

# The Mechanism of Intergenerational Emotional Identification with Virtual Idols in the Digital Era — A Case Study of AI Sun Yanzi

Hui Ma

University of Shanghai for Science and Technology, Shanghai, 200082, China  
Email: 1832186073@qq.com

**How to cite this paper:** Ma, H. (2026). The mechanism of intergenerational emotional identification with virtual idols in the digital era — A case study of AI Sun Yanzi. *Social Sciences and Humanities*, 3(3), 38–49. ISSN Print: 3104-4328; ISSN Online: 3104-4336.

<https://doi.org/10.63313/SSH.9082>

Published: 2026-04-14

Copyright © 2026 by author(s) and Erytis Publishing Limited.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



## Abstract

In the contemporary era, marked by the deep integration of artificial intelligence and digital media, virtual idols are emerging as a cultural phenomenon that profoundly reshapes the emotional bond between fans and idols. Taking AI Sun Yanzi as its research object, this study employs three core theories of communication psychology — the Uses and Gratifications Theory, Social Identity Theory, and Affect Transfer Theory — to conduct in-depth interviews with eight interviewees from different generational cohorts (from those born in the 1970s to those born after 2000), systematically examining differences in emotional identification with a digitized real-person idol across age groups and the underlying psychological construction mechanisms. The findings reveal that generational cognitive differences are fundamentally rooted in individuals' divergent media socialization experiences: those born in the 1970s and 1980s maintain a deep emotional commitment to real-person idols; those born in the 1990s exhibit attitudinal divergence and rational scrutiny; while those born after 2000, despite embracing technological novelty, still emphasize the irreplaceability of real-person idols at the emotional level. In the dimension of emotional projection, two typical patterns are identified: nostalgia-driven and entertainment-consumption-driven. The former treats the AI vocal timbre as a material carrier for activating collective memory, while the latter regards virtual idols as controllable technological entertainment products. Generational divergence in identity construction manifests as a cognitive conflict between 'instrumentalism' and 'symbiosis theory,' reflecting a deep psychological anxiety regarding the boundaries of technological simulation in the digital era. This study not only provides a new theoretical perspective for understanding intergenerational psychological differences in virtual idol communication, but also expands the empirical foundation for applying communication psychology theories in new technological contexts.

## Keywords

Virtual Idol; AI Sun Yanzi; Intergenerational Differences; Emotional Identification; Uses And Gratifications Theory; Social Identity Theory

## 1. Introduction

When the video cover of "Fa Ru Xue" (Hair Like Snow) by "AI Sun Yanzi," uploaded by Bilibili user "Chenmo Tong 1995," surpassed 3 million views, and when related topics on social media reached billions of impressions, this phenomenon transcended the realm of ordinary entertainment and became a paradigmatic case of the interplay between technology and culture in the digital era. As a digital extension of a real-person idol, AI Sun Yanzi is unique in that it relies on AI technology's vocal replication capability while being deeply associated with fans' historical emotional memories of the real singer. Examined through the lens of communication psychology, this phenomenon reveals a complex psychological process involving fans' emotional projection mechanisms, intergenerational cognitive differences, and the reconstruction of identity under technological intervention. As virtual idols evolve from purely two-dimensional figures (e.g., Hatsune Miku) to digitized real-person images (e.g., AI Sun Yanzi), how have audiences' psychological reception patterns and emotional identification mechanisms changed? Given the differences in media exposure experiences across generational cohorts, what kinds of psychological divergence emerge when different generations encounter digitized real-person idols? Addressing these questions is not only relevant to understanding emerging cultural phenomena, but also pertains to extending the applicability of communication psychology theories in new technological contexts.

From a theoretical perspective, existing research on virtual idols tends to focus on technical implementation pathways, industrial operation models, or descriptive accounts of fan culture phenomena, lacking deep exploration of audience psychological mechanisms — particularly in the analysis of the psychological drivers of generational differences. This study employs core theories of communication psychology as an analytical framework, situating the AI Sun Yanzi phenomenon within the intersecting dimensions of "technology - emotion - generation." This approach helps fill the theoretical gap in research on "digitized real-person idols" and provides a new analytical paradigm for understanding the psychological interaction mechanisms between audiences and virtual figures in the digital age. From a practical perspective, the AI Sun Yanzi phenomenon reflects the inherent tension between the expansion of technological capitalism and the emotional needs of fans. Clarifying the differences in psychological needs across generational groups can provide scientific reference for content creation in the entertainment industry, fan management strategies, and ethical norm formulation, thereby helping the industry achieve a balance between technological innovation and humanistic care, and avoiding cultural identity crises triggered by intergenerational cognitive conflicts.

