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VIRTUALITY, SIMULATION AND FAKE

THE TECHNICAL DEVELOPMENT AND PHILOSOPHICAL CRITICISM OF VIRTUAL ANCHORS

VIRTUALIDADE, SIMULAÇÃO E FALSIFICAÇÃO

O desenvolvimento técnico e a crítica filosófica das âncoras virtuais

VIRTUALIDAD, SIMULACIÓN Y FAKE

El desarrollo técnico y la crítica filosófica de los anclajes virtuales

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ABSTRACT

As a real-life application of a "virtual human," virtual anchors refer to the application of virtual reality technology in communication hosting to create virtual images that simulate human anchors. The pursuit of a virtual human image originates from philosophy, art, and biotechnology. Virtual anchors are also required to undertake the function of communication and hosting. First, by sorting out the development process of virtual anchors, we find that the development of a virtual anchor is based on the needs of technological development and the purpose of capital profit. Second, the simulation technology of a virtual anchor has five dimensions, such as appearance, individuality, and autonomy, and two levels: internal and external. This simulation technology has reached the intelligent simulation stage. Finally, the technology involved in virtual anchors will lead to a trust crisis. That is, the people's body-mind relation and cognitive trust will be broken under the mediation of data. Virtual technology will recreate a false aura, that is, false space-time and fake original works, which is the intelligent falsehood required by the new cultural industry.

Keywords: virtual anchor. artificial intelligence. simulation. false. cultural industry.

RESUMO

Como aplicação da vida real do "humano virtual", os âncoras virtuais referem-se à aplicação da tecnologia da realidade virtual no campo do jornalismo televisivo, de Internet ou rádio para criar imagens virtuais que simulam âncoras humanos. A busca da imagem humana virtual tem origem na filosofia, arte e biotecnologia. O âncora virtual é também necessário para desempenhar a função de apresentador em qualquer programa noticioso. Em primeiro lugar, ao separar o processo de desenvolvimento de âncoras virtuais, descobrimos que o desenvolvimento de âncoras virtuais se baseia principalmente nas necessidades de desenvolvimento tecnológico e na finalidade de lucro de capital. Em segundo lugar, a tecnologia de simulação de âncoras virtuais pode ser dividida em cinco dimensões, tais como aparência, individualidade e autonomia, e dois níveis: interno e externo. Esta tecnologia de simulação atingiu a fase de simulação inteligente. Finalmente, a tecnologia envolvida nos âncoras virtuais conduzirá a uma crise de confiança, ou seja, sob a mediação de dados, a relação corpo-mente das pessoas e a confiança cognitiva serão quebradas. A tecnologia virtual recriará a falsa aura, ou seja, falso espaço-tempo e falsos trabalhos originais, que é a falsidade inteligente exigida pela nova indústria cultural.

Palavras-chave: âncora virtual. inteligência artificial. simulação. falso. indústria cultural.

RESUMEN

Como aplicación en la vida real del "humano virtual", las anclas virtuales se refieren a la aplicación de la tecnología de la realidad virtual en el campo del noticiero televisivo, de Internet o radio para crear imágenes virtuales que simulen anclajes humanos. La búsqueda de la imagen humana virtual tiene su origen en la filosofía, el arte y la biotecnología. El ancla virtual también es necesaria para llevar a cabo la función de presentador en cualquier noticiero. En primer lugar, al ordenar el proceso de desarrollo de las anclas virtuales, encontramos que el desarrollo del ancla virtual se basa principalmente en las necesidades del desarrollo tecnológico y en el propósito del beneficio del capital. En segundo lugar, la tecnología de simulación del ancla virtual puede dividirse en cinco dimensiones, como la apariencia, la individualidad y la autonomía, y dos niveles: interno y externo. Esta tecnología de simulación ha alcanzado la fase de simulación inteligente. Por último, la tecnología del ancla virtual provocará una crisis de confianza, es decir, bajo la mediación de los datos, se romperá la relación cuerpo-mente de las personas y la confianza cognitiva. La tecnología virtual recreará un aura falsa, es decir, un espacio-tiempo falso y obras originales falsas que es la falsedad inteligente que requiere la nueva industria cultural.

Palabras clave: ancla virtual. inteligencia artificial. simulación. falso. industria cultural.

1. Introduction

Virtual anchors[1] (VAs), a real-life application of Virtual Humans (VHs), have recently seen a boom in the 21st century. The development of Artificial Intelligence (AI) technology based on neural networks and deep learning and the widespread use of AI in various areas such as music, image generation, and word processing provide the technical basis for VA technology. VAs have all the characteristics of VHs. Compared to VHs, they integrate more closely with the market. They are the product of the close combination of cultural industry and VH technology. Next, we will take the VAs as examples to discuss the cultural connotation and philosophical implications behind the VH technology.

"Virtual" comes from "*virtualis*" in Medieval Latin, which originally meant "being something in essence or effect, though not actually or in fact". In 1959, the meaning of "not physically existing but made to

[1] Anchors in this context include TV hosts and news anchors, network influencers, entertainment hosts, etc.

appear by software" at the computer level began to be applied, and then a virtual reality technology related to the computer, network, and telecommunication developed.[2] Therefore, "virtual" is the use of technology to imitate and simulate reality, not fiction.[3]

Philosophically speaking, virtuality is an ancient concept. In Plato's thought (1997) on the dichotomy of "the world of ideas" and "the sensible world," the latter is the "virtual" version of the former, and the omnipotent "craftsman" carries out this virtual. ("Timaeus", p.1235) With the development of technology and the positivist spirit, there is a growing tendency to believe that the physical world in which we live has a real character, while the cyber world becomes a virtual representation of the real world. The creators of the cyber world are human beings who are imitating the Creator and conducting new experiments in creation, which range from phenomena to things and people, to the entire world, with technologies such as AI simulations, virtual reality, cloning technologies, and the metaverse.

