

Research on the ethical issues of aesthetic alienation of virtual human products under the AIGC mode—Taking identity-type virtual humans as an example

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Abstract: This paper explores the aesthetic alienation and ethical challenges of virtual human products in the context of Artificial Intelligence Generated Content (AIGC) using Marx's theory of alienation and Kant's aesthetic theory as theoretical framework. It analyzes the societal impact of generative artificial intelligence technology, particularly its application in virtual human products and the ethical issues it brings. It points out that virtual human products, as commodities, may deviate from aesthetic and value standards in the pursuit of profit, leading to aesthetic alienation. Taking identity-based virtual humans as an example, it critically examines the aesthetic alienation and risks under the AIGC model and proposes corresponding solutions, emphasizing the balance of technology, aesthetics, economy, and human relations.

Keywords: AIGC; virtual human; aesthetic alienation; ethics

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Introduction

Since OpenAI granted free access to ChatGPT at the end of 2022, it has rapidly evolved from an AI chat tool to a global cultural phenomenon, thanks to its smooth question-response capabilities and powerful text processing functions. According to the "Virtual Digital Human Industry Report," the overall market size of virtual digital humans in China is expected to reach 270.3 billion yuan by 2030. The breakthrough in generative AI technology enables the integration of virtual humans with true "brains," and several leading domestic technology companies in the virtual human industry, including Shiyu Technology, Yuanjing Technology, and Yaowang Technology, have announced the adoption of ChatGPT and other models for multimodal training.

The evolution of generative artificial intelligence, from text generation to image generation, and now to video generation, has taken less than two years, demonstrating its explosive growth rate. Although the virtual human industry has not yet achieved groundbreaking development with the adoption of generative AI, AI-driven advancements undoubtedly represent a technological trend for virtual humans. Combined with the rapid iteration of generative AI technology, virtual human products are expected to generate new development trends.

1 Aesthetic Alienation in Virtual Human Products

In their qualitative comparative analysis, Xiang Anling et al. identified that the social acceptance of virtual human products in China is influenced by factors such as "character positioning," "interactive functions," "underlying technology," and "visual appearance." It is evident that virtual human products are not ordinary commodities, as factors like character positioning, interactive functions, and visual appearance impact the aesthetic attributes of these products. In the era of digital capitalism, the convergence of technological logic and aesthetic attributes inevitably leads to the potential for aesthetic alienation in virtual human products.

1.1 Defining Aesthetics and Alienation

When discussing aesthetics, Kant defines it as "the ability to judge an object or a representation in a way that is devoid of any strong pleasure or displeasure" (Kant, 2002). In this process of obtaining aesthetic pleasure, desires and practical interests are irrelevant, and the purpose of aesthetic activities is to derive spiritual progression from artworks (Mu Jiaying, 2023). In the traditional perspective of aesthetics, beauty and art were limited to the realm of high culture, maintaining a safe

distance from everyday life. However, in essence, as a social practice, aesthetic activities are inherently difficult to separate from daily life. With the development of industrial society and the rise of commodity economy, the "disinterestedness" theory of aesthetics naturally reveals its inconsistency. In simple terms, from the perspective of the disinterestedness theory, when an artwork is appreciated and purchased by a buyer, the moment the purchasing behavior ends, aesthetic alienation occurs.

Marx's analysis of "alienation" concludes that a worker's labor and the products of their labor do not belong to the worker themselves. The worker ultimately becomes a subordinate to capital, and this alienation encompasses not only the products and labor itself but also the relationships between individuals in labor relations. Aesthetic alienation, in this context, refers to the aesthetic subject generating a "beautiful object" that is different and opposed to its own self during the process of aesthetic activity. Consequently, the alienation of the individual's sense of beauty follows, with aesthetic products created by humans becoming tools that dominate themselves, ultimately affecting their normal aesthetic emotions and abilities. We acknowledge the ambiguous fusion between aesthetics and everyday life, and in the digital economic era, people's visual perception becomes crucial for decision-making. Producers capitalize on consumers' sensory desires for "beauty," binding aesthetics with commodities. This can be seen in the growing popularity of creative gift boxes in recent years, where the determining factor for sales is no longer the product itself but rather the appeal of the gift box. The more "exquisite" the packaging, the more "valuable" it is perceived to be. It can be said that the modern commodity economy is also a battlefield of "beauty," and virtual human products are no exception.