## 2. Literature Review

## 2.1. Virtual Idols and AI Sun Yanzi

### 2.1.1. Definition and Classification

The term "virtual idol" appeared as early as the 1990s in Japan. However, to this day, no definitive definition has been established, largely because, as digital technology – particularly AI – continues to mature, the forms of virtual idols are constantly evolving, and technology's shaping of virtual idols remains an ongoing process<sup>[1]</sup>. According to the Anime Encyclopedia 3, a virtual idol refers to a virtual character created using computer technology, typically a singer, actor, or idol<sup>[2]</sup>. Yu Guoming defined the concept from both broad and narrow perspectives: in the broad sense, "a virtual idol is a new type of communication medium with inherent relational properties, representing an extension of strong human ties"; in the narrow sense, "a virtual idol is a fictional image that engages in idol activities in virtual or real-world settings in the AI era via the internet, encompassing both technological means and operational models." Xie Yingchun pointed out that "virtual idols are not only technological products, but also a new form of idol in the context of cultural consumption, imbued with rich cultural value and emotional significance, serving as important carriers for fans' emotional projection and cultural expression"<sup>[3]</sup>. In summary, virtual idols can be understood as figures created using digital technology that display idol characteristics in virtual or real-world settings, engage in emotional interaction with fans, and embody specific cultural connotations.

From the birth of Lin Minmei – the world's first virtual idol – in 1982, to the launch of Hatsune Miku based on voice synthesis technology in Japan in 2007, to the viral rise of virtual beauty influencer Liu Yexi in 2021, and the 2022 Jiangsu Satellite TV New Year's Gala performance featuring a virtual figure modeled on Teresa Teng alongside singer Zhou Shen, nearly four decades of development have produced an ever-growing array of virtual forms. These forms can be broadly categorized into three types: digital humans, virtual humans, and virtual digital humans. Digital humans encompass both virtual humans and virtual digital humans, exist in the digital world, and are modeled on real-world persons – fully consistent counterparts are referred to as digital twins (e.g., digital human images of celebrities Teresa Teng and Gong Jun). Virtual humans are a subset of digital humans with fictitious identities existing in virtual worlds (e.g., virtual guofeng idol Ling). Virtual digital humans represent the narrowest category – digitized figures in virtual worlds with human characteristics and capabilities (e.g., virtual spokesperson Zoe and hyper-realistic digital human AYAY)<sup>[4]</sup>. Classified by development driver, virtual idols can be divided into content-driven (represented by Ye Xiu), technology-driven (represented by Luo Tianyi), and industry-driven (represented by RiCHBOOM) categories. Classified by function, they divide into service-oriented and entertainment-oriented types<sup>[5]</sup>. From the perspective of the virtual - real relationship, they divide into purely two-dimensional virtual idols (e.g., Hatsune Miku, Luo Tianyi) and "2.5-dimensional" virtual idols that combine two-dimensional

imagery with a real-world voice source and movement prototype [6]. AI Sun Yanzi exemplifies the sub-type where the real-world entity comes first and a virtual image is subsequently created.

### 2.1.2. Historical Development

The origins of virtual idols can be traced back to 1980s Britain, when George Stone and others created Max Headroom, a computer-synthesized virtual character [7]. In 1982, the character Lin Minmei from *The Super Dimension Fortress Macross* had her in-series songs released as a named album, becoming the first virtual idol rooted in a specific cultural matrix. In 1996, Japanese talent agency Horipro created virtual idol Date Kyoko using 3D and CG technology – allowing her to debut, release photo books and albums, appear in advertisements, and grace magazine covers just like a real idol – thereby establishing the basic operational model for virtual idols [8]. This phase is termed the Virtual Idol 1.0 era. After the 2007 launch of Hatsune Miku – a music library developed based on Yamaha's Vocaloid series – the concept of the virtual idol was formally established [9], and a cohort of virtual idol singers such as Luo Tianyi emerged. Currently, virtual idols have entered the 3.0 era of flourishing development, demonstrating limitless vitality as they break through the "dimension wall" and integrate into the real world [10].