The technical and ideological sources of virtual technology can also be traced from the artistic level. From Plato onwards, art has been considered to be virtual and false. In Aristotle (1925), on the other hand, art (Tekhnē) is a combination of the necessary and the contingent, and art consists of an authentic course of reasoning, i.e., having authenticity. (1140A) Modern art breaks away from the traditional superficial reality of imitation art and emphasizes the logical reality of art itself. In the internet age, with the widespread use of intelligent technology in the arts, virtual simulation techniques have reverted to the pursuit of this apparent reality in video and dynamic images. VH is the most challenging virtual technology, and the earliest VH image was born from film and television art. For example, the Queer nationality in Forbidden Planet in 1956 is pure conscious existence, the "bionic man" appeared in Westworld in 1973, and the concept of "replicator" appeared in Blade Runner in 1982.

VH is not limited to human artistic imagination. In fact, this concept is also directly related to biological and medical technology. For example, the virtual human project (VHP) of the Oak Ridge National Laboratory in 1996 is an example of bioengineering technology. In China, a 3D reconstruction of a female VH with human physiological characteristics was started in 2003. Such programs integrate biomedicine, neuroscience, and AI. They enable the integration and reconstruction of human data into independent, visual, three-dimensional structures that allow manipulation to improve the level of information and modernization of the medical process. The ultimate goal is overcoming human physiological defects and achieving human enhancement.

The VH combining philosophy, art, and biotechnology is the ultimate goal of this concept and its entire content, as described by Martine Rothblatt (2014). The VH is "a replica of a particular person's mannerisms, personality, recollections, feelings, beliefs, attitudes, and values." (p.96) On this basis, the VA also has a functional or practical dimension, which needs to undertake part of the work of hosting and communicating. There are two opposing positions on VH technology. One view is an affirmative stance, arguing that the development of VHs is a practice that applies virtual reality technology to pursue human enhancement or the transcendence of the human species. The other view is a critical position based on the traditional philosophical exploration of truth and falsity, revealing the falseness embedded in VHs and VAs and the manipulation behind it.

So far, the areas of academic research on virtual humans (VHs) and virtual anchors (VAs) contain three primary points.

First is the study of humans in virtual worlds and the specific characteristics of virtual humans (VH), with a more interdisciplinary character. In the field of communication, Marshall McLuhan (1994), concerned with the close connection between artifacts and humans in the information age, proposed in *Understanding Media: The Extensions of Man* that the media is an extension of man, arguing that electronic technology is an extension of the entire human central nervous system. In Feminism, Donna J. Haraway (2015), in *Simians, Cyborgs, and Women: The Reinvention of Nature*, defines the hybrid

[2] More information on the origins and development of virtual is available at https://www.etymonline.com/.
[3] The word "virtual" in Chinese, which means fiction and simulation, is easily confused with unreal.

form of machine and organism as a product of the post-gender era. In terms of body theory, David Le Breton (2011) pointed out in the *Anthropologie du corps et modernité* that the body scorned by technology and the body favored by consumer society constitute a set of contradictions and that once the body reaches its conclusion, the pleasures of life will be lost. In sociology, Günther Anders (1992), in *Die Antiquiertheit des Menschen 2*, argues that cloning technology makes humans redundant and obsolete, and that this fact triggers a collective fear of humanity. These research results show the close connection between virtual humans and human beings and that most of the disciplines that have humans as their object of study can also be integrated and intersected with the study of virtual humans. This conclusion suggests that the virtual human, as a stage in the development of human technological civilization, has become a topic that is difficult to bypass in the study of post-human theory.

Second, the study of the VH as a posthuman subject is more comprehensive and forward-looking than the first type of research. Since the 21st century, academics have increasingly regarded virtual humans as a critical theme in post-humanity. And the fate of virtual humans has been closely linked to that of humanity, with academics and society filled with a variety of neutral, optimistic, or pessimistic voices. N. Katherine Hayles (1999), for example, in *How We Became Posthuman*, takes three waves of cybernetics as a developmental cue and clarifies that virtual technologies will drive the construction of highly heterogeneous cyberspace where the posthuman will transcend inert flesh and inhabit the invisible. Rothblatt (2014), in *The Virtually Human*, looks forward to the immortality of the human race and the healthier and happier life that will be achieved through digital technology, arguing that thought-cloning technology is democratizing. In *Homo Deus, a Brief History of Tomorrow*, Yuval Noah Harari (2017) sees dataism as a new kind of religion and modern man as a group of believers prostrated at the feet of data and, more pessimistically, sees post-humanity compressed into a digital flood of chips. It is clear from more recent results that, as technology advances, humanity has come to acquiesce to the imminent arrival of the virtual human. However, predictions about the post-human era remain diverse.

Third, virtual humans involve key technologies such as real-time interaction, emotion generation, and virtual reality, and scholars have conducted a series of specialized studies on them. Norman I. Badler (1997), in "Real-Time Virtual Humans," divides the simulation dimensions of the virtual human according to its design. He discusses appearance, movement, interaction control, and autonomous action and proposes that the structure of perceptual control behavior can have a driving effect. In the field of emotion generation, Rosalind W. Picard, a representative of connectionism, differs from Marvin Minsky, a representative of symbolism, who sees human emotion generation as a collection of independent processes by arguing that emotion generation should track various emotional signals in time and construct a mapping relationship between signals and external expressions. In his paper, M. Richard (2021) points out that the world is a non-negligible virtual reality dimension, and that real-time rendering immerses people in an unfolding space. Currently, the development of virtual human technology focuses on the "AI+VR" model, and the combination of intelligence and immersion will be the future trend of virtual humans.

