Motion Capture and Two Dimension: A Study on the Embodied Communication of Douyin Asoul Animation Virtual Idol

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Abstract: From the perspective of embodied communication, this study studies virtual idols in the post-epidemic era. we analyze the reasons for the prevalence of Asoul animation virtual idols, as well as the role and impact of computer technology on virtual idols. The study found that the audience's own loneliness and virtual device practice play an important role in the process of accepting virtual idols; But marketing methods will not promote the development of the virtual idol industry; Virtual idols' own behavior and various environmental factors will also Influence the emotional perception of fans and promote the self-identity of virtual idol fans. This research contributes to the development of the virtual idol industry, and also provides a new way of thinking for further understanding of embodied communication.

*Keywords:*Embodied communication; Virtual idol; Motion capture technology; Post-epidemic era

1 Introduction

In recent years, virtual idols have increasingly become the focus of society. There are two kinds of virtual idols. One is Hatsune Miku as an example, and there is no complete virtual image of the person behind it. Another kind of virtual idol is the digital image produced by the "people in the middle" wearing motion capture equipment, then rendered and synthesized by the computer. Since 2020, under the influence of the new coronavirus, the time spent online by the whole society has increased significantly, the "home economy" has developed rapidly, people's life scenes have gradually shifted

from offline to online, the media and virtual online world have begun to replace real life. Among them, animated virtual idols have attracted widespread attention. For example, virtual personal idol Luo Tianyi appeared at the Spring Festival Gala, and virtual group idol asoul quickly captured station B and won the love of young consumers. According to iiMedia Research, the overall market size and core market size driven by virtual idols in mid-2021 will be 107.49 billion yuan and 6.22 billion yuan.

The development trend of virtual idols is in the ascendant, which shows that people's imagination may be realized in the virtual world. It relies on intelligent media technology and has many characteristics such as virtuality, interactivity, fan base, and quasi-social interaction. In terms of classification, virtual idols focus on different areas, including whether they have a real body, content, technology, industry, and whether they are dependent on the body.

Based on the past practice foundation of virtual idols, we observed that the animation virtual idol technology makes the "front stage" animation virtual identity and the "backstage" actor identity in the asoul separate, and the operator can control, adjust and split the media of the combination at any time. image, which has gained a huge amount of attention and fans. But even so, the incident of "Jiale withdrew from the virtual group asoul" still broke out. In this regard, we have questions, why virtual idols have existed for a long time, why are they more popular in the post-epidemic era? Can it replace real idols? In this way, we can find out the way to manage the identity of virtual idols.

2 Literature Review

2.1 Literature review on the phenomenon of virtual idols

The phenomenon of virtual idols has attracted research from multiple perspectives in academia. The virtual idol is a computer-generated media star, and despite the simplicity of the motives behind its production, the image also constitutes the intersection of femininity, technology, and carnal aesthetic discourses through a set of shared concerns, anxieties, and sensibilities about the human body. Aesthetic judgments are reconnected. We can see that virtual idols embody the interaction between these three domains (Daniel Black, 2008). While R-Zaborowski focused on music

technology, he explained the background of the rise of the most global virtual idol Hatsune Miku, the virtual singer, and interpreted the intersection of virtual idols and reality (R-Zaborowski, 2018). In addition, Mark Alamares talked about operating new marketing methods and technologies to create new streaming media content based on virtual reality technology, mainly including the operation of virtual character identities (Mark Alamares, 2018).

Domestic scholar Yu Guoming pointed out in more detail from the media aspect that with the development of artificial intelligence and virtual reality technology. We have entered the era of 'people' and 'people', as long as we can communicate, communicate and establish strong relationships with fans, whether it is real or virtual Characters, artificial intelligence, and even anthropomorphic avatars can be transformed into idols with the help of technology (Yu,2020). From the perspective of marketing methods and fan culture, Professor Song Leiyu pointed out that at the current stage of virtual idol operation, attention should be paid to consolidating the front and back links of conversion and realization, focusing on user needs, motivating users to produce and disseminate text based on virtual idols, and dig deeper into virtual idols and industries. Business connection to improve the monetization ability of virtual idols (Song,2019). Based on motion capture technology, Professor He Guowei analyzed in detail that digital technology has broken the original perception dimension, practiced the integration of human and virtual reality, provided many possibilities for CG characters, and redefined the era of film identity (He,2022).

