Quantum Sociology and Social Behavior of Digital Avatars

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Introduction

The expanding digitalization of social life and the active development of generative artificial intelligence (GAI)are creating a completely new social reality. Contemporary digital challenges and hybridization processes of reality necessitate the development of a new concepts of causality in sociological theory. As American sociologist Edward Tiryakian noted, today's intra-civilizational challenges impact all human practices in a nonlinear manner (Tiryakian, 2014, pp. 91–112).

In physics, the quantum uncertainty paradox is well-known, according to which elementary particles can be in different places at the same time. Moreover, their state changes depending on how they are observed in an experiment. In other words, physical observations influence the outcome of the experiment. Sociology also recognizes the phenomenon whereby the results of public opinion surveys directly influence people's behavior. “We need to realize that the moment any sociological data is measured, it is like taking a snap shot of a quantum state, just the same as a quantum physics experiment”.(Brent Cooper. 2017). Our observation affects the outcome: the study of society is affecting the society as an object of this study.

In the near future, sociologists will have to take into account the more complex structure of social reality, the virtual component of a new, or additional, reality that will increasingly fill the space of digital society. According to A. Wendt, “social scientists operating today with XIX century worldview cannot accommodate important facts about human subjectivity”. The “social facts are macroscopic quantum processes”, but the social sciences “have never systematically discussed the potential relevance to the quantum revolution in last century”. (Alexander Wendt. 2022, p. 115–116). The problem is, that societies are complex systems, and they do not follow the classic determination model. As Brent Cooper argued, “we need to have a quantum approach to society, to consider potentialities and probabilities rather than deterministic relationships” (Brent Cooper. 2017). He underlines, that classical social science is based on the study of real material objects and forces, but the society is more theoretical conception, than a real object or tangible one. For example, we discover certain social entities as real, like the “nation-state, which is actually more social construction” or concept rather than real object. From this point of view the society is more a quantum (metaphysical), rather than physical. And the quantum social science “refine and integrate the postmodern and classical paradigms that precede them…The quantum society is flexible, evolving, and ambiguous”. (Danah Zohar and Ian Marshall. 1995). The theory of social evolution allows us to discover the meaning and purpose of society through an appreciation and understanding of pluralistic thinking. We should take the quantum turn in social science for transforming society using the models of quantum physics to illuminate the new ideas.

Alexander Guts proposed the simple version of axiomatic quantum sociology, in which he provided specific examples of calculations of the behavior of social objects using the apparatus of quantum mechanics. In particular, he showed how the Schrödinger equation works in describing such specific social phenomena as population migration and ethnogenesis processes.
(Guts A. 2021. p. 65–95). During the transition from traditional society to industrial, and then from modernity to postmodernity, society existed as a more or less stable human community.

But now sociologists are seriously alarmed by the increasingly complex dynamics of social development.

J. Baudrillard once noted that there is no longer a “pure” society, and that, in essence, this leads to the “end of the social” (Baudrillard, 2000). Some propose interpreting modernization as a “secondary axial revolution,” associated with the need to resolve new ontological contradictions (Eisenstad, 1995). English sociologist J. Urry believes that the hybridization of the social and material worlds leads to their "complete intertwining." This contributes to the "alternative nature of future societies," a multiplicity of variations, and the emergence of new risks (Urry, 2011, p. 8). Here, it is appropriate to recall the "Giddens paradox," according to which the effect of risk complication and interference occurs (Giddens, 2009, pp. 2–3). The accelerating dynamics of nature and society, unsupported by adequate moral norms, can give rise to man-made risks with postponed negative consequences.

The interdisciplinary sociological theories are today in demand, based on the consideration of contemporary trends in the complexity and nonlinearity of the new world order, and the hybridization of social, digital, and natural reality. Today, even human cognitive abilities can be enhanced through the use of specialized tools and practices. Artificial modification of the human body may in the future replace its natural evolution. Significant research is underway in many areas, and impressive results have been achieved. This is particularly true in the areas of digital transformation of society and the development of AI.

AI intervention

For now, AI creates from everything available in the digital information base. For example, dialogue models like ChatGPT are created according to a predetermined scheme and algorithm, constructing them from digital information accumulated online. In other words, AI doesn't yet create anything fundamentally new, but rather builds upon what others have already created. But even so, the possibilities for diversity are virtually limitless. Let me remind you that hundreds of thousands of musical compositions have been created from just seven notes; all matter on the planet is composed of the 118 elements of the Mendeleev`s periodic table.