Chinese scholars have paid much attention to virtual anchors (VAs). The research findings fall into three sections: a comparison of the advantages and disadvantages of virtual and human anchors, a review of the development of VAs, and the future prospects of virtual anchors. For example, the papers by Yang Chunhui (2019) and Zhao Guangyuan (2019) compare the two types of anchors from multiple dimensions and share similar views, i.e., human anchors are more humanistic, and VAs are more efficient, less error-prone, and cost-saving. Secondly, in terms of research overview, Wu Feng et al. (2021) collected detailed cases of domestic and international VAs over the past 20 years in their article. They covered aspects such as shape evolution, technical features, and the latest progress, discussing the impact of virtual anchors on humans (human anchors and viewers) and the industry landscape. Finally, in terms of outlook, most researchers believe that the future direction of VA is a blend of technicality and artistry.

In summary, there are two problems in the study of virtual humans and virtual anchors. First, researchers do not fully appreciate virtual anchors as representatives of virtual humans. Second, most research

content focuses on technology or the philosophy of technology, with little emphasis on ethics and aesthetics. This paper will attempt to remedy these problems by, first, elevating the situation of virtual anchors to the difficulties faced by the whole group of virtual humans; second, trying to fully connect the problems with philosophical thinking, especially by combining the ethics of technology and aesthetics, to find ways to make a breakthrough in the problems.

2. The History of the Virtual Anchor

As the representatives of Virtual humans (VHs), Virtual anchors (VAs) refer to the VA agents generated by applying virtual technology in the communication field and simulating human anchors. VA technology is one of the activities human beings employ to explore their own virtual reality, based on the simulation of reality and governed by the urge to create things. VAs are different from the virtual images in science fiction movies and games, which have the characteristics of real-time variability, interactivity, and sociality. VAs often need to broadcast and perform on certain occasions (virtual environment or stage environment), so the production technology of VAs is more complicated than that of film and television virtual images.

According to the technical characteristics of VAs, their development includes three stages. The first stage is the nascent stage. The virtual degree is not high, the virtual image is flat, and the first batch of VAs involving color key matting technology, 2D modeling technology, keyframe animation, and other technologies are produced. In April 2000, Ananova, an Internet news announcer launched by the British newspaper Associated Press Media, was regarded as the beginning of the global VA industry. In the same year, South Korea, Japan, and the United States also competed to launch their own VAs, namely Lusia, Yuki, and Vivian, who are active in three major fields: music, games, and life. In 2016, with the support of 3D modeling, motion capture technology, and voice technology, VA Kizuna (ｷｽﾞﾅｱｲ) from Japan triggered the latest round of development of VAs on the internet.

The second stage is the development stage. With the power of 3D modeling, motion and facial capture, speech synthesis, and other technologies, the VA ushered in the transformation from planar to three-dimensional. For example, Ami Yamato began to use the virtual image created by the facial capture device as the main character of the video in 2011, so the naturalness of the virtual image in the video has improved. (Guo, 2020)

The third stage is the promotion stage of intelligent technology. AI virtual image technology, natural semantic understanding technology, voice synthesis, virtual image driving, and other technologies have contributed to the intellectualization of VA. VA has achieved a more appropriate “cloning” of the human anchor based on imitation, and the details are accurate to lip movement, micro-expressions, voiceprint identification, and so on. For example, in 2020, South Korea developed the AI VA “Kim Joo Ha," which integrates AI, deep learning, convolutional neural network (CNN), and other technologies.

In China, VA technology is also developing very rapidly. In 2000, many VAs, such as Go Girl, Lili, Icy, and Bill Deng, were launched, and in the following years, Yi Meier, Jiang Linger, and Mei Mei launched successively. In 2004, Xiaolong, the first virtual TV program host in China, served as the host of CCTV-6 "Light and Shadow Weekly," followed by a period of technical settling. In 2018, Xinhua news agency launched Qiu Hao, the world’s first fully simulated AI anchor based on a real-life anchor, sparking the trend of AI VAs. Unlike "European and American developed countries have cutting-edge AI technology, but they have 'aphasia' in the field of 'synthetic anchor'" (WU & Liu, 2021), China’s VAs industry was slightly behind at the beginning of this century, but it has gradually taken the lead and has achieved the universal application of VA in CCTV and local TV stations in the first and middle stages of industry development. As the industry matures, it shows the family shaping of AI VAs by technology companies such as the Baidu department, iFlytek department, and Sogou department. This advance is because China's domestic TV stations and network TV are increasingly competitive. With the rapid development of the cultural industry, television requires more high-tech features to attract viewers. In addition, in

recent decades, China's Ministry of Culture (2017) has proposed to enhance the ability of cultural innovation" and encourage the development of high-tech industries, such as virtual reality, augmented reality, and AI.

VA technology is currently in the research and development stage, and there is still a large gap between VAs and human anchors. The mainstream view is that the AI anchors are still simulations of the real anchors, which need the expression and voice of the real anchors as the templates and cannot generate new logical reasoning, emotion, personality, and so on. (Ji, Cai, & Wang, 2020) At present, the intention of VAs generation is to improve the level of language and image recognition, 3D modeling, and virtual simulation technology. Therefore, AI synthetic anchor has a technology-oriented purpose rather than the fundamental purpose of cultural and artistic communication.

Professor Michael Woolridge of Oxford University also commented bluntly on Xinhua's AI news hosts. “It's very flat, very single pace, it's got no rhythm, pace or emphasis” (Wiederhold, 2019). Therefore, no matter the behavior performance, language rhythm, emotional expression, or personality embodiment of the VA, it cannot make people completely satisfied. This issue is not only a technical problem but also closely related to the design of the whole industry (similar design and function), human design industry (flow line character design), consumption symbols (using virtual gimmicks to seek economic benefits), and other elements. The research and development of virtual technology ultimately serve the development of cultural industry and capital.