2.2 Literature review on embodied communication

Embodied communication was first proposed by the French philosopher Merleau-Ponty in his research on the phenomenology of embodied phenomenology. He believed that the body is the medium that exists in the world. To have a body for an organism is to intervene in certain environments, to participate in certain plans and to remain in them.

Dario Blanco Arboleda's body communication in the 2008 elaboration of subjective identity mentioned the identity of youth and subgroups that emphasized the use of the body to modify the theoretical debate, using embodied and cognitive psychology, while the Canadian communication core figure Ines called for Restores tongue and foot function against electronic media. Even outright face-to-face communication is

ideal communication (DarioBlancoArboleda, 2008). Linda Marschner uses the concept of embodied communication in social interaction with virtual agents. Her research direction is that in the process of social communication, eyeball, facial muscle response, emotional experience, etc. can be used as means of information dissemination. Supplementation also fully confirms that human cognition is not independent, but closely dependent on the body (Linda Marschner, 2015). With the globalization of media, Dolce Rita supplements embodied communication from the perspective of linguistics and economics, emphasizing that the body also has subjectivity, and the individual spirit cannot directly perceive the world (Dolce Rita, 2022).

Domestic scholar Liu Hailong combined virtual reality to show that new media technology is trying to get rid of the shackles of the body. In the virtual world, we will temporarily forget the body, but once we start from the body's perception ability to explore the virtual world in front of us, the real world will reveal it to us. Body awareness limits our imagination and experience of virtuality, and also believes that virtual reality can be regarded as a communication practice of embodied communication (Liu, 2019). At the same time, Professor Sun Wei proposed embodied publicity in combination with embodiedness. In her opinion, embodied publicity is the fusion of classical and modern in the network life of the mobile era, and the scope of publicity is greatly expanded. Political publicity and cultural publicity are difficult to give up, and the implementation and acquisition of rights are more reflected in the process of communication and the practice of mass embodiment (Sun,2019). In addition, Shao Peng combined artificial intelligence and the host to express a high degree of affirmation for the "likeness" and "spiritual resemblance" of virtual bodies, virtual reality scenes, wearable devices, and embodied communication in human-computer interaction (Shao,2020).

Through literature review, this paper finds that although the existing studies have analyzed virtual idols from the perspectives of politics and economy. They have not combined the theory of embodied communication, and have ignored the emotions of real actors under the animated virtual idol model. It can be seen that from the perspective of communication theory, new media technology, and communication practice, the current explanation of virtual idols under the theory of embodied communication is obviously insufficient, and the physical participation inspired by technology has not received enough attention. Therefore, this paper will combine the post-epidemic era, embodied communication theory, motion capture technology and

subculture to supplement and improve related fields.

3 Method

3.1 research problem

On the basis of the above reality and theory, this study intends to use the research method of questionnaire survey, based on the theory of embodied communication, to correlate virtual idols, audience viewing time, and embodied communication. At the same time, starting from the particularity of the epidemic period, the following research is proposed. Question:

RQ1: Why are virtual idols more popular in the post-pandemic era?

3.2research hypothesis

H1: The time spent alone by the audience is positively related to the virtual idol's favor

H2: The marketing perception of virtual idols is positively related to the audience's favoring virtual idols

H3: The audience's practice of virtual devices is positively related to the audience's favoring virtual idols

3.3 Independent, dependent and mediating variables

In this study, the independent variables were the audience's alone time, perception of virtual idols, and the practice of virtual devices. The dependent variable is the audience's affection for virtual idols, which is measured using a 5-point Likert score, ranging from 1 "strongly disagree" to 5 "strongly agree". The higher the score, the more popular the virtual idol is. higher.The research objects corresponding to this hypothesis are first- and second-tier cities. With a 90% confidence interval and a sampling error of 4%, 271 valid questionnaires were finally recovered and data analysis was carried out.

