

The Application of CG Technology in Folklore-themed Films: Taking the "Nezha" Series as an Example

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Abstract: *This study is based on the theory of film semiotics and employs qualitative research methods. Taking the "Nezha" series of films directed by Jiaozi as an example, it delves into the application and significance of CG technology in folklore-themed films. Through the lens of semiotics, the study analyzes the visual, cultural, and narrative symbols in the films, revealing how CG technology shapes the visual style, inherits folklore culture, and drives the development of the story. The research adopts case analysis, textual analysis, and audience interviews to deeply interpret the symbolic elements in the films and explores their acceptance and cultural significance based on audience feedback. The findings indicate that CG technology not only enhances the visual appeal of the films but also effectively inherits and promotes Chinese folklore culture through the creation and use of symbols. However, challenges such as the diversity of symbol interpretation, in-depth exploration of cultural connotations, and differences in audience understanding also exist. Based on these findings, this paper proposes suggestions for optimizing symbol design, strengthening cultural research, and improving audience guidance. These recommendations aim to provide theoretical support and practical guidance for the application of CG technology in folklore-themed films, to promote the high-quality development of this genre, and to further promote excellent Chinese folklore culture.*

Keywords: CG technology, Film semiotics, Folklore culture, Nezha series

1. Introduction

1.1 Research Background

Film, being a multifaceted art form, serves not only as a visual and auditory spectacle but also as a significant medium for cultural preservation and transmission. With the swift advancement of technology, Computer Graphics (CG) has increasingly become an essential component of film production, greatly enhancing the visual expressiveness and narrative potential of films. Film semiotics, a significant field of film theory, posits that films communicate meaning through a system of symbols, offering a comprehensive theoretical framework for analyzing the visual, cultural, and narrative components of films. The integration of CG technology with film semiotics has introduced novel viewpoints and methodologies to film production, as well as new subjects for cinematic research.

In recent years, Chinese folklore films have attained significant popularity in both home and international markets, with the "Nezha" series directed by Jiaozi being particularly notable. These films possess not just remarkable visual effects but also distinctive creativity in cultural preservation and narrative construction. The "Nezha" series draws upon ancient Chinese mythology, employing CG technology to produce realistic characters and extraordinary visuals, while introducing traditional Chinese cultural themes, such the Five themes Theory and Xianxia culture, to the public in an innovative manner. The popularity of these films is attributed not only to their impressive visual effects but also to their adept preservation and promotion of Chinese folk culture through the invention and utilization of symbols. Consequently, utilizing the "Nezha" series as the subject of study, this research examines the application and importance of CG technology in folklore films via the lens of film semiotics, which holds considerable theoretical and practical value.

This study examines the symbolic components of the "Nezha" film series and offers filmmakers concrete ways and recommendations for employing CG technology to generate and utilize symbols, so augmenting the artistic value and cultural significance of the picture. This study, through audience interview analysis, offers insights for the distribution and promotion of films, enabling filmmakers to comprehend audience preferences and devise more effective marketing strategies, thus enhancing the market development and cultural impact of folk-themed films.

1.2 Research Objectives

This study aims to analyze the application and symbolic significance of CG technology in the "Nezha" series through the theoretical framework of film semiotics. The specific objectives include:

To interpret the visual, cultural, and narrative symbols in the films from a semiotic perspective, exploring how these symbols are created through CG technology and convey specific meanings within the films.

To analyze how these symbols influence the visual style, cultural inheritance, and narrative structure of the films, revealing the key role of CG technology in symbol generation and its impact on the overall effect of the films.

To understand the audience's understanding and feelings towards the symbolic elements in the films through audience interviews, revealing the diversity of symbol interpretation, cultural significance, and differences in audience acceptance.

To propose suggestions for optimizing the application of CG technology based on the research findings, providing theoretical support and practical guidance for the creation of future folklore-themed films, promoting the high-quality development of this genre, and further promoting excellent Chinese folklore culture.

1.3 Research Significance

From a theoretical perspective, this study applies the theory of film semiotics to the research of CG technology, enriching the content of film semiotics research and providing a new perspective for understanding the role of CG technology in films. Through an in-depth analysis of the symbolic elements in the "Nezha" series, this study helps to improve the theoretical system combining film technology and cultural inheritance, offering new ideas and methods for academic research in related fields.

From a practical perspective, this study provides specific methods and suggestions for filmmakers on how to create and use symbols through CG technology by analyzing the symbolic elements in the "Nezha" series, which helps enhance the artistic value and cultural connotation of films. In addition, through audience interviews and analysis, this study can also provide references for film distribution and promotion, helping film producers better understand audience needs and formulate more effective marketing strategies, further promoting the market development and cultural influence of folklore-themed films.

2. Literature Review

2.1 Overview of Film Semiotics Theory

Cinema semiotics, a significant field of cinema philosophy, arose in France during the 1960s. The fundamental perspective is that film, as a symbolic system, conveys meaning through visual and audio symbols. Christian Metz is a foundational figure in film semiotics. In "The Signifier of the Imaginary," he posited that the focus of film semiotics is the structure and function of cinematic language, highlighting that film generates meaning through a system of symbols (Metz, 1975). Metz's theory established the groundwork for film semiotics and offered a significant theoretical framework for future investigation.