3. Simulation levels and technologies for virtual anchors

The fundamental rationale for designing virtual anchors (VAs) is to use human characteristics as the objects of simulation. However, the successful portrayal of a character in theatre requires not only looks, styling, or movement design but also a distinctive personality. VAs are supposed to be a unity that echoes both inside and outside. Badler (1997) divides the simulation of virtual humans (VHs) into five dimensions, appearance (physiological characteristics simulation), function (physical and mental activity simulation), time (interaction and feedback simulation), individuality (gender, age, culture, and other characteristics simulation), and autonomy (control of self and the outside world and prediction simulation). Sun Shouqian and other scholars (Sun, Q. Wu, & J. F. Wu, 2010) elaborated on the key points and specific requirements of VHs simulation in the field of digital media from the technical perspective. In addition to external requirements, such as geometry and behavior, it also includes the deeper human essence represented by perception, emotion, and social characteristics. We divide the simulation of VAs into internal and external levels. External simulation refers to the directly visible identities, appearance, actions, etc., while internal simulation refers to the indirect intelligence, emotions, personality, and possible intentional activities. Combining Badler's five dimensions with internal and external simulations, we get the primary parts of the VAs that need to be simulated. We then talk about the simulation mechanism and technical requirements in the context of a specific VA, Xiaoyang, the first digital anchor of Hunan Satellite TV in China.

The first dimension, appearance, is the simulation of external form features. Such as designing a beautiful figure, glossy skin, and exquisite hair for "Xiaoyang.". The technologies used include image design and 3D modeling. Modeling technology is the basis of VAs shaping. In the character modeling phase, popular methods include geometric feature description, two-dimensional photo reconstruction method, parametric reconstruction method, modeling methods represented by Poser, 3D Max, and other software, and intelligent modeling methods using intelligent modeling systems to replace human preprocessed data. (DU, 2019) Through behavior modeling, the VA can realize simple movements, such as body movements and pronounced lip movements, which include the parametric keyframe method, inverse kinematics method, kinetic method, process method, and motion capture method using sensors. (Wang, 2010) Behavior modeling not only improves the fluency of the VA's large-scale body movements but also makes the subtle lip movement and facial muscle movement more fluid, and the comprehensibility of the entire VA will improve significantly.

The second dimension is function. The functions of VAs are news broadcasting, hosting, participating in entertainment activities, etc. Therefore, it is necessary to design some professional hosting skills for VA, such as announcing, dancing, singing, etc. The technologies involved are motion capture, micro expression control, speech and language processing, and so on. In particular, AI technology has improved natural language processing (NLP), enabling instant, smooth, and automatic communication between human viewers and virtual hosts. At present, the difficulties of VAs in natural language understanding include logical relations, grammatical relations, and semantic issues. In the final analysis, it is still difficult for a machine to deal with the fuzzy fields in human natural language. Aiming at Chinese machine language, Huang Zengyang of the Institute of Acoustics, Chinese Academy of Sciences, put forward the Hierarchy Conceptual Network (HNC) theory. It is "based on semantic expression, simulates the cognitive behavior of the brain in understanding natural language" (Gu, Wang, & Guo, 2015, p.105). It establishes a local associative context and global associative context, not only for the representation of linguistic units (vocabulary) but also for the comprehensive analysis of statements or entire chapters, thus improving the VA's ability to understand natural language.

The third dimension is the time dimension, which includes internal and external dimensions. Externally, VAs can cooperate with the human actors to complete the animation dubbing and real-time interaction. Internally, the continuous refinement and optimization of VAs improves the technology more and more on the one hand and makes people feel that VAs are growing with time on the other. As one of the fundamental characteristics of virtual reality, interactivity aims to establish the basis for two-way interaction between humanity and the virtual environment built by computers, and interactive devices are the core link of this process. Multi-channel interaction improves the accuracy and fluency of real-time interaction. This approach integrates voice, gestures, eyes, and other information exchange to advance real-time human-machine interaction to the level of real-time human-to-human communication. (Zhang, Dai, & Peng, 2016)

The fourth dimension is individuality. Externally, VAs have unique identities and role settings. For example, Xiaoyang's identity gender is female, her age is 20 years old, and so on. From the internal point of view, VAs need human-like emotions, personalities, and even cultural settings. The character of Xiaoyang is a youthful and lively host with elegance and knowledge. Hunan Radio and Television Laboratory will also cultivate her personality in the subsequent program application scenarios, allowing her to evolve iteratively and helping her to grow into a lovely and lovable girl next door. (Yang, 2021) Emotion setting and interaction are the key technologies in individuality, and there are currently two approaches to AI emotion generation, top-down (symbolism) and bottom-up (connectionism). Symbolism states that pre-programming can simulate the human emotion generation mechanism. Minsky (2006) regards human emotion generation as a collection of a series of independent processes, where a large number of "IF-DO-THEN" instructions in each level and branch form an efficient system in a brief time, and human beings can use credit empowerment, parallel analogy, and other skills to achieve conversion between different ways of thinking. When the machine's learning, storage, computing, and other capabilities form a system similar to that of a human (emotional machine), it cracks the emotional activity code. Sloman constructed a mechanism composed of an initial engine, new motivation generator, interrupt filter, sensory detector, and other parts to analyze the role of motivational triggers in supporting affective states. (Boden, 1990) The biggest problem with the predetermination procedure is that emotion is a rather complex state of mind, and human beings have not been able to understand its mechanism yet. Linking emotion to motivation and purpose alone would be imprecise, and not all emotions are motivated. The method adopted by connectionism is "affective computing," which collects meaningful human emotional response data. It analyzes the mapping relationship between emotions and performances such as language, gestures, and expressions through a model based on cognitive evaluation theory and tracks and interacts with various emotional signals in a timely manner. Emotion recognition is the core part, and Picard (2000) believes that "Outsiders only have access to observable functions of the affective state—expressions, behaviors, and so forth. Given reliable observations of these functions, then the underlying states may be inferred." (p.167) She further pointed out that the current emotion recognition model belongs to the low-medium level transformation. That is, recognition is achieved through human body changes and neurophysiological information, but this

method cannot yet perfectly identify the latent emotional state under various situations. Inspired by OCC[4] and Roseman[5], Higher-level signals such as context-specific, event-based reasoning are mechanisms for the generation of rule-appropriate cognitive emotions. That is to say, emotion recognition is truly successful only when low-level perceptual signals combine with high-level cognitive signals.