4 Research findings and discussions

4.1 Data cleaning

This study subjects young people aged between 18 to 35 living in first-tier and second-tier cities, that is, groups with easy access to virtual idols. Due to the needs of the epidemic prevention and control policy, the author used Questionnaire Star to design the questionnaire, and distributed 300 questionnaires (271 valid questionnaires) through online questionnaires, with an effective rate of 90.3%.

4.2 Sample description

A total of 271 valid questionnaires were recovered, of which the 23-27 year olds accounted for the largest proportion (52.4%), the proportion of males and females was nearly one to one, the majority of which were undergraduates (67.9%) and freelancers (42.07%). The audience's alone time has no obvious characteristics in the post-epidemic era. Among them, 30 hours accounted for the largest proportion of 30.63%. But there was little difference in each part. The survey on the degree of love for virtual idols found that most people showed a positive attitude towards virtual idols. Likes and likes very much, accounting for about 81%. In terms of marketing perception, most people's perception is relatively shallow, of which 50.92% occasionally pay attention, indicating that people pay less attention to virtual idols, but the audience is less likely to use virtual equipment. Only 5.17% of those who are not using it shows that people embrace virtual devices.

Table 1 Your attitude towards the appearance of virtual idols is

item	Frequency	percentage	Cumulative percentage
Generally, optional	36	13.28%	13.28%
do not like	15	5.54%	18.82%
like very much	87	32.10%	50.92%
like it very much	133	49.08%	100.00%
total	271	100.00%	

4.3 what-if analysis

According to the time spent alone by the audience and the degree of liking for virtual idols after the epidemic, the cross-relation table of "loneliness coefficient" and "virtual idol likeness" was set. The sample situation is shown in Table 2.

Table 2 Analysis of the cross-relationship between the loneliness coefficient and the virtual idol likeness

name	0-30 minutes	1.5 to 3 hours	30 minutes to an hour and a half	3 hours and above	total	p
generally	6（10.17）	7(10.45)	6(7.23)	17(27.42)	36(13.28)	0.029*
do not like	4（6.78）	4(5.97)	6(7.23)	1(1.61)	15(5.54)	
like very much	23（38.98）	18(26.87)	27(32.53)	19(30.65)	87(32.10)	
like it very much	26（44.07）	38(56.72)	44(53.01）	25(40.32)	133(49.08)	
total	59	67	83	62	271	
* p<0.05 ** p<0.01						

Cross-analysis of alone time-virtual idol attitudes, according to the Pearson correlation (Pearson) test results show: "after the start of the new crown epidemic, the audience's alone time" and "the audience's attitude towards the appearance of virtual idols" p<0.05, it can be seen that , showing a strong positive correlation, research hypothesis 1 is established.

Table 3 Analysis of the relationship between marketing coefficients and virtual idols

	With the development of virtual idols, more and more commercial marketing activities are being carried out simultaneously. You are concerned about the marketing of virtual idols around you.
Marketing factor	0.139**
* p<0.05 ** p<0.01	

It can be seen from the above table that correlation analysis is used to study the

correlation between the independent variable virtual idol business activities and the dependent variable audience's attitude towards virtual idols, and the Pearson correlation coefficient is used to express the strength of the correlation. The independent variables "never pay attention" and "occasionally pay attention", "seldom pay attention", "frequently pay attention" and audience's attitude towards the appearance of virtual idols are cross-analyzed. The results show that P>0.05, there is no significant difference between the two , so assume that H2 does not hold, and then do further analysis.

Table 4 Analysis of the relationship between virtual equipment practice coefficient and virtual idol likeness

In the post-epidemic era, the number of times you use virtual electronic devices (AR, VR, XR) is	
practice factor	0.001**
* p<0.05 ** p<0.01	

It can be seen from the above table that the five dimensions of the variable are the independent variables of "never used", "occasionally used", "rarely used", "everyday used", "often used" and the dependent variable "audience's attitude towards the appearance of virtual idols". There is a significant positive correlation between the two, which shows that the hypothesis H3 is established.

According to the above data analysis results, the research hypotheses 1 and 3 are established, and the hypothesis 2 is not established. Combined with the particularity of the epidemic period, this paper analyzes the influence of animation virtual idols by using the relevant concepts and assumptions of embodied communication theory As people spend more time alone and feel more lonely in the post-pandemic era, they become more dependent on virtual products, which also makes virtual idols more popular. But people do not pay much attention to virtual idols from the commercial side. At the same time, there is a correlation between interaction situation and attitude. The more you like to interact with virtual idols, the more you tend to like virtual idols. , the interaction plays a certain boosting role.