Another significant academic is Roland Barthes. In "Principles of Semiotics," he elaborated on semiotic theory, positing that a symbol comprises a "signifier" and a "signified," with meaning conveyed through this binary connection (Barthes, 1964). Barthes' theory offers both a comprehensive theoretical foundation for film semiotics and a distinct methodology for examining the symbolic components in cinema.

2.2 CG technology and film semiotics

The advancement of CG technology has rendered the symbol system in films increasingly intricate and varied. CG technology not only generates novel visual signals but also amplifies the expressiveness of conventional symbols through special effects and animation. David Bordwell noted in "Film Art: Form and Style" that CG technology equips filmmakers with additional tools to construct and communicate symbolic meanings, encompassing people, scenes, and virtual components generated by special effects (Bordwell, 2007). Bordwell's research highlights the significant significance of CG technology in the creation of film symbols and offers a novel approach for comprehending the symbol system in contemporary cinema.

In China, scholar Yin Hong examined the influence of CG technology on Chinese cinema through several papers published in the magazine "Contemporary Film". He posits that CG technology not only augments the visual effects of films but also enriches their cultural significance through the production and utilization of symbols (Yin Hong, 2018). Yin Hong's research offers significant theoretical foundation for comprehending the utilization of CG technology in Chinese cinema.

2.3 Semiotics Investigation in Folklore Cinematography

Folk culture films, as a distinct genre, possess a symbolic structure imbued with profound cultural significance. Researchers like Maria Laura Pratt examined the depiction of folk culture in cinema and its symbolic significance in *Cultural Performance: Folk Culture and Modernity*. She indicated that folk culture films not only transmit cultural information via the construction and utilization of symbols but also shape the audience's understanding of folk culture (Pratt, 1998).

In his paper "Folk Culture Symbols in Chinese Films," published in Film Art, Zhou Xing conducted a thorough analysis of the symbolic aspects and cultural importance inside Chinese folk culture cinema. He asserts that Chinese folk culture films proficiently preserve and advance Chinese traditional culture through the invention and utilization of symbols (Zhou Xing, 2015). Zhou Xing's research offers a significant theoretical foundation for comprehending the symbolic system inside Chinese folk culture films. Nonetheless, current study remains deficient in examining the integration of CG technology and folk culture films. The majority of research concentrate on the visual impacts of CG technology and the superficial examination of cinema narratives, with a paucity of comprehensive analyses on symbol systems. Moreover, current research predominantly emphasizes the generation and utilization of symbols, while the analysis of symbol interpretation and audience reception remains comparatively inadequate. This study selects the "Nezha" film series as a case study, utilizing film semiotics theory to thoroughly investigate the application of CG technology in folk culture-themed films and its symbolic implications, with the objective of addressing existing research deficiencies and offering novel perspectives and methodologies for inquiry in this domain.

3. Research Methods

This study employs qualitative research methods, including case analysis, textual analysis, and audience interviews, to explore the application and symbolic significance of CG technology in folklore-themed films. These methods complement each other, providing a comprehensive and in-depth perspective for the research.

3.1 Case Analysis Method

Case analysis is one of the core methods of this study, aiming to reveal the application and symbolic significance of CG technology through an in-depth examination of specific film works. The study selects *"Nezha: The Rise of the Devil-Boy"* and *"Nezha: The Battle at the Dragon King's Palace"* directed by Jiaozi as research cases. These two films have not only achieved great success in visual effects but also hold significant research value in cultural inheritance and storytelling. The choice of these films is due to their representation of the peak of CG technology application in recent Chinese folklore-themed films, and their typicality in the creation and use of visual, cultural, and narrative symbols. Through case analysis, this study will provide a detailed interpretation of the symbolic elements in the films, exploring how CG technology influences the visual style, cultural inheritance, and narrative structure through the creation and use of symbols.

3.2 Textual Analysis Method

Textual analysis is a commonly used method in film semiotics research, revealing the meaning of symbols through the analysis of elements within the film text. This study will apply textual analysis to provide a detailed interpretation of the visual, cultural, and narrative symbols in the "Nezha" series. The specific steps include symbol identification, classification, and interpretation. First, by watching the films, we identify the visual symbols (such as set design, character images, special effects production), cultural symbols (such as the Five Elements theory, xianxia culture, mythological stories), and narrative symbols (such as plot structure, character development, narrative pace). Next, the identified symbols are classified to systematically analyze their roles and meanings within the films. Finally, combining the theory of film semiotics, we conduct an in-depth interpretation of the classified symbols, exploring how they are created through CG technology and their functions in film narration and cultural

inheritance. Textual analysis will focus on the creation process of symbols, the relationships between symbols, and how symbols influence the audience's understanding and feelings.