### 2.1.3. Related Research

A review of the existing literature reveals an extensive body of research on virtual idols both domestically and internationally. Domestic research has primarily focused on Web 2.0-era virtual idol products such as Hatsune Miku and Luo Tianyi. Li Jia and Chen Feiyang (2018) emphasized that virtual idol fans participate in the "shaping" of their idols, achieving self-identification and enriching the idol persona, while astutely noting that digital reproduction technology, though creative, also leads to the dissolution of human subjectivity. Li Yunqing (2024) used the virtual idol group A-SOUL as a case study based on Interaction Ritual Chain theory to explore fan behavioral characteristics and interaction patterns at the virtual-real intersection. Zhan Hongwei (2019) argued that virtual idols can temporarily transport fans away from real-world spaces and satisfy audiences' sense of participation [9]. Song Leiyu (2019) argued that "media empowerment" has enabled virtual idols to move from niche to mainstream. Yao Rui and Huang Ting (2021) conducted an in-depth analysis of K/DA's communication pathways and industrial models [6].

International research is relatively abundant, focusing mainly on feminism, music culture, and body consumption. Mauliddhe Sakina Rahmi, Nandang Rahmal, and Amaliatun Saleha employed cyberspace semiotics to analyze the value of Hatsune Miku, finding that she, as a virtual idol, can be more perfect than real idols and more aligned with consumers' inner expectations, blurring the boundary between reality and the virtual world under technological empowerment [11]. Guga and Jelena

analyzed Hatsune Miku from the perspectives of critical theory, emerging technology, and digital art practice theory, exploring the reasons for her emergence [12].

From a macro perspective, scholars have summarized developments in this field under four main themes: (1) Research on embodied forms of virtual idols: Yuan Weijun and Liang Jian'ai argue that digital technology is used to create images paired with human voices to enhance audience interactivity [13]; Zhang Yifan and Wang Wenheng's research demonstrates that virtual idols leverage digital technology to achieve cross-boundary marketing, with their image construction linked to the projection of youth self-consciousness [14]. (2) Research on technological empowerment: Digital technology drives the diversification of virtual idol forms and transforms media and entertainment industries. (3) Research on fan culture: Fans shape idols, empower themselves, and affirm identity through cultural practices, driving the equalization of idols. (4) Industrial operations: The virtual idol industry possesses IP-based operational foundations, with fan co-creation and technological advancement as key new developments. These case studies reveal that research objects are primarily concentrated on purely two-dimensional virtual idols, with insufficient exploration of digitized real-person idols – particularly regarding their special fan culture.

#### **2.1.4. Research on AI Sun Yanzi**

AI Sun Yanzi has been defined as a special type of virtual idol that simulates the voice of renowned singer Sun Yanzi (Stefanie Sun) through AI technology. Her image and style are closely linked to the real Sun Yanzi, constituting an extension of the real-world entity into the virtual domain, and building a unique bridge between the virtual and the real. Research on AI Sun Yanzi has primarily focused on technical implementation, emotional interaction, legal ethics, and the music domain.

AI voice technology – which has relatively lower material requirements – became one of the earliest AI technologies to be practically deployed. In 1952, AT&T Bell Laboratories developed the world's first voice recognition system, Audrey, marking the beginning of AI voice technology development. As internet technology developed and audiences' demands for internet experiences increased, AI voice technology's simulation fidelity continually improved. In 2023, the free, open-source So-vits-svc elevated AI voice simulation to a new dimension; Bilibili content creator "Chenmo Tong 1995" used Sun Yanzi's a cappella recordings to produce a series of songs performed by "AI Sun Yanzi" [15].

Pan Shuiyi analyzed AI Sun Yanzi's viral popularity from the perspective of users' perceptions after encountering AI, arguing that its strong anthropomorphism – benefiting from upgraded voice conversion model technology and Sun Yanzi's unique vocal timbre – enables users to develop empathy and transfer their affection. Jiang Yuanxin proposed that AI Sun Yanzi covers bring multiple aspects of emotional value: vicarious satisfaction and digital companionship; participatory

creation in which fans have AI Sun Yanzi perform diverse styles of songs; and digital immortality for deceased singers (e.g., "AI Yao Beina"), through which fans transform grief into social commemoration, embodying a "care culture." However, existing research has certain limitations: questions remain regarding how fans from different generations view AI Sun Yanzi's digital identity – whether it represents a continuation or replacement of the real Sun Yanzi – and these require further investigation.

