internalised ableism and internalised racism, both of which are proven to harm mental health long term (*James, 2020*). As a result, we must further consider access and identity representation for the marginalised communities.

Conclusion:

In this paper, I proposed that the marginalised community's perceptions of the metaverse will vary from those of the general public. This is because they are subject to status-specific risks such as needing access requirements and being victims of cyberbullying. If ignored, dire consequences include exacerbating the digital divide, income inequality, and in the case of online harassment: heightened suicide risks. The current developments and conceptualisations of the Metaverse do not sufficiently consider the experience of marginalised groups. Existing research is primarily secondary data. I believe facilitating an ongoing dialogue with minority communities, such as through interviews, is the best way to collect and synthesise primary data. Once interviews are conducted, responses can be subjected to trend analysis to uncover the most common concerns.

Bibliography:

Antoci, A., Delfino, A., Paglieri, F., Panebianco, F. and Sabatini, F. (2016). Civility vs. Incivility in Online Social Interactions: An Evolutionary Approach. *PLOS ONE*, 11(11), p.e0164286. doi:10.1371/journal.pone.0164286.

Campbell, F. A. K. (2008). Exploring internalized ableism using critical race theory. *Disability & Society*, 23(2), 151–162. <https://doi.org/10.1080/09687590701841190>

Campbell, F. A. K. (2009). *Contours of ableism: The production of disability and abledness*. Palgrave Macmillan UK. <https://doi.org/10.1057/9780230245181>

Chatzitheochari, S., Parsons, S. and Platt, L. (2016) 'Doubly Disadvantaged? Bullying Experiences among Disabled Children and Young People in England', *Sociology*, 50(4), pp. 695–713. DOI: 10.1177/0038038515574813.

Cox, A., 2022. *Richard A. Bartle: Multi-User Dungeons*. [online] Mud.co.uk. Available at: <<https://mud.co.uk/richard/ifan294.htm>> [Accessed 14 August 2022].

Criado-Perez, C., 2021. *Invisible Women: Exposing Data Bias in a World Designed for Men*. New York: Abrams Press.

David, E. J. R. (2013). *Internalized oppression: The psychology of marginalized groups* (1st ed.). Springer Publishing Company

Dibbell, J., 1999. *My Tiny life*. London: Fourth Estate.

Douglas, I., 2020. *Is technology making us sick?* London: Thames & Hudson Ltd.

Glendinning, C., 1990. Notes toward a Neo-Luddite Manifesto. [online] The Anarchist Library. Available at: <<https://theanarchistlibrary.org/library/chellis-glendinning-notes-toward-a-neo-luddite-manifesto>> [Accessed 15 August 2022].

Hinduja, S. & Patchin, J.W., 2010. *Bullying, cyberbullying, and suicide*. Taylor & Francis. Available at: <https://www.tandfonline.com/doi/full/10.1080/13811118.2010.494133> [Accessed August 15, 2022].

James, D. (2020). The seemingly ‘protective’ effect of internalised racism on overall health among 780 Black/African Americans: the serial mediation of stigma consciousness and locus of control. *Psychology & Health*, pp.1–17. doi:10.1080/08870446.2020.1797028.

Martin, J. (2021). Homeworking hours, rewards and opportunities in the UK: 2011 to 2020 - Office for National Statistics. [online] www.ons.gov.uk. Available at: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/articles/homeworkinghoursrewardsandopportunitiesintheuk2011to2020/2021-04-19>.

Mystakidis, S., 2022. Metaverse. *Encyclopedia*, 2(1), pp.486–497.

Nippert-Eng, C., 1996. Calendars and keys: The classification of “home” and “work.” *Sociological Forum*, 11(3), pp.563–582.

Pega, F., Náfrádi, B., Momen, N.C., Ujita, Y., Streicher, K.N., Prüss-Üstün, A.M., Descatha, A., Driscoll, T., Fischer, F.M., Godderis, L., Kiiver, H.M., Li, J., Magnusson Hanson, L.L., Rugulies, R., Sørensen, K. and Woodruff, T.J. (2021). Global, regional, and national burdens of ischemic heart disease and stroke attributable to exposure to long working hours for 194 countries, 2000–2016: A systematic analysis from the WHO/ILO Joint Estimates of the Work-related Burden of Disease and Injury. *Environment International*, 154(106595), p.106595. doi:10.1016/j.envint.2021.106595.

Prilleltensky, I., & Prilleltensky, O. (2003). Towards a critical health psychology practice. *Journal of Health Psychology*, 8(2), 197–210. <https://doi.org/10.1177/1359105303008002659>

Stephenson, N. (1992). *Snow Crash*. Milano: Rizzoli.

United Nations (2007). Convention on the rights of persons with disabilities (CRPD). Available at: <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html> Accessed: 20 April 2020