The fifth dimension is autonomy. The autonomy of the external level is reflected in the automation of action. The current AI VA can be automated with the support of big data and deep learning technology and can respond and act automatically in unsupervised or semi-supervised situations. The inherent autonomy requires the VA to have a certain level of intentionality or consciousness. Philosophers, technologists, and scientists have debated whether AI can produce intentionality or consciousness. The philosopher Searle (1980) tried to refute the effectiveness of the Turing Test with his thought experiment "Chinese Room." He believed that the robot in the house could pass the Turing Test, but it did not understand the meaning of Chinese because it had no intentionality and consciousness. From the standpoint of "biological naturalism," Searle (2004) believes that "intentionality" originates from the physiological level and develops into psychological states and verbal behaviors in humans. Unlike carbon-based life, machines cannot develop intentionality. Searle's view has triggered much debate. Some scholars, such as Boden (1990), argue that intentionality is unknowable. He believes that we do not know what and how intentionality arises, and we cannot conclude that machines cannot produce intentionality. Kurzweil (2014), an expert in AI, believes that if we accept that following an algorithm is inconsistent with true understanding and consistency, then we must also agree that the human brain does not exhibit these qualities either. The philosopher Dennett believes that we can adopt a more generalized "intentional stance" in which inanimate entities, such as artifacts, can be seen as "rational agents, which control their 'choice' of 'action' by a 'consideration' of their 'beliefs' and 'desires'." (1996, p.26) Some scientists, however, believe that computers cannot simulate human consciousness because of its quantum nature. “There must be an essential non-algorithmic ingredient in the action of consciousness.” (Penrose, 1989, p.407) Therefore, autonomy is only weak autonomy at present and has not reached the stage of strong autonomy.

Five types of simulation dimensions & internal and external simulation		Appearance	Function	Time	Individuality	Autonomy
External simulation	Contents	Physiological characteristics	Physical Actions	Real-time interaction of voice and movement	Identity Settings	Automation, predictive simulation
	Methods	Computer graphics, 3D modeling, image design, parametric keyframing methods, etc.	Motion capture, process animation, micro-expression control, motion editing and synthesis, etc.	Speech recognition, speech synthesis, speech and behavior interaction technology, virtual reality technology	Virtual world database, character setup, image processing, etc.	Big data, deep learning, artificial intelligence technology, etc.

[4] OCC is a cognitive emotion evaluation model jointly proposed by Ortony, Clore, and Collins. The emotion synthesized by the model is the result of the synthesis of events, objects, agents, and other situations. More is available in *The Philosophy of AI* by Boden.
[5] The cognitive-affective evaluation theory and model proposed by Roseman and colleagues show the interaction among a few evaluations (accidents, motivational states, situational states, etc.). More is available in *The Philosophy of AI* by Boden.

Internal simulation	Contents	None	None	Personality development, character growth	Personality, Language, Emotion	Intentionality, sense of autonomy
	Methods	None	None	IP content production, distribution and marketing	Affective computing, natural language processing, multi-agent systems, etc.	Quantum physics, multidisciplinary synthesis, etc.

Chart 1: the simulation technologies of Virtual anchors

To sum up, unlike the mechanical reproduction in the industrial age described by Benjamin, AI VA has entered the stage of an intelligent simulation. Mechanical reproduction is a kind of apparent replication, while an intelligent simulation is a deep, highly simulated, bionic simulation of human intelligent behavior and action mechanism. Even with the support of some AI technologies such as GAN, VAs can make certain automatic behaviors unsupervised, such as real-time interaction, reasoning, and creative activities. Thus, VAs can replace human anchors to some extent. This intelligent simulation makes it possible for people to not only have their physical work replaced by machines, but also for their mental work to be replaced by other intelligent programs. In this case, virtual people and a virtual world are really possible. This high-simulation and anthropomorphic simulation will bring new human experiences and a series of social issues, the most important of which is the problem of truth and trust.

4. Authenticity and falsehood of virtual anchors

4.1. The disintegration of authenticity: Trust Crisis

In the era of intelligent technology, a dialectic of super-real and super-fake has emerged, where AI can simulate human behavior, and virtual humans (VHs) can imitate a human image super-realistically. These technologies also allow super-fake results. Therefore, in the face of intelligent technological arts and virtual anchors (VAs), one must first distinguish between true and false. All aesthetic experience and judgment occur after the determination of true and false. It will trigger a crisis of trust in human beings.