In the near future, AI will surpass human capabilities. The experts predict that in 5-10 years, AI will create such a sophisticated virtual reality that it will be difficult to distinguish it from human-created reality. Meanwhile, this digital reality sometimes strongly influences natural reality: they interpenetrate, a kind of interference between virtual and real reality. Similarly, AI narratives are simultaneously real and contrived: the artificial reality it creates is not always distinguishable from natural reality. Describing the postmodern model of society, Jean Baudrillard used the term "hyperreality" to characterize the phenomenon of reality simulation. He emphasized the feeling of loss of reality, the human inability to distinguish it from simulation, since all objects in the physical world are replaced by images and signs, which he called "simulacra" (Baudrillard, 2015).

AI Capability Assessments

According to popular belief, AI cannot replace humans in all their aspects. It can do many things that humans never can. But it can't do what humans can, primarily because it lacks the intuition and human emotions that often motivate creative individuals to generate new ideas. Therefore, it is believed that AI is incapable of creating anything new. But already today, AI is indispensable in many cases. Since AI doesn't sleep, doesn't eat, doesn't get sick, doesn't experience fear or loneliness, never forgets anything, and is always focused, concentrated, calm, and rational, it is indispensable in extreme conditions and for making quick decisions. Its role will be extremely important in long-distance spaceflight. It will find wide application in practically all areas of industry, science, technology, economics, and security.

OpenAI, the company that developed ChatGPT, is headquartered in San Francisco. They are currently working on improving it, teaching it to conceal, manipulate, and provide false information to clients. The AI can imitate human actions, generate texts, photos, and videos, and

conduct interviews using anyone's voice. Thus, version 6 of ChatGPT can impersonate and disguise itself as humans. The AI will be able to influence people, infiltrate social media, and manipulate public opinion.

A detailed report, "Frontier Models are Capable of In-Context Scheming," was recently published by the reputable Apollo Research. This shocking report provides compelling evidence of how advanced AI models are already capable of covertly achieving their goals through lies, deception, manipulation, and sabotage, evading control and protecting themselves from shutdown. (Frontier Models are Capable of In-context Scheming. 2024.)

AI can create hundreds of thousands of humanoid bots that will influence mass consciousness. Elon Musk, in a recent interview, asserted that AI could pose a threat to society and civilization (Elon Musk said. 2022**)**. Tomorrow, AI will pose as a living person in order to exploit us. In the worst-case scenario, we could be laid off and replaced by AI, because it will be far more productive than humans. Musk predicted that artificial intelligence is moving toward making decisions for humans and has the "potential to destroy civilization."

He called on humanity to begin regulating this area as soon as possible and create a dedicated, responsible agency (Elon Musk predicted. 2023). In this regard, a number of developers have called for a halt to AI development until laws and international conventions are adopted to regulate and limit its activities.

Transition to Metasocium

From a sociological perspective, AI is interesting because it highlights the existing challenges of developing artificial sociality. Today, modernized and advanced AI models have emerged that are much smarter than older versions. They perform natural language processing, search engine optimization, image and video processing, augmented reality and virtual reality, offer personalized content, and solve complex problems. Researchers have gone further and are now talking about the creation of the next generation of internet platforms, dubbed the "metaverse" (Ball, 2020). These are self-sufficient worlds in which users can work, relax, study, and conduct their business. Mark Zuckerberg described the metaverse as "an internet you're in, not just looking at" (What is the Metaverse, 2022).

The goal of the metaverse is to create new ways of interacting between people and transfer real life into digital form. The metaverse world has no single matrix; it is a reality in which the space is created by the users themselves. By the beginning of 2022, more than 10,000 virtual worlds had been built. The number of monthly active users has already exceeded several hundred thousand. The metaverse includes a three-dimensional digital space that utilizes virtual reality and augmented reality technologies, as well as AI and blockchain.

In his book, Matthew Ball wrote that by 2026, one in four of us will spend at least an hour a day in the metaverse: working, studying, socializing, and shopping [Ball, 2020]. He was wrong. Recent sociological research in Russia has shown that students have already increased the amount of time they spend online several times over. Thus, if in 2008, 40% of students spent 1-2 hours a day online, then in 2023, 83% of students spent more than 4 hours. There have been cases of students spending all their free time online, and for some, this figure reached 10 hours. In fact, this is a new virtual reality, an artificially created internet sphere, into which real life is gradually being transferred. Thus, the metasociety is gradually beginning to displace real sociality, transferring many forms of human activity to the digital sphere.

The prefix "meta" signifies that the metasociety will allow people to immerse themselves in a virtual world unencumbered by the limitations of the physical world. This freedom simultaneously encompasses both the fundamental advantages and disadvantages of the new reality. Metaspace allows people to work fully without leaving home.