## **2.2. Theoretical Framework for Emotional Identification**

Communication psychology's focus on virtual idols began in the early 21st century, primarily based on the Uses and Gratifications Theory, which viewed virtual idols as media products satisfying audiences' psychological needs for emotional companionship and self-identification. Yu Guoming, from an affordance perspective, proposed that virtual idols as "relational media" construct their appeal through a progressive logic of instinctive layers (visual image stimulation), behavioral layers (interactive experience design), and reflective layers (emotional value resonance). Matt Hills noted in *Fan Cultures* that fans' media consumption practices are essentially expressions of their "habitus," and that different age groups form differentiated idol identification patterns due to differences in their developmental environments and media exposure histories. However, most existing research has focused on youth subculture groups, with insufficient attention to the psychological mechanisms of middle-aged and older groups.

Social Identity Theory provides an important perspective for analyzing intergenerational differences in virtual idol communication, positing that individuals obtain identity definitions through group belonging. In the AI Sun Yanzi case, the emotional commitment of those born in the 1970s and 1980s to real-person idols, and the embrace of technological novelty by those born after 2000, essentially reflect the difference in group identity between digital immigrants and digital natives. Affect Transfer Theory reveals the psychological process by which audiences project emotions for real objects onto virtual figures; Pan Shuiyi noted that AI Sun Yanzi's highly realistic vocal timbre easily triggers "empathic transference" in users, but this emotional bond is fragile – when technological fidelity is insufficient, it may trigger "algorithm aversion." Additionally, Donald Norman's "three levels of emotional design" theory is often employed to analyze fans' emotional interaction with virtual idols, emphasizing the cumulative effect of emotional needs at the instinctive, behavioral, and reflective levels.

## **2.3. Limitations of Existing Research and Points of Breakthrough**

A review of the existing literature reveals three notable limitations: First, theoretical applications tend to remain within single frameworks, lacking integrated analysis of multidimensional variables such as technology, emotion, and generation, making it difficult to comprehensively explain the complex psychological interaction

processes in the AI Sun Yanzi phenomenon. Second, research objects are predominantly purely two-dimensional virtual idols, with insufficient discussion of the special form of "digitized real-person idols" that possess both technological simulation and emotional historicity. Third, methodologically, research is biased toward quantitative description or speculative analysis, lacking qualitative exploration of fan psychological processes – particularly an in-depth psychological comparison across generational cohorts. The breakthroughs of this study lie in: employing communication psychology theories as an integrated framework, focusing on digitized real-person idols as a new emerging form, and using in-depth interviews to reveal the internal psychological mechanisms of intergenerational emotional identification.

### 3. Methodology

This study adopts the in-depth interview method as its primary research methodology, aiming to deeply explore the cognitive attitudes, emotional experiences, and psychological construction processes of identity among different generational groups regarding AI Sun Yanzi. The research design follows the logical chain of "theoretical presuppositions – question generation – meaning interpretation," using the Uses and Gratifications Theory, Social Identity Theory, and Affect Transfer Theory as theoretical presuppositions. An interview guide was designed around three core dimensions: technology acceptance, emotional projection patterns, and identity construction. Interview questions were designed to combine openness with guided inquiry – such as "When you first heard AI Sun Yanzi's singing, what feelings did you have?" and "What do you think is the relationship between AI Sun Yanzi and the real Sun Yanzi?" – to encourage interviewees to fully express their deep psychological cognition and emotional experiences.

Purposive sampling was employed, selecting eight interviewees from four generational cohorts: those born in the 1970s, 1980s, 1990s, and after 2000. The sample covered diverse occupational backgrounds (self-employed, marketing professionals, teachers, students, freelancers, etc.) and geographic distributions (Chongqing, Nanjing, Lijiang, Henan, Guizhou, Liaoning, Beijing, etc.). Sample selection followed these criteria: basic familiarity with Sun Yanzi and her music; varying degrees of experience with AI technology; and an age range covering typical generational groups of both digital immigrants and digital natives. Specific sample characteristics: one interviewee born in the 1970s (age 48, self-employed); one born in the 1980s (age 35, marketing); three born in the 1990s (ages 30-31, freelancer, tourism professional, teacher); and three born after 2000 (ages 17-25, music producer, students). This sample structure ensures the salience of intergenerational differences while also accounting for the diversity of social background variables such as occupation and geography.