The current AI VAs fall into two categories: cartoon and simulation. The former is an abstract representation of a human body, such as the texture, luster, and pores of skin here presented as a uniform color and smoothness within a certain shape. The latter category of simulated AI VAs includes imitations of humans in detail, which will trigger more uneasy emotions in viewers than cartoon images. This result is exactly what Japanese scholar Masahiro Mori pointed out in the 1970s as “the Uncanny Valley” phenomenon. “When the humanoid level of robots, dolls, or prosthetics reaches a certain high level, one wrong step will lead to a sharp turn and fall into the abyss of ‘the Uncanny Valley.'" (Jiang, 2020) Why do anthropomorphic artifacts cause a sense of confusion in humans? Scholars pointed out that "the emergence of the 'the Uncanny Valley' phenomenon is related to the alienation risk and cognitive confusion that people encounter in front of highly simulated robots." (Cheng & Jiang, 2018) Specifically, the high-simulation AI creates a powerful conflict between the ordinary appearance and the opaque nature, and the more normal the surface, the more mysterious the interior. The unknowable technological connotations inspire human defensiveness, and the psychological basis of the audience's dealings with their own kind (human beings) nullifies at this point, leading to an inability to empathize and a sense of fear. (Tao, 2018) The phenomenon of "the Uncanny Valley" is an example of human distrust of the objective world. First, AI VAs, empowered by big data, are no longer passive parties; they control the information leadership. The core of the machine's computing, the algorithm, is out of reach for the vast majority of people. The opaqueness of the mechanism makes it difficult to accept information from the

AI openly while at the same time being concerned about whether one might suffer an intrusion. Second, ethics, as a product of development of civilization, stems from the idea and action of human beings to seek greater good for themselves, while the AI VAs have not obtained a clear moral status. When people have a relationship with them, the ambiguous subject of responsibility makes them unable to accurately estimate the risks they may take. (Li, 2018, p.212)

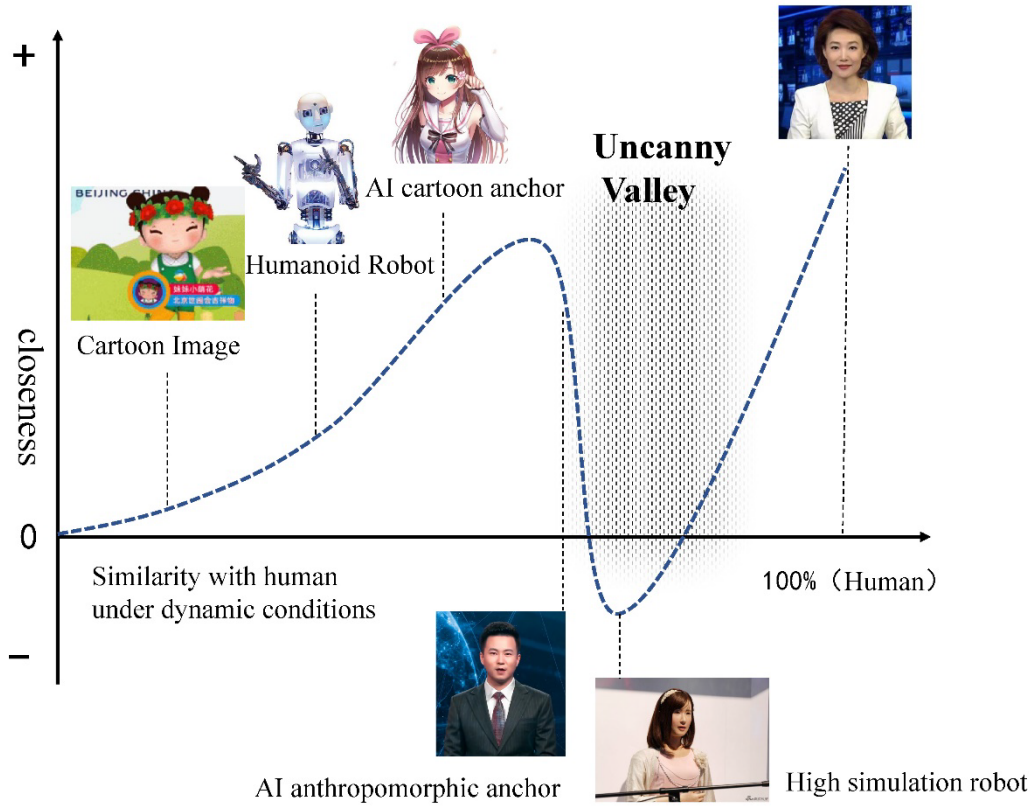

Figure 1: the Uncanny Valley (including VAs)[6]

These fears, doubts, and discomfort are rooted in people's distrust of automated artifacts, which can be further attributed to the consequences of the mediation of human traditional physical and mental models by data or artifacts. As for the problem of body and mind, in ancient Greece, Plato regarded the soul as immortal and invisible, while the body was considered visible and perishable. Building on previous discussions of the mind-body problem, Descartes systematically proposed a theory of mind-body duality, defining the mind as a thinking entity that possesses the property of "thinking" and can exist independently of the physical body, using the method of universal doubt. In Adorno's Negative Dialectics, an intermediary has become a critical factor in bridging the opposition between subject and object. Adorno (1966) suggests that mediation of the object means that it may not be hypostatized statically or dogmatically but can only be recognized in its interweaving with subjectivity. Mediation of the subject would literally be nothing without the moment of objectivity. (p.184-185) Revisiting the mind-body opposition from the perspective of mutual mediation, the body and mind are dialectical and mutually mediated. Thus, the mind must perceive the material world through the body (intermediary). The mind simultaneously emerges from the body, which needs to know the material world through the mind. However, in the virtual reality represented by the VA, the direct relationship between body and mind is altered, as mind and body can not only be separated but also digitized, virtualized, and artificialized. In this way, the virtual world represented by data breaks the old model of mind and body as intermediaries, and the new model becomes "body-data-mind." As the layers of mediation increase, the classic human cognition model has also faced challenges. In Kant's original mind-body model

[6] This image is adapted from the Uncanny Valley image（designed by Yunyu Dang & Feng Tao）

(1998), humans can use intuition to obtain perceptual knowledge of things. The combination of intuitive material (phenomenon) and intuitive form (time and space) constitute the starting point of human cognition, and the innate form of intuition also determines that human beings rely on perceptual intuition. However, under the intermediary effect of manipulated empirical data, the previous objects are replaced with data-wrapped illusions, which overlap and constitute a generally virtualized world. And trust is difficult to win in data-based non-intuition. The problem with this trust is not only the untruthfulness of the data but the power of human control behind the data. This fear of human control of power came to the fore when people gave the power of creation from God or nature to a few people. The critical theory of the Frankfurt School holds that the management class controls others and nature through technology and that rationality becomes instrumentalized and homogenized. Adorno (2003) pointed out that Cultural Industry operates the scheme as the first service to the customer. A secret mechanism should work in the soul, which already prepares the direct data to fit into the system of pure reason. This control can also be exercised more deeply and tightly through data to mediate the human body and mind, controlling people's perceptions and aesthetics.

