Towards a Democratic Culture in the Metaverse: An Overview of Risks and Opportunities[1]

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Introduction

Whether intended or not: When Mark Zuckerberg, the founder and CEO of Facebook, rebranded his company as "Meta Platforms" in October 2021 and introduced the term "Metaverse" for the internet of the future, it was also a warning for democracy. The term "Metaverse" was first popularized in 1992 by Neal Stephenson's dystopian science fiction novel *Snow Crash*. In this novel, Stephenson describes a virtual parallel universe in future America, where one can dive into it through computer screens, interact socially and economically with avatars, and purchase virtual houses, properties, and objects. The digital avatars can—similar to leveling up in video games—improve their status positions in the virtual world. In the novel's Metaverse, avatars can attain a higher level of social recognition and status than the humans behind them possess in physical reality. However, there is a danger lurking in the Metaverse: *Snow Crash*. This experience, which can be interpreted as a drug, virus, or misinformation, spreads and infects users in front of their computer screens through the immersive experience. In *Snow Crash*, the real world is a right-wing libertarian dystopia: the USA is divided into regional zones controlled by corporations or the mafia. The wealthy are rulers with total decision-making power, including who can move where or live where and how. There is racist and social segregation, and the power of the ultra-rich prevails. Democracy and the environment are destroyed. In contrast, the Metaverse appears as an attractive escape point. Therefore, the literary concept of the Metaverse includes warnings for the social reality: warnings about the destruction of democracy and the destructive potential of a new generation of digital immersive technolo-

1 The article is an expanded and updated version of an article first published in German (Quent 2023).

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gies, which accompany new experiential spaces and freedoms of virtual representation.

Increasingly, civil society actors (e.g., Linux Foundation, 2023) and supranational institutions (e.g., European Commission, 2023; WEF no date) are trying to shape the Metaverse. Physical reality and Web 2.0 are complemented by the possibilities of virtual immersion, particularly through extended reality technologies, 360° environments, and both abstract and photorealistic avatars. It remains unclear and controversial how the Metaverse will look, whether it will even bear that name, whether the desired level of interoperability between different platforms within the Metaverse can be achieved, and how 'social' the Metaverse will be—in the sense of allowing all users to create content equally.

Discussions about the Metaverse – oscillating between hope and concern, hype and ignorance, economy and society – are particularly notable in light of the insufficient knowledge and research available. To be able to shape the internet of tomorrow – regardless of what name it will carry or what it will look like – it is essential to consider key developments and analyze the opportunities and risks. In this regard, the following will introduce important terms, outline key technological backgrounds, and sketch some aspects of the relationship between the Metaverse and democratic culture[3]. The summary findings of this contribution are based on an analysis of academic literature, background conversations with experts from the digital economy, (social) sciences, and civil society, professional symposia, as well as on exploratory and participatory observations in various virtual immersive environments within the framework of the *Immersive Democracy*[4] project. Finally, challenges for (digital) civil society and democracy research will be identified.

3 **Democratic culture** refers to the totality of attitudes, values, and behaviors in a society that support and further develop a democratic order. A democratic culture is characterized by pluralism and the respect for human rights.

4 The contribution is based on research in the *Immersive Democracy* project, led by Matthias Quent, within the framework of the independent *European Metaverse Research Network* (EMRN). The EMRN was founded in 2022 through an unrestricted donation from Meta. Further studies on the topic, as well as an overview of partners and symposia, can be found on the website www.Metaverse-forschung.de.

Immersive Experiences

The Metaverse does not yet exist. The tech industry speculates that by around 2030, a fully operational Metaverse could become a reality. Financial motivations, in particular, are driving the development of the Metaverse forward: The consulting firm McKinsey predicts that business models related to the Metaverse could reach a value of 5 trillion dollars by 2030 – especially around e-commerce (McKinsey & Company, 2022). Many large companies are actively working to offer both physical and virtual goods within digitally immersive environments. With the increasing performance and decreasing costs of various internet-enabled devices that allow access to immersive environments (smartphones, tablets, PCs, and especially AR and VR headsets), the technological trendsetting by large companies like Apple, Microsoft, Nvidia, Intel, Google, and Meta, as well as the transfer of immersive gaming experiences from younger generations into other areas of life, it is expected that more and more people will use immersive virtual environments. Since Zuckerberg introduced the term 'Metaverse,' the number of scientific publications on the topic has been increasing. Since many developments are still taking place, definitions are only provisional and subject to change. Park and Kim (2022) propose the following understanding, based on Wikipedia:

> *"Metaverse is a compound word of transcendence meta and universe and refers to a three-dimensional virtual world where avatars engage in political, economic, social, and cultural activities. It is widely used in the sense of a virtual world based on daily life where both the real and the unreal coexist" (p. 4221)*

The Metaverse is characterized by the idea of creating a permanently existing virtual universe in which a variety of decentralized immersive virtual environments are interconnected (interoperability). Users can, as avatars, engage in activities such as trading, playing, working, exercising, attending concerts, meeting friends, traveling, or participating in education. It is also possible to create one's own worlds and conduct election campaigns or demonstrations. A central distinguishing feature from Web 2.0 is the higher degree of immersion, meaning the stronger immersion into virtual environments. Already today, millions of people regularly navigate immersive virtual worlds, particularly through various gaming environments, which are considered central drivers of these developments.

The term *Metaverse* encompasses the totality of individual virtual immersive environments. The degree of immersion depends on a variety of factors, particularly:

- **Intensity and Quality**: Extended Reality: Augmented Reality, Mixed Reality, Virtual Reality, created by the respective technology and dependent on the performance of corresponding devices (e.g., VR headsets)
- **Realism/Intensity and Quality** of the representation of physical reality (pure fantasy world, abstract, photorealistic/digital twin)
- **Interactivity/Intensity and Quality** of interaction with the virtual world (no interaction to high interaction (Social VR))
- **(A)Synchronicity/degree of temporal presence** (Asynchronous, delayed, real-time presence)
- **•Sociality/degree of interaction and quality with other users** (none to audio-visual and haptic interactions)
- **Authenticity/degree of coherence and credibility of the immersive experience**

Relatively new application areas for immersive virtual experiences include, among others, trading virtual goods (primarily NFTs) and real-world products, virtual workplaces, sports, culture, education, therapy, tourism, urban planning, media, and Social Virtual Reality.

With the promise of more intense experiences in immersive environments, comes the risk that these experiences may not only be positive but can also—intended or not—have negative individual and societal consequences. Clearly, harassment and hate speech in the Metaverse can have particularly severe effects. In particular, real-time verbal communication and new non-verbal expression possibilities through avatars challenge existing (partially precarious) methods of dealing with archived toxic content in terms of regulation, law enforcement, and counter-speech. This applies both to law enforcement and the implementation of community standards, as well as to specific services aimed at supporting affected individuals.

State of Research

The founding and development of the Metaverse, as well as democracy-related questions, are explored in literature, particularly from the perspectives of ethics (Slater et al., 2020), responsibility and sustainability (Moro-Visconti, 2022), inclusion and diversity (Zallio & Clarkson, 2022), cli-

mate consequences (Palak et al., 2023), and regulation (Rosenberg, 2022). Dwivedi et al. (2023) use the term *"Darkverse"* to summarize the darker sides of the Metaverse – such as the threat to privacy, diminished reality, identity theft, invasive advertising, misinformation, propaganda, phishing, financial crime, terrorist activities, abuse, pornography, social inclusion, mental health, sexual harassment, and unintended negative consequences of the Metaverse. Some publications formulate critical positions and concerns about a new dimension of digital surveillance capitalism, raising the issue of data privacy (e.g., Bojic, 2022; Anderson & Rainie, 2022) or warning about scenarios of violent radicalization (Bajwa, 2022). Hine (2023) highlights critical challenges associated with content moderation in the Metaverse, particularly emphasizing the complex cross-border moderation conflicts arising from inconsistent international standards. The author argues that without clear global regulatory frameworks for acceptable content norms, the Metaverse may emerge as a significant new frontier for disputes over freedom of expression, amplifying existing tensions around digital governance and online speech.

The new density of data that can be collected through immersive technologies extends beyond haptic motion information, eye-tracking, microreactions in facial expressions, voice analysis, to camera-based capture of information about the physical spaces in which users are located. German-language publications addressing the Metaverse have also increased significantly since Mark Zuckerberg's announcement (e.g., Büchel & Klös, 2022). However, empirical reports, case studies, or analytical discussions of dimensions, social and democratic consequences of aspects of the Metaverse are still rare internationally, and empirical analyses of the impact on democratic culture are virtually nonexistent.

In an analysis for the Stiftung Zukunft Berlin and the Foundation Metaverse Europe, Hermann (2022) highlights the "Lock-In Effect" (p. 3) of a centralized Metaverse as a challenge. Negative effects already known from social media could be amplified in the Metaverse, particularly fake news and filter bubbles, hate speech and polarization, biases and discrimination, mental health, consumer and data privacy, surveillance, control, censorship, and targeted advertising (ibid., p. 4). A privately-run Metaverse appears problematic for fundamental rights, political public spheres, as well as democratic procedures and processes (ibid., p. 5). Therefore, long-term European structures and companies should be established, and democratic processes and regulations should be defined and adapted at the European level. Nehring (2023), in a policy paper for the Konrad Adenauer Foun-

dation, points to the necessity of regulation and law enforcement in the Metaverse and warns that disinformation in new virtual communication spaces will appear more realistic and intense, thus becoming even more dangerous—especially through deepfakes. He therefore recommends early media literacy regarding these new spaces.