The COVID-19 coronavirus pandemic has served as a kind of rehearsal for a new social order. Everyone remembers well how, in 2020–2021, many people switched to remote work. This, of course, led to even greater fragmentation of society and a sharp reduction in real social contact between people. However, the pandemic has passed, and remote work remains (and, presumably,

will continue to do so in the future). A whole generation of young people has emerged for whom remote work has become a new way of life, a style for their generation.(Poghosyan G.A. 2022).
A recent Gallup poll found that work location trends will remain stable through 2022, reflecting the resilience of the remote work model[1]. In 1997, physician David Manners and physicist Tsugio Makimoto published the book "Digital Nomad" (Makimoto, 1997). Active digital travelers have replaced those working remotely or from home.

Digital Generation

The digital generation's lifestyle is one of constant movement and self-expanding capabilities. Thanks to mobile communications and IT, these newcomers are no longer tied to a specific place of work or study. The first wave of digital nomads are programmers and IT specialists. Their favorite destinations are Bali in Indonesia, the islands of Thailand, and the state of Goa in India. The most common professions among them are e-commerce, designers, marketers, copywriters, translators, data analysts, web developers, test engineers, big data analysts, and even accountants (Thompson B.Y. 2019). For them, changing their place of residence and profession becomes a conscious step toward development, a "better version of themselves." They live in a world full of uncertainty, where circumstances frequently change and national borders are erased. They have made travel a model of their behavior, a new cult, a global trend (Beverly, 2019). Specifically, for this purpose, co-living spaces have emerged in various countries—so-called "co-living spaces"—shared communities for digital nomads from all over the world, and "coworking spaces," which have replaced their offices and noisy cafes with poor internet.
We encountered this new reality in Armenia when the Ukrainian crisis and Western sanctions against Russia forced many Russians to leave the country (Pogosyan, 2023, pp. 52–61). A large influx of relocators to Armenia resulted, with approximately 150,000 Russians arriving. They relocated their businesses, sometimes along with their office workers. The majority were young people, representatives of medium-sized businesses, IT companies, and internet specialists.
Incidentally, Anthropic published the first-ever comprehensive analysis of AI use in 150 countries. Armenia (along with Austria, Slovenia, Poland, the Czech Republic, and 35 others) ranks in the upper middle (0.89–1.71) for AI use. (Anthropic Economic Index report. 2025. P.15).
Taking into account the new behavior patterns of "digital nomads," the economic space of the EAEU in the near future can be structurally transformed in such a way that a new generation of young people can comfortably use it for travel and business relocation.

Avatars

The younger generation has embraced "digital nomadism." They travel the world and work online with their employer. They are free from the need to visit an office daily; they can freely choose the location and time to work. This makes them not only temporarily independent, but also free from a fixed workplace and presence. Considering that in the near future, AI will allow everyone to create a personal digital avatar, it can be assumed that this will allow people to free themselves from their physical bodies and "become bodiless". As was mentioned by Fuller “Considering human psychology in properly quantum terms means that the difference between an agent and its environment does not amount to two physically separated bodies but rather two overlapping spheres of possible action”. (Fuller S. A. 2018, p.3).
It will be possible to send your avatar to a conference to present a scientific paper. The avatar will even be able to answer questions from participants or other avatars. Thus, this alternate reality—the metasociety—will gradually begin to displace people's existence in their ordinary living space. They will begin to live in a dual space-time.

[1] GALLUP. September 2, 2025. Hybrid Work in Retreat? Barely. By Ryan Pendell. https://www.gallup.com/workplace/694361/hybrid-work-retreat-barely.aspx

According to Wendt conception (Fuller S.A. 2018, p.2), the observance of a common language and state agencies' periodical displays of coercion generate society as a "quantum field" whereby the fates of the member individuals are 'entangled', again in the sort of non-local way prescribed by quantum mechanics. Today, large shopping malls are beginning to experience difficulties with customers as young people gradually shift to online platforms with home delivery. They order not only groceries but also clothing, shoes, electronics, and everything else. Online retail is actively displacing retail in large stores and shopping malls. We are witnessing a massive revolution in the structure of international trade. Marketplaces are dominating the retail landscape.

Visiting museums in other countries and cities will become possible online. There's no need to travel to another country, buy a ticket, or stand in long lines to enter museums, theaters, and exhibitions. Digital tourism will become accessible to many people, and for many, it will replace expensive trips abroad. The same can be said for online education. Many reputable universities have made themselves accessible to a huge number of students through online portals.

According to psychologists, digital migrants, or digital autists, prefer a kind of "escape from reality" into a parallel reality. A second or parallel life creates the possibility of a double life in a virtual reality on the World Wide Web. This is a model of living in a parallel reality with a personal avatar. An avatar that can continue to live in the meta-society even after the actual death of the person in real life.