Worse still, the collapse of trust does not only exist between humans and virtual humans but also among humans, which can cause a crisis of trust. Nourbakhsh (2013) pointed out that "as we dehumanize our relationships with robots using a rather broad brush, so we may incidentally dehumanize our relationships with people." (p.63) This quote is another reminder that human beings must rebuild trust with AI VAs. The authors believe that first, we need to recognize the limited nature of human rationality, limit the development of certain intelligent technologies and draw boundaries for intelligent subjects, limiting them to a manageable range as a prerequisite to re-establishing trust. Second, the identification of artifacts such as VHs is necessary, which requires that intelligence agents and VHs demonstrate their identity in advance, without going so far as to deceive humans and thus create a trust panic. Thirdly, AI VA is regarded as a special moral subject, and its behavior is endowed with morality and responsibility from the perspective of responsibility ethics, which is a way to establish a trust contract in reality. Kant has even limited the scope of discussion of moral relationships to rational parties, excluding infants, the mentally ill, and animals. However, with the rapid development and widespread application of intelligent technology, the scope of discussion on moral relationships is also expanding. Allen, Varner, and Zinser (2000) pointed out that "as AI moves ever closer to the goal of producing fully autonomous agents, the question of how to design and implement an artificial moral agent (AMA) becomes increasingly pressing."(p.251) They stated that the ultimate goal of designing an AMA is to establish a morally commendable agent, and the key lies in how to endow it with enough intelligence to enable AMA to assess its impact on emotional biology and to use these assessments to make appropriate choices.

4.2. The reproduction of authenticity: Reconstituting Aura

The super virtuality of virtual technology lies in its attempt to reconstruct the aura, that is, to reconstruct a unique existence in the here and now. Benjamin (1991) has suggested that a copy is short-lived and reproducible, while authentic art has a unique and enduring aura. Aura embodies the temporal and spatial presence of a work of art and the extended history of its experience. The authenticity of artworks has gradually been lost since the emergence of photography, the first revolutionary reproduction method, and the countless copies of photographs that represent no historical or locational significance have led to a shift from cult value to exhibition value of the artwork. The copied artwork has gradually become the reproducibility of artworks designed for reproducibility. When the temporal-spatiality (here and now) of art is destroyed, the aura also collapses.

When mechanical reproduction technology develops into more advanced AI simulation technology, the damaged aura may be reconstructed artificially, that is, the reconstruction of space-time and the original. Groys (2008) pointed out that "the modern age is constantly substituting the artificial, the technically produced, and the simulated for real, or (what amounts to the same thing) the reproducible for the unique." (p.63) The network integrates the production space and display space of artworks into one, overturning the traditional sense of art production. Nowadays, art production is not limited to the

generation of a particular piece of artwork but is a practical collection composed of design, research, development, publicity, generation, feedback, and other links. Works of art circulate in one closed context after another. "In circulating through variable contexts, a copy becomes a series of different origins." (2010, p.67) And when technologies such as AI and virtual simulation reproduce objects more comprehensively and realistically and can simulate them mechanically, the copies themselves have uniqueness and originality. Then, AI can generate original works that are different from human works.

According to Benjamin, the essence of the aura lies in the presence of a unique space-time. Virtual technology must recreate a virtual space-time if it wants to recreate an aura. Virtual technology can make the senses feel spatial appearance through visual creation and multi-sensory experience. As mentioned earlier, multiple dimensions of virtual anchor (VA), such as appearance, function (behavior), and individuality, can all create a sense of space. The realistic appearance and fluid movements of the VA and the naked-eye 3D of virtual reality technology can give the impression that the VA is actually in space. Real-time interaction can further instill a sense of time, and the temporality in virtual anchor technology arises through real-time interaction. This creation of space-time makes the human senses seem to feel a real sense of time and space. According to Kant's viewpoint, if space-time is all subjective to human perception, then it is possible to generate a sense of space-time by using intelligent technology to simulate space-time representations and stimulate human temporal intuition. AI VAs, such as the People's Daily VA "Guo Guo," combine AI image recognition, speech recognition, emotional computing, and virtual reality technology. They recreate a human-like anchor image from vision, auditory, emotion, and other aspects. The now-popular NFT art, on the other hand, uses encryption technology to set identity information for some network images, freeing them from arbitrary reproduction and possessing the value of the originals. And metaverse and virtual reality technologies, which make immersive experiences more realistic, provide the technical basis for recreating the aura.

Welsch (1997) points out that cyberspace is the center of the integration of virtual and reality, "The presence in front of and facing the picture transforms itself into presence within the picture into what is called telepresence." (p.181) AI VAs, as representatives of VH in the post-human context, carry out communication activities in various media in digital form and also show the possibilities of a metaverse for their audiences.