Artificial intelligence represents key technology for the Metaverse in both industrial and social segments, such as for interactions with AI-supported avatars and environmental elements, personalized advertising, recognizing behavioral patterns, regulation, when it comes to combating hate messages and disinformation, and in automated worldbuilding. It is only with the support of AI that virtual environments can be designed on a large scale with a high degree of authenticity and realism, for example, using the Unreal graphics engine. Artificial Intelligence (AI) is rapidly shaping the development of the social consumer Metaverse, creating not only promising democratic potential but also significant risks for democratic culture (Quent, 2024).

Four key areas of AI application in immersive spaces are identified and analyzed: (1) content generation, including deepfake and misinformation scenarios; (2) moderation and regulation, examining the challenges of AI-driven content control; (3) avatars and interactions, highlighting risks of deception and manipulation through virtual personas; and (4) data collection and personalization, outlining potential abuses via micro-targeting and emotional profiling. Without strong ethical guidelines, transparency, and regulatory oversight, AI applications in the Metaverse could intensify political polarization, hate speech, and radicalization—posing a significant threat to democratic norms.

Journey Through the Metaverse

It is surprising to find a lack of ethnographic and democracy-related empirical studies in immersive virtual environments, given that there are multi-year experiences with individual technologies and application contexts. This is particularly true for the context of electronic games, gaming studies, and especially for Metaverse-like games such as *Second Life* (Boellstorf, 2015) or *Minecraft* (Nebel et al., 2015). The relatively well-researched sandbox game *Minecraft*, for example, was used by 140 million players monthly in 2021 (Bergert, 2021). Viral communities have formed around the game

on YouTube and Twitch. The game is also used in historical and political education, and with the "uncensored library" by Reporters Without Borders, users from different countries can access texts that are banned in their home country.[5]

The ADL (2022) notes that discrimination and far-right ideologies are increasing in online games – including in immersive environments like *Fortnite* or *Roblox*. For example, on *Roblox*, user-generated environments can not only enhance creativity, collaboration, or self-efficacy experiences but can also motivate group-based hostility and far-right extremism. This includes environments with social Darwinist quests such as running over homeless people. Also, Nazi concentration camps and (right-wing) terrorist attacks have been recreated and reenacted in the app, according to research by Prinz (2024), even though this violates the community standards.

Weimann and Dimant (2023) identify significant potential for terrorist exploitation of the Metaverse, characterizing it as a versatile toolbox for extremist activities. They outline how virtual immersive spaces might facilitate indoctrination and recruitment, the covert planning and coordination of attacks, sophisticated virtual training scenarios, and the dissemination of disinformation. Moreover, they express concerns about the financing of terrorism through virtual economies and cryptocurrencies within the Metaverse. To mitigate these risks, the authors stress the importance of fostering robust public-private partnerships (PPP) to establish comprehensive countermeasures.

Psychological effects of VR/XR technologies are well-researched, and these technologies have been successfully used for supporting psychotherapies for several years, particularly for treating anxiety disorders. The potential of Virtual Reality (VR), especially for the therapy of anxiety disorders and depression, promoting empathy through perspective-taking, and fostering participation and cultural inclusion, has also been explored (e.g., Herrera et al., 2018; van Loon et al., 2018). VR technologies can help develop empathy for marginalized social groups and reduce mechanisms of devaluation. For education in general, immersive learning offers new opportunities (e.g., Frehlich, 2020).

Hinduja and Patchin (2024) conducted an extensive quantitative study exploring risks and negative experiences among adolescents engaging with immersive virtual environments in the Metaverse. Drawing on survey data from a nationally representative sample of adolescents aged 13–17 in the

5 https://www.uncensoredlibrary.com/de [07.07.2023].