Interviews were conducted through a combination of online video conferencing and face-to-face meetings, lasting 20-40 minutes each, with all interviews recorded upon consent. Data analysis employed a three-level coding method: open coding extracted high-frequency keywords and units of meaning from transcribed texts such as "nostalgia," "technological novelty," "emotional substitution," and "authenticity"; axial coding integrated these keywords to form core themes including "technology acceptance," "emotional projection patterns," "identity," and "generational differences"; selective coding linked core themes to the communication psychology theoretical framework, constructing an analytical system of mutual verification between theory and data. Throughout the coding process, comparative analysis of responses across different generations was emphasized to reveal the specific manifestations and internal causes of generational differences.

## **4. Discussion**

### **4.1. Differentiation of Psychological Mechanisms in Intergenerational Technology Acceptance**

The study finds that different generational cohorts exhibit significantly gradient differences in their technology acceptance of AI Sun Yanzi – differences that are essentially a profound imprint of "media socialization experience" at the individual psychological level. The interviewee born in the 1970s, Yang Lu, perceived AI Sun Yanzi as a "high-end media player," with an initial reaction filled with bewilderment at "a singing star using AI to sing." This resistance stems from a media cognitive schema shaped by growing up in the era of physical records, in which music consumption was deeply bound to the "physical presence of the real person" – technology was viewed as an interference with, rather than an extension of, traditional musical experience. The interviewee born in the 1980s, Jing, although viewing AI Sun Yanzi as a novelty and able to gain a new experience when some covers are well-executed, still firmly believed that "the status of the real Sun Yanzi cannot be replaced." This "cautious observation" attitude reflects the psychological adjustment process of digital immigrant groups under the impact of technology: they neither reject technological innovation nor abandon their emotional inertia toward real-person idols.

The attitudes of those born in the 1990s exhibited notable divergence: Xiaopang acknowledged AI Sun Yanzi's innovation and playability but sharply pointed out its deficiency of "lacking emotional coloring"; Mr. Xiong presciently believed that "technological development may enable AI Sun Yanzi to replace the real person for commercial activities"; Xiao'an viewed it as a "peripheral extension" of the real person. This divergence stems from the special media growth environment of the 1990s cohort – having experienced the transition from physical to digital media, they retain emotional memories of real-person idols while maintaining an open attitude toward new technology, seeking a balance between "technological

rationality" and "emotional attachment." Those born after 2000 generally demonstrated an embrace of technological novelty: Gangan thought "AI Sun Yanzi is cool because the AI technology behind it is trendy"; Gao Jialin anticipated more lyrical song covers while also emphasizing that "Sun Yanzi herself is irreplaceable." This contradictory mentality corroborates Yuan Weijun's "digital native paradox" – the higher the degree of technological immersion, the stronger the individual's psychological need for "authenticity" [13]. Post-2000 interviewees compared AI Sun Yanzi to a "fast food burger" – enjoying its convenience while craving "the warmth of the chef" – profoundly embodying the psychological tension of Generation Z between technological dependence and humanistic pursuit.

#### **4.2. Dual Patterns of Emotional Projection and Their Psychological Motivations**

In the dimension of emotional projection, the study reveals two typical patterns – nostalgia-driven and entertainment-consumption-driven – each corresponding to the psychological needs and memory structures of different generational cohorts. The nostalgia-driven identification, exemplified by Xiao'an, a teacher born in the 1990s, is characterized by transforming the AI vocal timbre into a material carrier for activating collective memory. Xiao'an described: "AI Sun Yanzi's voice is like a time machine, instantly transporting me back to late-night self-study sessions in 2003, listening to Yu Jian (Encounter) on my MP3." This reaction accords with Stern's "emotional resonance field" theory proposed in *The Future of Nostalgia* – technologically replicated "old items" can activate the emotional memories of specific eras, but their efficacy is strictly constrained by the strength of the user's original memories. However, this nostalgia-based emotional projection has an inherent fragility; Xiaopang noted: "Listening to AI covers is like watching a restored version of an old film – the picture is clearer, but the grain of the celluloid is the soul." This metaphor reveals the dual nature of nostalgia in the digital era: while technology can replicate the content form, it struggles to reproduce the unique sensory experience brought about by the materiality of the medium.