Of course, virtual technology does not recreate a real space-time or aura but rather an illusion of the senses. It forces us to think again about the question of reality and illusion. If we accept the Platonic view that reality is only an illusion, then we might not mind this double illusion. On the other hand, the aura becomes the dialectical object of this illusion of space-time, which was originally a real existence in real space-time but may now become the real evidence of a false space-time. It is conceivable that the aura can again assume an evaluative role in a dynamic, open, and transcendental post-human context. It would not only mean its sublimation but also give birth to a new cult of the virtual object. This cult is not only driven by the human impulse to make things and the artistic imagination but also by capital. With the help of virtual technology, capital can commercialize temporal and spatial representations, aura, and VHs, which form a new cultural, industrial commodity.

4.3. Intelligent fake: New Cultural Industry

The reconstruction of reality by virtual anchors (VAs) and virtual humans (VHs) is a double falsehood by making falsehood more realistic. This double falsehood is not just the lack of utility of art that Plato speaks of in the Republic (1997), but it is based on a more immediate purpose of use, the use of literature and art for the production of the practical world. This falsity is also an intelligent, automated fake based on a high degree of technological and rational development. That is, the entire industrial production process becomes an automated process for the production of falsity, entering the intelligent industrial age of a false cultural and living world.

Benjamin (2005) believes that literature and art were kinds of human production activity and regards the artistic process in the age of mechanical reproduction as a production process in which the authors of

literature and art were, themselves, producers. Therefore, he attached foremost importance to the impact of technological innovation on art. For example, mechanical reproduction technology makes art lose its religious value, leaving only its exhibition value, and technology liberated art from magic and religion. Adorno (2016) viewed the industrial production of art from a negative perspective, which he called "cultural industry." He believes art itself has dialectics of necessity and contingency, expression and inexpressibility, and authentic art should remain incommunicable and unrepeatable, opposing the cultural industry that turns art into a commodity.

In the era of intelligence technologies, the application of virtual reality, AI, big data, and other technologies in art brings art into a new cultural industry. The characteristic of this cultural industry is that intelligent technology integrates art, where art must abandon its dialectic and negativity in favor of scientific accuracy and inevitability. The result is that the authenticity that art possesses through its distance from reality no longer exists; the falsity of society then inevitably results in the falsity of art, which completely becomes a cultural industry. Adorno argues that high art can also rebel against the illusion of society by breaking its own illusion. But if art only seeks certainty and loses the dialectic of negation, then art loses the opportunity to rebel against society.

VAs are precisely a process of developing and applying cultural and industrial products. Chasing commercial interests is the fundamental goal of technology developers and capitalists, so the design benchmark of AI VAs is public aesthetics, and they meet the public's crude pursuit of culture with their fragmented and convenient characteristics.

The cultural and industrial characteristics of VAs are reflected in the following facts. First, VAs do not require humans to think or even prevent them from thinking, so the audience stays in its regular broadcasts or performances. Second, the focus is on shaping the appearance and decoration of the virtual anchors, through which the roles are differentiated, making each VA look similar. Finally, in the constant pursuit of maximizing the number of products and exposure, the media or companies use the VAs as publicity stunts to attract attention. The image and design style of the VAs are remarkably similar, and the details have only slight changes, which shows that despite the advanced technology, developers have to consider the public's acceptance of the product. Only successful precedents can move capital groups, and they would rather move forward along the original path to ensure profits. Therefore, the emergence of VAs is the inevitable result of a new cultural industry, a product of industrial production that has encroached on human life to shape the human body, personality, and mind. There is nothing good or bad about the technology of VAs per se, but the capital control behind it is worthy of caution.

In addition to the digital form of the virtual anchor, there is a physical, mechanized form of anchor to consider, namely the highly simulated robot anchor. If virtual humans are still only imitating humans in terms of data, robots proceed to imitate humans in all aspects of material, behavior, and physical appearance. Regarding technical means, with the synthesis of AI, virtual technology, and automation technology, robot anchors are likely to be realized, and further development into living robots is not far off. The combined influence of robots and virtual humans could fully replace humans, from their bodies to their intelligence. More importantly, humans may become accustomed to being replaced gradually in this way, and a symbiotic life between humans and machines becomes acceptable. E. Musk announced the imminent mass production of a new service-oriented humanoid robot (Tesla Bot) on its official website. The site describes the goal of the Tesla Bot as, "Develop the next generation of automation, including a general purpose, bi-pedal, humanoid robot capable of performing tasks that are unsafe, repetitive or boring." [7]Industrialization aims to make maximum profit. Initially, industrially produced humanoid robots replaced people in terms of labor, while the need to control the risk of human life enabled the trend for robots eventually to replace people physically and materially. Highly simulated humanoid robots will no longer enter human society as heterogeneous objects (the human other) but will become members of the human race and build a society together with humans. This development would

[7] More information on the "Tesla Bot" is available at https://www.tesla.com/AI.

have been an ideal form of human-machine harmony, but it is possible that, with the loss of boundaries, machines are slowly replacing humans, and we need to be wary of this possibility.

Conclusion

In the context of post-humanist thought, the body as a reality can be remodeled and replaced. Moravec (1988) has long predicted that the human mind can get rid of the bondage of the body to mortals - the body dies, and the mind dies. Just like computer data, it can be read out in machine memory, transferred to computers that are completely different in physical form, and fully recovered without losing anything. Nowadays, virtual reality technology is turning predictions gradually into reality. Human anchors are replaced by VAs, human bodies are digitized, and people become VHs. Our world is also being digitized and developing into a Metaverse (Dionisio, Burns, & Gilbert, 2013). Humans are impatiently turning all reality into digital artifacts, and behind the technological drive is the drive of capital globalization. And the COVID-19 pandemic provides the perfect excuse for this digitization of the world and human beings. The natural world is no longer fit for human existence, so we should create virtual worlds as soon as possible. But is a virtual world really an option or even the final destination for humans? Compared to the natural, real world, the digital world is more uncontrollable and unidimensional, a flat world detached from the historical-social dimension, lacking the growth and diversity of the living world, and, perhaps, a small virus would be enough to destroy it.

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