1.2 The Logic of Aesthetic Alienation in Virtual Human Products

Table 1: Overview of Virtual Human Types

Driving Type		Appearance Effects	Interactivity	Examples	Service Type
Digitally Driven	Speech-driven Model	2D/3D real-person animation, low simulation effects, rigid actions, basic speech ability	Weak	Early news anchors	Service type
	AI Model Driven	3D near-realism, high scene simulation, natural actions, near-natural speech ability	Medium	New news anchors	
Real-Person Driven	Motion/Optical Capture	2D/3D real-person animation, high simulation effects, natural speech ability, smooth actions	Strong	Virtual idols	Identity type
	AI + Light Field	Ultra-realistic human appearance, realistic human behavior	Strong	Virtual actors	
AI Driven	AI-Assisted	High simulation, simple action model, can imitate real-person original speech lines	Medium	AI-driven anchors	Service type
	AI Self-Generated	Development stage, only in animation form	Very Weak	AI-generated videos	

Virtual human products, referred to as virtual humans, are interactive virtual entities that possess human-like appearance, cognition, behavior, and even self-thought, generated through information technology (Jian Shengyu, 2023). There are two main driving modes for virtual humans: human mapping-driven (capturing the movements of real humans and mapping them onto the skeleton of virtual humans) and algorithm-driven (using text for speech synthesis and generating corresponding facial animations). Depending on their service functions, virtual humans can be further categorized into service-oriented virtual humans and identity-oriented virtual humans. As the names suggest, service-oriented virtual humans possess functional capabilities and aim to provide services that can replace certain human abilities. On the other hand, identity-oriented virtual humans have a distinct identity and are used in scenarios such as virtual idols and virtual IP, serving as core intermediaries in the concept of the metaverse. As shown in the chart, virtual humans exhibit different levels of anthropomorphism and interactivity based on different technological driving methods. The case discussed in this article belongs to the category of identity-oriented virtual humans.

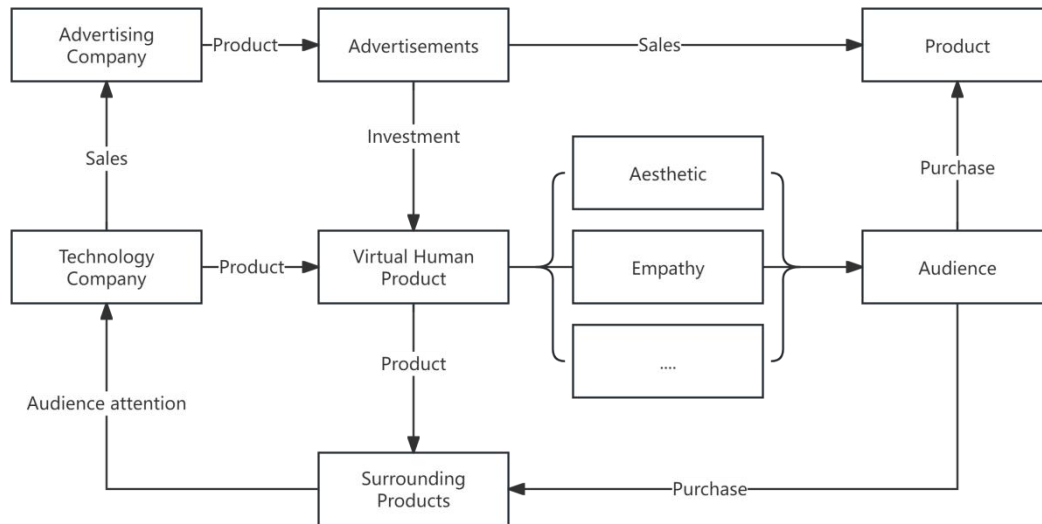


Figure 1. Attention Flowchart for Audience of Identity-Type Virtual Human Products

Smythe posited that the true product of media is the audience, which is packaged and sold to advertisers in the form of "ratings" to generate advertising revenue, thereby revealing the core profit model of mass media's secondary sales. In developed capitalist societies, all time is labor time. The audience is not merely passing time; they are also laboring to create value, which is realized through the additional advertising fees paid when purchasing products. The inequity lies in the fact that the audience has labored and created value for the media during their leisure time but received no economic compensation. Instead, they bear its economic consequences. The concept of digital labor embodies the characteristics of audience commodification. In the new media environment, the media provides not only content but also a platform for content production. The bidirectional interactivity of dissemination makes the mode of value formation for the audience more diversified.

A 2022 survey of Chinese virtual human enthusiasts indicated that over half (54.1%) of respondents would spend money on virtual characters; over 70% (77.2%) of respondents would purchase products endorsed by virtual characters or related merchandise. The rapid development of the pan-entertainment ecosystem has diversified the layout of the virtual human industry matrix, attracting more enthusiasts to invest in virtual humans. The relationship between identity-type virtual humans and their audience can be understood as the relationship between fans and spiritual leaders. The elements maintaining this relationship include virtual human content, fans' purchasing power, and fans' participation in creation. Through interaction with virtual humans, fans greatly enrich the raw materials for creating value, unknowingly becoming real laborers for the technology media companies behind virtual humans. In this labor alienation, fans mistakenly believe that spreading messages is entirely a personal act. Unknowingly, they become the product created by technology media companies, and their labor results also become derivatives of virtual humans' publicity value. At the same time, the aesthetic value of virtual humans themselves is alienated into attention-grabbing tactics.