United States, the authors found that within one year, nearly half (44.1 %) of young users experienced hate speech or discriminatory slurs, while more than a third reported cyberbullying (37.6 %) and general harassment (35 %). Additionally, the study documented significant occurrences of trolling (43.3 %), malicious obstruction or restriction of movement within virtual spaces (31.6 %), threats of violence (29.5 %), doxing (18.2 %), catfishing (22.8 %), and exposure to unwanted sexual or violent content (20.8 %). The research identified important gender differences: while boys and girls faced similar levels of hate speech, harassment, and bullying, girls were significantly more likely to experience sexual harassment, grooming, or being targeted specifically due to their gender. Consequently, girls employed adaptive strategies such as selecting avatars less likely to attract harassment and utilizing platform-based protective tools to maintain distance from potentially abusive avatars. Hinduja and Patchin also emphasize the increasing importance of AI-based solutions, which are being deployed to automatically detect and mitigate toxic behaviors, underlining the relevance of algorithmic safeguards for youth safety in the Metaverse.

McIntosh and Allen (2024) explore the emerging challenges policymakers face concerning harassment in the Metaverse, emphasizing the critical need for governmental engagement in developing effective regulatory frameworks. They highlight that policymakers worldwide are actively evaluating whether existing laws adequately address the novel harms occurring within immersive virtual environments or if new legislative categories are required. In particular, the authors advocate recognizing a distinct category of harm associated with abusive behaviors and interactions uniquely enabled by the immersive and embodied nature of the Metaverse.

Dimensions of Democratic Culture in the Metaverse

Table 1 heuristically summarizes relevant questions about democratic culture, as well as opportunities and risks concerning the development of the Metaverse. Due to space constraints, the individual aspects cannot be elaborated in detail. Overall, on the individual level, there are many opportunities, especially through educational and perspective-shifting approaches, new freedoms in developing individual identities, virtual self-efficacy experiences, and the potential to gain recognition and status in the Metaverse. It is important to note that on the individual level, all three dimensions of the known digital divide are effective: 1) unequal access (e.g.,

when acquiring hardware/headsets), 2) unequal use (e.g., entertainment vs. education), and 3) unequal outcomes (e.g., socially valuable professional connections) (Matzat & Van Ingen, 2020).

On the micro and meso levels, the Metaverse offers enabling, experiential, and resonant spaces for interpersonal communication, small groups, as well as for orthodox (particularly those around the economic, socio-cultural, and political mainstream) and heterodox communities. A distinction should be made between positive forms of participation and what is known as dark participation (Quandt, 2018).

Level	**Questions in the Context of Democratic Culture**	**Opportunities**	**Risks (Darkverse)**
Individual Level (Avatars/Users)	**Users as consumers or individuals?** Rights of avatars, recognition and advancement, identity design, security, well-being, hate, manipulation, inclusion and diversity, participation opportunities, effects of immersion on individuals.	**Overcoming barriers and boundaries** (physical, psychological, social, cultural, economic, identity), engagement, participation, resonance/effectiveness experiences, perspective change, education and information, belonging, edutainment, self-efficacy.	Digital divide, data misuse, manipulation, isolation, disinformation, discrimination, hate, harassment and digital violence, desensitization and dehumanization, radicalization
Micro Level (Communities & Social Interactions)	How integrative and participatory are the communities?	Voting, activism, organization, (transformative) participation in platforms and society, solidarity	Dark participation/toxic and radicalizing communities, polarization, tribalism, and silo thinking
Meso Level (Immersive Environments with Various Technological Foundations)	How integrative and participatory are the communities?	(Political) education & edutainment, value communication, promotion of diversity, inclusion, and participation through design	Data misuse, digital divide, manipulation, structural discrimination, cyberattacks

Level	Questions in the Context of Democratic Culture	Opportunities	Risks (Darkverse)
Macro Level (Metaverse as a Universe of Various Connected Immersive Virtual Environments)	Ownership, governance, ethics, data protection, interoperability, design, regulation	(Political) education & edutainment, value communication, promotion of diversity, inclusion, and participation through design	Digital surveillance capitalism, monopolization and control of platforms, cyber attacks, unequal distribution of wealth and power, manipulation through disinformation, undermining of state order, loss of social and regional ties, rise of populist and nationalist counter-reactions, new fears and fear narratives (e.g., in connection with transhumanism), loss of shared reality

Table 1: Questions of Democratic Culture in the Metaverse at the Individual, Macro, Meso, and Micro Levels

While democratic participation includes aspects such as promoting engagement, empathy, solidarity, knowledge, critical public discourse, and (co-)creative collaboration, dark participation, as described by Kowert (2020) in the gaming context, particularly includes hate speech, (sexual) harassment, trolling, griefing, doxxing, fake news, cheating, trash talking, contrary play, and inappropriate role-playing. The latter aspects pose unique challenges to avatar-based environments that distinguish them from traditional social media.

On a macro level, the risks to democracy, as identified in literature and expert discussions, are particularly striking. A significant issue is the one-sided control and decision-making power of these technologies by globally operating private companies. Concerns include data protection, the dissolution of social communities and shared realities, and new possibilities for manipulation—especially in connection with artificial intelligence.