Entertainment-consumption-type interaction is primarily reflected in the media use behaviors of those born after 2000, who regard AI Sun Yanzi as an "entertainment fast consumer product." Gangan's usage scenario is highly representative: "When gathering with friends, we play with AI voice-changing software, laughing as we record meme-style videos, but we forget about it the next day." This superficial participation pattern corroborates Zhan Hongwei's "virtual idol bubble theory" – technology-driven novel experiences easily attract brief attention but struggle to precipitate into stable emotional bonds [10]. Notably, underlying this entertainment consumption behavior is a redefinition of idol power by fans. Gao Jialin mentioned: "When we use AI to make Sun Yanzi sing Gu Yong Zhe (Brave), we are actually 'controlling' the idol." Fans' reconstruction of the idol image through technological means is essentially an extension of Jenkins' "participatory culture," but this

"control" may also lead to the dissolution of the idol's subjectivity, triggering new identity confusion.

### **4.3. Intergenerational Politics of Identity and the Post-Human Predicament**

In the dimension of AI Sun Yanzi's identity construction, generational groups exhibit a cognitive divergence between "instrumentalism" and "symbiosis theory," which essentially reflects the identity crisis in a post-human context. The majority of interviewees (6/8) maintain the "tool" attribute of AI Sun Yanzi; Xiaopang emphasized: "AI is no different from a microphone — it is merely an amplifier of Sun Yanzi's voice." This cognition is consistent with Xie Yingchun's "cultural consumption carrier" theory [3]. However, the improvement of technological fidelity is shaking this traditional cognition; Mr. Xiong proposed: "If AI can completely simulate Sun Yanzi's way of speaking, does it count as another her?" This ontological confusion directly touches on the post-human predicament that Hayles described as the "collapse of the human/object dichotomy" — when an artifact acquires quasi-subjective characteristics, human traditional coordinates of identity cognition face reconstruction.

The intergenerational divergence in identity politics is even more pronounced: younger groups (born after 2000) focus more on AI's "co-creative potential" — Wang Yiyang envisions "fans using AI tools to help idols write songs in the future, like a virtual record label" — reflecting digital natives' optimism toward technological empowerment and their pursuit of deconstructing authority and diverse co-creation. Middle-aged groups (those born in the 1970s and 1980s) emphasize that "ownership is non-transferable": Yang Lu insists "Sun Yanzi's voice belongs only to herself — AI merely rents it," reflecting digital immigrants' adherence to the traditional intellectual property system. This divergence is essentially a difference in the intergenerational power structure of technological cognition: younger groups, having grown up in an era of technological explosion, are more accustomed to viewing technology as a partner in identity construction, while middle-aged groups tend to view technology as a controllable tool. The cognitive conflict between the two reveals the multiple possibilities and potential tensions of identity construction in the digital era.

## **5. Conclusion**

Employing communication psychology theories as an analytical framework, this study systematically examined the internal mechanisms of intergenerational emotional identification in the AI Sun Yanzi phenomenon, reaching the following core findings: First, intergenerational differences in technology acceptance are rooted in individuals' divergent media socialization experiences; the "cautious observation" of those born in the 1970s and 1980s, the "attitudinal divergence" of those born in the 1990s, and the "novelty embrace" of those born after 2000 are, in

---

essence, the external manifestations of the difference between digital immigrants and digital natives in their modes of technological cognition. Second, emotional projection presents two patterns — nostalgia-driven and entertainment-consumption-driven; the former relies on the activation of collective memory, while the latter emphasizes the entertainment experience of technological interaction, reflecting the different memory structures and media usage habits of different generational cohorts. Finally, the divergence between "instrumentalism" and "symbiosis theory" at the identity level reveals the post-human identity crisis triggered by improving technological fidelity, as well as the difference in the intergenerational power structure of technological cognition.

At the theoretical level, this study's contributions are threefold: first, it validates the explanatory power of core communication psychology theories such as Uses and Gratifications Theory and Social Identity Theory in new technological contexts, while identifying the necessity of theoretical extension — for instance, Affect Transfer Theory needs to shift from a unidirectional projection to a bidirectional interaction perspective; second, it proposes that "media socialization experience" is the core variable for understanding intergenerational differences in virtual idol communication, supplementing the analytical dimensions of existing intergenerational communication theory; third, it reveals that the emotional identification of "digitized real-person idols" possesses the dual attributes of "memory attachment" and "technological innovation," providing a new theoretical analytical framework for virtual idol research. These findings not only enrich the research content of communication psychology in the field of digital culture, but also provide a useful reference for understanding human psychological transformation in the age of technology.