2 Aesthetic Transformation of Identity-Type Virtual Human Products under AIGC Model

Before the sudden rise of generative artificial intelligence, the virtual human industry, driven by algorithms, real people, and AI integration, had initially achieved nearly human-like interactions with virtual human products and attracted a large fan base. In the AIGC era, the potential for virtual humans to break through the trend of humanization independently without the "middle person" cannot be underestimated. With its support, the "attention-grabbing tactics" of virtual human products will also undergo corresponding changes.

2.1 High Intelligence: From Nearly Human to Virtual Life

AI-generated content is based on its massive database. The content production process involves data collection, data preprocessing, model training, content generation, and evaluation and refinement. This means that virtual human products under the AIGC model can achieve highly human-like performances, such as realistic appearance and human interactions, through deep learning. As mentioned earlier, the core element for virtual human fans to choose virtual idols is character

positioning. Current virtual idols are mostly driven by "middle person" technology, and the key to attracting attention lies in the motion capture actors behind the virtual humans. The "halo effect" of fan groups is linked to the "perfection" of idol characters, and this "perfection" is also the aesthetic value of the idol's existence. Virtual idols, due to their virtual nature, can nearly achieve "perfection," distinguishing them from real idols. However, virtual idols can also face the risk of "collapse" due to "middle person" technology. In the virtual girl group A-SOUL, launched jointly by ByteDance and Yuehua Entertainment, member "Jia Le" announced "live broadcast dormancy," and negative news such as the actor playing "Jia Le" being exploited by the company, overworked, and underpaid put Yuehua Entertainment and ByteDance in the spotlight of public opinion. In the AIGC era, highly intelligent virtual humans driven by AI will avoid this risk and achieve absolute perfection.

2.2 Exquisite Appearance: From Manual Design to Intelligent Generation

The image of virtual humans entirely generated by AI depends on the database of the generative model and the input text requirements. This means that in the AIGC era, the character design of virtual human products can achieve ultra-realistic character faces customized by fan audiences, compensating for the shortcomings of virtual idols often presented in 3D animation due to technical limitations and further optimizing the appearance of virtual characters. On October 30, 2023, Volvo's first AIGC micro-movie "Escape from Halloween: Machine Awakening" used AI rendering technology with real-time radiance fields and 3D Gaussian splashes, perfectly integrating digital models and real scenes. Similarly, the female lead in the video also has an exquisite appearance, and the dynamic scenes can achieve relatively good scene CG effects.

3 Representations and Potential Risks of Aesthetic Alienation in Identity-Type Virtual Human Products under AIGC

Reviewing the evolution of the aesthetic field, it can be said that under the clamor of post-industrial society and consumer society, the aesthetic field has undergone almost a Copernican revolution. The lofty pursuit of aesthetics has fallen to the level of short-term sensory gratification, with aesthetic enthusiasm "embracing" the daily life it once "disdained." "Reality itself has been completely permeated by an aesthetic that cannot be separated from its structure; reality has become confused with its image." (Mike Featherstone.,2013)In the AIGC era, the aesthetic alienation of identity-type virtual humans will also have different manifestations and potential risks compared to the present.

3.1 Homogeneous Products Eliminate Aesthetic Value

Deep learning models have greatly reduced the time cost and user entry barriers for generating virtual human images. The training data for Gen-2 includes 240 million images, 6.4 million video clips, and hundreds of millions of learning examples. The generated video length is 4 seconds, consuming 5 credits per second. With the free quota, 26 videos can be generated. If the free credits are exhausted, the cost is \$0.01 per credit, meaning generating one video costs \$0.2. This indicates that future virtual human products will have enormous production capacity, and users will even be able to produce virtual human products themselves. However, the technical logic of database learning makes the problem of content homogeneity unavoidable. Indeed, the current images of virtual human products still exhibit homogeneous faces. The addition of generative AI will further diminish the aesthetic value of virtual human products.

Using the leading text-to-image platform Midjourney as an example, when avoiding specific requirement keywords, the generated content is characterized by refined human figures and realistic scene content. Creating images with the single text prompts "Chinese female" and "Chinese male" shows that the generated figures have relatively good Asian features and representative Chinese elements. However, on the other hand, the homogeneous faces and bodies in aesthetic activities easily lead to standardized aesthetic orientations like "A4 waist," "right-angled shoulders," and "high skull top," triggering negative psychological responses such as imitation, comparison, and anxiety among the audience.