Furthermore, nationalist and conspiracy-theorist actors criticize the increasing fusion of real and virtual realities under the term "posthumanism", claiming that global liberal elites aim to gain total control over humanity and ultimately destroy the essence of being human (Dilger, 2022). Technological change may therefore lead to further political polarization, particularly between (right-wing) nationalist and populist movements and the socio-cultural and technological development of globalized capitalism.

The Metaverse is likely to accelerate individualization and the formation of sub-communities within digital environments. This is evident in the nearly unlimited possibilities for avatar customization and the formation of subcultural peer groups. Companies, through the design of virtual environments, can shape frameworks for defining normality, while democratically legitimized national and supranational institutions may lose significance and influence. The potential profits of corporations stand against unpredictable social consequences.

In this schematic comparison, it is important to recognize the interdependencies between the levels—the dynamics and directions of these interactions require future research. Communities and individual content creators can actively shape the development of immersive digital environments—even through protests or strikes. Through co-creative collaboration, social virtual environments are in a constant state of change and expansion, for example, through modifications or updates.

Approaches towards participation are visible but occasionally appear precarious or even counterproductive. Beyond the risk of pseudo-participatory processes, the design of participation mechanisms in immersive digital environments can also reinforce undemocratic, plutocratic developments. For instance, on the platform Decentraland, users can vote on the development and governance of this virtual world. However, voting power depends on the amount of digital currency (MANA tokens) a user holds (Decentraland, n.d.). This means that wealthier users have more influence, violating the democratic principle of "one person, one vote", a fundamental aspect of electoral equality. This structure mirrors dystopian visions such as those depicted in Snow Crash.

To counter this, Shapiro and Talmon (2022) propose a theoretical framework and architectural blueprint for a "grassroots democratic Metaverse," conceptualized as an interconnected network of autonomous digital communities that are collectively owned, operated, and governed by users themselves. Central to their approach is ensuring democratic equality through mechanisms designed to resist "sybil attacks"—the deceptive

creation of multiple false identities aimed at distorting democratic processes. The authors contrast their proposed democratic Decentralized Autonomous Organizations (DAOs) with existing, often plutocratic, DAO models. They advocate for DAOs built around digitally verified identities, democratic rather than monetary governance (rejecting the principle of "one coin, one vote"), and transparent, user-driven constitutional processes capable of democratically adapting every component, including underlying protocols. Their vision emphasizes fostering digital social movements, cooperatives, and political entities grounded in authentic democratic participation, highlighting a roadmap for a resilient, equitable Metaverse. On the other hand, Ebner (2024) sees dangers from extremist use of DAOs.

The Metaverse could even reduce political polarization: Shelley, Schmidt, and Ette (2025) discuss the potential role of the Metaverse in addressing political polarization, drawing particularly on the arguments proposed by Bruno Maçães. According to this perspective, immersive and compelling experiences within virtual environments may enable individuals to explore and live out their ideological beliefs without imposing these views on others in the physical world. The authors suggest that by facilitating diverse and personalized realities, the Metaverse could decrease individuals' drive to enforce a shared version of reality, potentially leading to more peaceful coexistence and reduced societal polarization.

Discussion

The overview shows that the emergence of the Metaverse may amplify existing challenges to democratic culture yet simultaneously reveals significant opportunities for fostering participation and democratic engagement. While individual and interpersonal levels offer substantial potential for identity development, empowerment, and overcoming traditional social barriers, critical risks become particularly evident at the societal and macro levels. Notably, the dominance of major technology corporations in controlling both infrastructural and normative frameworks within the Metaverse poses substantial challenges to democratic principles, emphasizing the urgent need for effective governance and regulation.

At the same time, core concepts such as "democratic culture" require further theoretical clarification and precise operationalization for the Metaverse. The lack of robust theoretical grounding generates ambiguity, limiting analytical precision and practical applicability. Moreover, despite

references to dystopian narratives and existing literature, there remains a notable gap in empirically grounded research. Specifically, systematic investigations into how social inequalities might be reproduced or transformed through immersive digital spaces remain sparse. Empirical scrutiny is equally lacking regarding the actual practices and mechanisms of political participation within virtual environments. Therefore, future research must prioritize methodologically robust empirical inquiries to clarify how digital inequalities persist or evolve and to empirically measure democratic engagement in immersive contexts. Interdisciplinary collaboration among researchers, policymakers, and civil society actors is necessary to develop comprehensive insights and effective strategies that safeguard democratic structures and maximize positive potentials in shaping the future of safe immersive digital environments.

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