The limitations of this study are primarily reflected in the sample scale and coverage: the eight interviewees cover the main generational cohorts, but the sample size is relatively small, and all are fans of Sun Yanzi, so the universality of the conclusions awaits verification by larger-scale, more diverse samples. Future research can be expanded in three directions: first, combining quantitative research methods and expanding sample coverage to examine psychological differences across different regions and fan groups; second, conducting longitudinal research to track the long-term impact of AI idols on fan emotional identification and analyze the dynamic relationship between technological fidelity and emotional identification; third, expanding research objects to encompass more cases of digitized real-person idols, comparing differences in emotional identification mechanisms across idol types, to provide richer empirical support for the application of communication psychology theories in emerging fields such as the metaverse and embodied communication. In an era where algorithms continuously reconstruct the media ecology, research on the communication psychology of virtual idols is not merely an interpretation of technological phenomena, but a deep-level exploration of the

essence of human emotion and identity.

## References

- [1] Yu, G., & Geng, X. (2020). On the technological empowerment and simulacrum deconstruction of virtual idols in the era of artificial intelligence [in Chinese]. *Journal of Shanghai Jiao Tong University (Philosophy and Social Sciences)*, 28(1), 23-30. <https://doi.org/10.13806/j.cnki.issn1008-7095.2020.01.006>
- [2] Editorial Office of Anime Encyclopedia 3. (2014). *Anime Encyclopedia 3* [in Chinese] (p. 170). Aviation Industry Press.
- [3] Xie, Y. (2022). Cultural empowerment and cultural imagination of virtual idols [in Chinese]. *Journalism & Communication Review*, 75(2), 91-102. <https://doi.org/10.14086/j.cnki.xwycbpl.2022.02.009>
- [4] Guo, Q. (2022). The current situation, key issues, and future of virtual digital humans [in Chinese]. *Journalism and Writing*, (7), 56-64.
- [5] Zhou, Y. (2023). A literature review on virtual idols in domestic journals from 2018 to 2022 [in Chinese]. *Guide to Journalism Research*, 14(3), 12-15.
- [6] Yao, R., & Huang, T. (2021). Communication paths and industrial models of contemporary virtual idols: A case study of virtual idol group K/DA [in Chinese]. *Modern Communication (Journal of Communication University of China)*, 43(11), 125-130. <https://doi.org/10.19997/j.cnki.xdcb.2021.11.022>
- [7] iFanr. (2016, December 31). Virtual idols: A binary artificial dream [in Chinese]. Retrieved from [http://www.sohu.com/a/123090526\\_413981](http://www.sohu.com/a/123090526_413981)
- [8] Liu, J. (2023). Current status and trends of AI participation in entertainment programs [in Chinese]. *Media*, (16), 53-55.
- [9] Zhan, H. (2019). Identity construction of online virtual idols and fan communities [in Chinese]. *Youth Journalist*, (11), 7-8. <https://doi.org/10.15997/j.cnki.qnjz.2019.11.004>
- [10] Li, Y. (2021). Construction and maintenance of virtual idol persona symbols from a converged media perspective [in Chinese]. *New Media Research*, 7(14), 101-103.
- [11] Rahmi, M. S., Rahmal, N., & Saleha, A. (n.d.). Posthuman in Japan popular culture: Virtual idol Hatsune Miku. *Annual International Conference on Language and Literature*, 1, 11-14.
- [12] Guga, J. (2015). Virtual idol Hatsune Miku: New auratic experience of the performer as a collaborative platform. In *Proceedings* (pp. 36-44). Springer.
- [13] Yuan, W., & Liang, J. (2024). Bibliometric-based visualization analysis of China's virtual idol knowledge mapping [in Chinese]. *Business Exhibition Economy*, (2), 74-77. <https://doi.org/10.19995/j.cnki.CN10-1617/F7.2024.02.074>
- [14] Zhang, Y., & Wang, W. (2023). Structural mapping and development trends of domestic virtual idol research over the past five years: A CiteSpace-based visual analysis [in Chinese]. *Science and Technology Communication*, 15(21), 24-29. <https://doi.org/10.16607/j.cnki.1674-6708.2023.21.028>
- [15] Li, Y. (2024). The erosion of oral communication by AI voice technology and countermeasures: A case study of AI voice technology Sovits [in Chinese]. *Audio-Visual*, (5), 138-142. <https://doi.org/10.19395/j.cnki.1674-246x.2024.05.028>