3.2 Customized Production Creates False Demand

The concept of accelerated society proposed by German critical theorist Hartmut Rosa suggests that the accelerated movement of capital, bolstered by digitization and intelligence, has entered a "super-acceleration" mode. The reality of capital's profit-seeking and the desire to gain an advantage require continuous product updates and replacements. Virtual human products need to stand out among numerous competitors through diversified marketing activities that constantly create false demand among consumers. For example, in the virtual mobile game "Love and Producer," the game company

promotes exclusive holiday cards through a combination of online and offline activities, and the appearance and quality of these cards far exceed those obtained by users on a daily basis. Their functionality and interactive experience are also significantly better. The aesthetic consumption activities of users have seemingly transformed into a one-dimensional "give-receive" mode, where the card's refinement and artistry become a "technological prosthesis" (Mike Featherstone, 2013), obscuring the user's genuine appreciation of virtual human products. This creation of false demand will further develop into a panoramic phenomenon under the AIGC context.

3.3 AI-Driven Obfuscation and Ideological Infiltration

Chen Changfeng(2023) believes that generative artificial intelligence is restricted by data logic both before and after content production, and the data collected often carries biases and quality differences. Additionally, the differences between human and machine learning and expression methods result in artificial intelligence failing to accurately generate the content humans need. On one hand, human language expression depends on temporal and spatial contexts; on the other hand, human learning behavior involves subjective biases. The process of intelligence is still accompanied by unavoidable learning bias risks.

Abeba Birhane, a senior researcher at the Mozilla Foundation, Vinay Uday Prabhu, Chief Scientist at UnifyID, and Emmanuel Kahembwe, CEO of OECD AI, analyzed a dataset similar to the one used to build Stable Diffusion and found that AI training data is filled with racist stereotypes, explicit pornographic images, and images of rape. This also reflects that generative artificial intelligence can easily become a tool for ideological dissemination. The advantage of AI-driven virtual human products is that virtual humans can gain autonomous interaction capabilities. Once virtual human products engage in long-term interactions with the audience, they can easily mislead biased opinions and even lead to ideological infiltration.

4 Solutions to Aesthetic Alienation of Virtual Human Products under the Development Path of AGGC

In the era of AIGC, technology undoubtedly brings more novel and stunning aesthetic experiences to the audience of virtual humans. However, the current aesthetic consumption of virtual human products mostly presents a short-lived, superficial visual carnival rather than a profound and humanistic aesthetic experience. The audience is "imprisoned" in a utopia of pure "pleasure enjoyment," diminishing the exploration of depth and breadth. Along with the concealment of technology and the profit-driven nature of economic activities, the phenomenon of aesthetic alienation is becoming increasingly severe. Compared to external measures such as policies, it is more important to purify the content through aesthetics, critically examining the illusory and surreal nature of aesthetic alienation, thus aiding the rational return of aesthetic spirit.

4.1 Correcting Digital Technology: Seeking Diverse Databases

Virtual human products under the AIGC model will inevitably bring novel, stunning, and diverse aesthetic experiences. To address the aesthetic alienation caused by technological concealment, it is necessary to return to the underlying technology. Based on the characteristics of deep learning models in generative AI, the diversification of database materials should be improved and continuously practiced through real interactions to enhance the learning data of virtual human products.

4.2 Imbuing Meaning in Production and Consumption Stages: Cultivating Critical Spirit in All Aspects of Aesthetics

Aesthetic producers and consumers are indispensable key elements in aesthetic consumption activities. Therefore, to penetrate the fog of aesthetic alienation, solutions must be sought from these two elements. Marcuse believes that the development of advanced capitalist society suppresses people's critical and negative spirits, curbing their imagination and expectations for different ways of life. From the perspective of aesthetic producers, in the process of aesthetic production, it is necessary to combine the "real needs" of the audience with "mainstream aesthetic values," eliminating impure purposes in aesthetic production. From the perspective of aesthetic consumers, they should actively break free from sensual consumption; on the other hand, they should proactively learn aesthetic knowledge to enhance their aesthetic taste and depth.

5 Conclusion

This paper, based on the theoretical framework of aesthetic alienation, proposes that virtual humans under generative artificial intelligence technology have the characteristics of commodities. Consequently, it summarizes the potential aesthetic alienation issues of virtual human products based on their development. The use of technology in the field of consumption is not the original sin of aesthetic alienation. The ultimate goal of technological development is to promote the harmonious unity of humans with nature, humans with humans, and humans with society. As special aesthetic products, virtual human products provide services to humans and are also the foundation for humans to create a new cyber world, potentially becoming partners in the future world. Therefore, they cannot be entirely negated because of their aesthetic alienation. Balancing aesthetics, technology, economy, and humanity in development is the only way to break free from the fog of self-trapping. However, this paper lacks quantitative research in empirical analysis, and more quantitative data research should be conducted in the future.

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