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# From Traditional to Artificial Intelligence-Driven Anthropomorphism: A Case Study of Chinese Computer-Animated Films (2019-2025)

[1] Sun Jinman, [2] \* Sharkawi Che Din

[1] Faculty of Film, Theatre and Animation, University Technology MARA &  
sunjune123@126.com

[2] Faculty of Art and Design, University Technology MARA &  
sharkawi237@uitm.edu.my

## ABSTRACT

This research aims to explore the reshaping effect of artificial intelligence (AI) technology on the semantic, mechanism and cultural connotations of traditional anthropomorphism. The research adopts a qualitative case study method, analysing five representative films alongside semi-structured interviews with 15 animation creators and 16 audience members. This interview data is analysed using a thematic analysis guided by the study's 'three-factor theory of anthropomorphism' and 'human-machine co-creation' frameworks. The results show that AI technology has transformed the anthropomorphism of animations from the subjective creation of animators into a collaborative effort between humans and machines, bringing about changes in the expression and creation methods of the works. Traditional anthropomorphism depends on animators to inject their understanding of culture and emotional insights into their works. The intervention of AI has generated a new creative model. Anthropomorphism not only relies on human empowerment but also uses technological assistance to evoke emotional resonance among the audience, ultimately achieving cultural regeneration. The algorithm participates in the construction of character personality through detail optimization, structure improvement and emotional coordination, enhancing the creative efficiency and character credibility, and maintaining the dominant position of human creation. At the same time, the digital recreation of traditional aesthetic elements has innovated traditional Chinese culture. This study has constructed an analytical framework from AI algorithms to cultural regeneration, enriching the theoretical connotation of anthropomorphism in the field of digital art. It provides practical inspiration for the integration of technology and culture in animation creation, the digital innovation of traditional culture, and the international dissemination of animation.

**Keywords:** *Anthropomorphism; Chinese Computer-Animated Film; AI; Character*

## INTRODUCTION

Since *The Monkey King: Hero Is Back* initiated the revival of Chinese computer animation in 2015, domestic animated films have made significant progress in box office, narrative and visual aesthetics (Lan, 2023). These successes are inseparable from the development of personification technology, which establishes connections with the audience by endowing characters with complex emotions and behaviours (Mourot et al., 2022). However, before the widespread involvement of AI, this kind of "humanization" was largely a direct manifestation of the subjective creation of animators (F. Jiang & Huang, 2017). Animators mainly rely on personal intuition, life observation and animation computer

technology to design every expression and movement of characters, which is a process highly dependent on subjective experience.

However, the participation of AI is fundamentally changing this "humanized" process (Mourot et al., 2022). The creation of character personalities is no longer confined to the subjective design of animators; it can also be generated through specific AI-driven technologies. For instance, deep learning algorithms can generate more subtle emotional responses that are not preset in scripts by analyzing large datasets of human behavior. (Mourot et al., 2022). Similarly, the combination of motion capture technology and AI algorithms enables animations to convey emotions more naturally and precisely (El-Raheb et al., 2025). This makes the character's personality no longer merely a product of the animator's intuition, but more like a new personality driven by data and generated comprehensively. This personality may even be richer than the original creativity.

The rapid development of AI technology has brought new ideas to animation creation (Gupta et al., 2024). Nowadays, with the intervention of AI, this "humanized" development has changed the subjective control of animators. AI systems can emergently generate novel character features that animators may not have anticipated by analysing large datasets of (human behaviour and audience feedback) (Rungruangjit et al., 2024). This has enabled Chinese computer animation to move from some ways of imitating American animation to a new stage of independently generating unique cultural connotations (Lan, 2023; Rungruangjit et al., 2024). In contemporary Chinese animation practice, AI is not only used to innovate character creation but also to assist in the digital integration of traditional artistic elements. For example, the workflow combined with AI and computer-aided design (CAD) technology is helping to optimize the expressiveness of the traditional ink wash painting style in 3D animation, making it more dynamic while retaining the connotation of traditional Chinese aesthetics (Du et al., 2024; Wu et al., 2025). Thanks to this, Chinese computer animation has gradually moved away from imitating others' creativity and production and has demonstrated the potential to independently generate unique cultural connotations (Lan, 2023).