5 Summary and reflection

5.1 Virtual idols arouse emotional resonance among fans

Existing research analyzes the consumption logic of virtual idols from the perspectives of political economy and cultural studies, and believes that this group, as a cultural commodity, follows the values of mainstream ideology, meets the diversified requirements of consumers, and makes up for it. The emotional needs of users in real life vacancies (Song,2019). Similarly, this study also attempts to answer the logic of virtual idols' out-of-the-circle. Fan groups can customize the image of the virtual idol, so the meaning about it is always in flux. Compared with real idols, although she lacks physicality and cannot be contacted and interacted with, this is also an advantage, making her like a container that can be projected with various stories and imaginations. However, when virtual idols no longer exist, fans cannot use this group to tell their own stories, their aesthetics and emotions cannot be projected, they cannot achieve self-identity, and they cannot support themselves. In the community of virtual idols, fans produce meaningful original works and regenerated texts to gain attention. If they are adopted by idols or get high attention from other fans, fans can gain a sense of satisfaction and belonging from the creation. The fandom of virtual idols is a community of imagination, and the utopian imagination of virtual idols is the spiritual driving force of the fandom. Compared with the secular society, the intimacy, communitarianism of this subcultural group and the people in the secular society Contrast with the alienation of people.

5.2 Marketing activities are difficult to promote the development of virtual idol industry

It should be emphasized that the research found that the degree of marketing perception of virtual idols is positively correlated with the degree to which the audience likes virtual idols. This shows that people do not care about the marketing activities of virtual idols, and are only limited to rational love for virtual idols. For example, the domestic beauty brand "Hua Xizi" with the concept of "Oriental Makeup" has launched a virtual spokesperson Hua Xizi, hoping to break the dimensional wall between virtual and reality and gain recognition from the new generation. Compared with real stars,

virtual idols who endorse brands have the advantages of plasticity, possibility and controllability, and it is easier to create an image that meets the tonality and needs of the brand; however, virtual idols are in the early stage of development, and most IP images are relatively Monotonous, it is difficult to have a deep emotional connection with users, and it also makes it difficult to break through the circle to a certain extent. Because virtual idols are not simply "consuming" the necessity of the body in communication, the end result is substitution. Reflecting and studying virtual idols from the perspective of embodied communication is to regain the importance of the body as a "communication platform".

5.3 The "Body Weight" Behind Virtual Idols

For virtual idols, "the body is not only the foundation of human beings in a biological sense, but also closely related to human politics, culture, and economic life, and has multiple symbolic meanings" (Shao , 2020). Virtual idols can not only serve as the body of narrative tools, but also as the body of symbolic carriers. Roland Barthes believes that encoders and decoders have mutual "accessibility" and "psychological commonality and sharing". So the interaction between virtual idols and fans is both a sender of information and a receiver of information (Shao , 2022) . On the other hand, virtual idols can be regarded as a communication practice of embodied communication. Because Asoul has countless non-substantial spaces and a multi-dimensional body, he first got rid of the predicament of the body as a display, and then completed the interaction with fans. The transition from "off" to "present". Finally, using the intersection of femininity, motion capture technology and carnal aesthetic discourse, people's satisfaction for the ideal woman is completed.

In addition, theoretical research on virtual idols shows that Asoul virtual idols are industry-driven virtual idols. Its operational strategies and values have changed to pay more attention to the degree of matching between character settings and real "people in the middle", and the appearance of "people in the middle" is important. Sex has taken a back seat, while performances, voices that match the image, and the ability to interact with fans are more important. This reduces the cost of the creative team to replace and replace the anchor, which is one of the reasons why Jiale left the group.

To sum up, this paper hopes to provide references for the formation mechanism and extension of meaning in the specific research field of virtual idols, so as to enrich the

system construction of embodied communication in virtual idols. In future research, we will also strive to overcome the problems of unbalanced sample proportion and small total sample size in this study, and strive to obtain more reference and mature research results.

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