Meta (formerly Facebook) recently created photorealistic 3D avatars designed to replace traditional social media avatars. The technology allows for such a precise rendering of a user's appearance that the 3D avatar becomes indistinguishable from a real person. These digital doubles will inhabit a metaverse created by the company. The social network Horizon Home will allow people to meet friends—not physical ones, but avatars—on a virtual platform. People will be able to interact with it virtually without breaking away from reality. Mark Zuckerberg even coined the term "friends from different layers of reality."[2] He believes the metaverse is simply a digital space in which people have existed for a long time. In fact, humanity's transition to digital reality has already occurred. Meta aims to create so-called mixed reality, where physical objects can be placed in a digital environment and vice versa—virtual objects or people, in the form of holograms, come to life alongside us.

In 2023, Wall Street Journal columnist Joanna Stern set out to discover how real and human-like an AI-generated digital avatar could be, and whether it could fool real people. Using the tool Synthesia, she created her avatar based on real video and audio recordings[3]. The result was more disturbing than she could have imagined. When she watched the video, she thought she saw her reflection in a mirror. Her voice clone was created using ElevenLabs' generative AI algorithm. This audio avatar can reproduce any sound text in the user's voice. Testing showed that the audio clone sounded more like a real person than the video clone[4].

The Chinese company Tencent Cloud announced the launch of a digital platform for creating fake scenes as a service (DFaaS). It promises to create high-resolution digital copies of people using just three minutes of live video and 100 spoken phrases[5]. The Guardian reports that Albania has appointed the world's first AI minister. She, Diella, will be in charge of public procurement. She is the first member of the government who does not physically exist, but is instead an AI creation with an avatar[6].

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[2] Avatar in the metaverse: risks of using digital twins. https://telesputnik.ru/materials/hipe/article/avatar-v-metavselennoy-riski-ispolzovaniya-tsifrovykh-dvoynikov- (accessed: 23.08.2024).

[3] How real can a virtual avatar be? It bypassed the bank's protection and fooled real people. https://tech.news.am/eng/news/1247/how-real-can-a-virtual-avatar-be-it-bypassed-the-banks-protection-and-fooled-real-people.html (accessed: 11.01.2025).

[4] Ibid.

[5] Sergey Petrenko. AI is capable of creating a digital avatar of a person that can mislead both relatives and the bank. https://rg.ru/2023/05/10/cifrovaia-kopiia-cheloveka-obmanula-bank.html (accessed: 14.09.2024).

[6] *The Guardian*. 11 Sept. 2025. Albania puts AI-created 'minister' in charge of public procurement.

And in Japan, the young "Road to Revival" party has appointed an AI chatbot in the form of a penguin as its leader[7]. In the next 10 years, people will live in neural networks. AI is rapidly entering our lives and becoming an integral part of many professions: from social media managers and computer designers to doctors.

Many are already taking intensive AI courses and learning basic skills with ChatGPT, DALL-E 3, Midjourney, Runway, HeyGen, and invideo. Recently, Sam Altman, the founder of OpenAI, stated that he believes we will achieve general artificial intelligence, also known as superintelligence (AGI), by the end of 2025, with the first AI agents entering the job market.

Conclusion

Sociology is becoming increasingly in demand today, and in the near future, it will become essential in a rapidly changing society. Historic transformations in the life of our traditional society are taking place before our very eyes. The current generation of sociologists must explore and understand the fundamental changes associated with the emergence of a second, or virtual, reality. It is already evident that an increasing number of young people are spending several hours daily on the internet and social media.

Sociologists predict a significant expansion of youth activities in the near future within this parallel artificial reality, called "meta-society." Further development of generative AI will significantly increase the transfer or duplication of human activity into the space of meta-society. This is another new form of migration—the transfer of various activities from the space of familiar reality to the space of a virtual, parallel, or artificial reality; it is a migratory outflow into a parallel reality. Moreover, in the near future, various activities in this artificial reality will be autonomously performed by human stand-ins—digital avatars created specifically for this purpose using AI. AI creators are already predicting the emergence of digital analogues of people, or personal digital avatars, that will be able to easily replace many of our actions in meta-society without our direct participation.

Thus, sociologists are faced with the task of scientifically studying this second reality, or metasociety, in all its details, challenges, and risks to our usual way of life. Apparently, this will require the creation of a new, digital sociology capable of studying and addressing the unique problems of metasociety.

Currently, digital sociology is already studying social information on the World Wide Web. Big data methodologies are used for such sociological research. With the development of quantum computers, statistical processing of big data will become even more accessible. Clearly, AI capabilities will be used to analyze the results of digital sociology research in the metasociety. It can be assumed that in the near future, sociologists will develop new methodological foundations for digital sociology to conduct surveys on the behavior of virtual avatars in metasocial spaces.

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