However, the rapid development of this human-machine collaborative creation has also brought about new challenges that emergently need to be studied. A core question is: As algorithms increasingly get involved in character building and narrative decision-making, exactly how do they reshape the cultural identity and international dissemination of these works? At present, interdisciplinary research on the narrative logic and cultural mechanisms behind AI personification is still insufficient, which is precisely the gap that this study attempts to fill. This study aims to explore how AI technology reshapes the semantics, mechanisms and cultural connotations of personification in Chinese computer-animated films. The question under study is: In the context of the AI era, how can Chinese computer-animated films redefine personification? How do algorithms participate in the process of personality construction in character creation? How does this integration affect the cultural identity and international dissemination of Chinese computer-animated films? To answer these questions, this article will take five representative Chinese animated films as cases and explore the integration logic and cultural connotations of AI in anthropomorphic character design through interviews with animators (experts) and audiences.

## RESULTS AND DISCUSSION

### **How does Chinese computer-animation film redefine anthropomorphism in the context of AI?**

Redefining Anthropomorphism in the Context of AI In the context of the AI era, the definition of anthropomorphism in Chinese computer-animated films is shifting from subjective creation by

animators to a collaborative effort between humans and machines. Traditional anthropomorphism relied on the creator's personal refinement of cultural symbols and emotional logic. However, the intervention of AI has established a new paradigm characterized by technological empowerment, emotional resonance, and cultural regeneration. By enhancing external cues such as facial micro-expressions and voice emotions, AI technology lowers the threshold for audiences to project their emotions onto characters, transforming anthropomorphism from an active assignment of human traits into a natural, resonant experience. This shift signifies that anthropomorphism is no longer limited to the imitation of appearance and behaviour but emphasizes the precise transmission of emotions and the digital translation of cultural symbols through procedural design.

### **The path and mechanism of algorithm participation in character personality construction**

The algorithm mainly participates deeply in the shaping of the characters' personalities in animation from three aspects: detail presentation, structure sorting and emotion transmission. In terms of detail refinement, technologies such as distributed rendering and programmatic special effects can make the texture and feel of characters and their interaction with the surrounding environment more detailed and realistic, making the characters look more "realistic". In terms of structural design, the logical thinking of the algorithm can build a clear generation framework for the character's personality, allowing the character's behaviour to form a complete closed loop and eliminating the need for animators to repeatedly do repetitive work. In terms of emotional expression, algorithms act as a bridge, capable of transforming the inner feelings of characters into intuitive external presentations - for instance, they can make abstract emotions concrete in the form of particle ink wash and also support real-time interaction. In this way, the characters' personalities are no longer unilaterally displayed to the audience but have transformed into a two-way communication and response between the characters and the audience.

### **The Influence of human-machine integration on the cultural Identity and international Dissemination of Chinese Animated films**

The collision and integration of artificial intelligence technology and traditional culture are transforming the cultural expression and international dissemination forms of Chinese computer-animated films. During the creative process, the team utilized technology to digitally reconstruct traditional art elements such as ink wash painting and calligraphy (for instance, ink particle technology), transforming the originally static cultural symbols into products that combine the charm of Eastern aesthetics with a modern sense of technology. This novel presentation method enables overseas audiences to understand the cultural connotations behind it through intuitive visual experience without having a profound background in Chinese culture, significantly lowering the threshold for cross-cultural understanding. As a result, the international dissemination of Chinese computer-animated films has gradually shifted from merely exporting cultural content to a deeper level of value resonance. The mutual reinforcement of technology and culture has enabled Eastern stories to be understood and accepted by more people on the global stage and has also gained wider recognition.

## **CONCLUSION**

This study explores the reshaping effect of artificial intelligence (AI) technology on the semantics, mechanisms and cultural connotations of traditional personification. AI technology has driven a shift from subjective creation through software to human-machine collaboration. The research constructed an analytical framework from AI algorithms to cultural regeneration, indicating that while algorithms enhance creative efficiency and visual realism, human creators still maintain a dominant position in terms of value orientation.

Research has found that AI technology empowers personification by optimizing character details and structural logic, thereby enhancing emotional resonance. Furthermore, the digital reproduction of traditional elements (such as ink-wash particle technology) has strengthened the cultural identity of Chinese animation, enabling it to overcome cultural barriers and achieve international value resonance. Future development must address the ethical and aesthetic challenges pointed out in audience feedback (such as the "uncanny valley" effect), ensuring that technology serves the core of traditional culture rather than overshadowing it. This research provides a theoretical basis and practical reference for the continuous integration of technology and art in the digital age.

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