3.3 Audience Interview Method

Audience interviews serve as an important supplementary method in this study. By engaging in face-to-face conversations with viewers, we collect their interpretations and feelings towards the symbolic elements in the films. The interviewees include audiences of different ages and cultural backgrounds to obtain diverse feedback. The interview questions will revolve around the audience's understanding, acceptance, and cultural significance of the visual, cultural, and narrative symbols in the films. The specific steps include interview design, implementation, and data analysis. First, we design an interview outline to ensure that the questions cover the main symbolic elements and their meanings in the films. Next, we select representative audience members for interviews, focusing on guiding them to express their genuine feelings and understandings during the process. Finally, we organize and analyze the interview records to extract the audience's interpretations and feedback on the symbolic elements, revealing the diversity of symbol interpretation, cultural significance, and differences in audience acceptance. Audience interviews will provide first-hand audience feedback, revealing the actual effects and meanings of symbols at the audience level.

By integrating these three methods, this study will provide a comprehensive and in-depth exploration of the application and symbolic significance of CG technology in folklore-themed films, offering new perspectives and methods for research in this field.

4. Data Analysis

4.1 Visual Symbol Analysis

In the "Nezha" film series, CGI technology has produced numerous striking visual symbols that not only augment the picture's aesthetic appeal but also convey profound cultural significance. The film's scene design showcases a distinctive visual aesthetic achieved with CGI technology. The picturesque village of Chentangguan and the enigmatic Dragon Palace beneath the water provide not only a striking visual experience but also exemplify the allure of ancient Chinese culture via meticulous design. The architectural style of Chentangguan integrates old Chinese characteristics, including floating eaves, arches, carved beams, and painted structures, while the sophisticated application of CG technology immerses the spectator in an authentic ancient town experience.

Nezha's character design embodies traditional rebelliousness and unruliness, infused with contemporary energy through current aesthetics. CG technology not only defines Nezha's appearance but also enhances the character's motions and expressions, rendering them more natural and fluid through animation production. For instance, Nezha's "magic pill" representation, characterized by dark circles, sharp fangs, and other attributes, is clearly shown by the meticulous application of CG technology. The traits of the character's personality. Ao Bing's depiction embodies the enigma and grandeur of the dragon lineage. The meticulous modeling and animation creation utilizing CG technology renders the character's motions and expressions more fluid and lifelike.

The film's five elemental special effects are rendered with realism with CG technology. The battle sequence between Nezha and Ao Bing exemplifies how the special effects of fire, water, and earth not only amplify the visual intensity of the confrontation but also illustrate the five elements theory inherent in Chinese traditional culture through meticulous special effects

design. The visual symbols, facilitated by CG technology, not only augment the film's visual effects but also communicate profound cultural meanings, allowing the viewer to appreciate the allure of traditional Chinese culture while viewing the movie.

4.2 Analysis of cultural symbols

The "Nezha" film series vividly showcases parts of traditional Chinese culture through computer-generated imagery technology. These cultural markers enable the spectator to experience the profound ambiance of Chinese traditional culture while simultaneously imparting positive morals through contemporary cinematic language. The five elements theory depicted in the film is a significant aspect of traditional Chinese culture. The film vividly depicts the five elements through the fabrication of spectacular effects using CG technology. The intensity of fire, the fluidity of water, the weight of earth, and other components are augmented by visual effects, facilitating the audience's comprehension and acceptance of these ancient cultural beliefs.

Xianxia culture serves as a significant cultural emblem in the film. The Xianxia sequences in the film, including Taiyi Zhenren's Xianfu and Nezha's Qiankun Circle, are meticulously crafted using CG technology, exemplifying the enigma and imagination of ancient Chinese Xianxia culture. These cultural markers not only augment the film's cultural significance but also facilitate the audience's appreciation of traditional Chinese culture through enhanced visual effects.

The mythological narratives in the film serve as significant cultural emblems. The narrative of Nezha is derived from ancient Chinese mythology. The reinterpretation of CG technology has revitalized this ancient narrative. The portrayal of Nezha in the film embodies historic defiance and tumultuousness, infused with contemporary energy through innovative design. Nezha's assertion, "My life is determined by me, not by heaven," encapsulates the rebellious ethos and quest for self-worth inherent in traditional Chinese culture. The development and utilization of CG technology enable these cultural symbols to evoke a profound sense of traditional Chinese culture while imparting positive ideals through contemporary cinematic language, so revitalizing traditional culture within modern society.

4.3 Narrative Symbol Analysis

In the "Nezha" film series, CG technology not only augments the visual effects but also significantly contributes to the plot. Narrative symbols augment the film's tale and allure via plot settings, character development, and narrative cadence. The film's plot settings are rendered more vivid and captivating with the use of CG technology. The confrontation between Nezha and Ao Bing intensifies the battle's suspense through enhanced visual effects while simultaneously illustrating the characters' conflict and development within the plot's framework. These plot settings are enhanced by CGI technology to render the narrative more comprehensive and three-dimensional.

CG technology enhances character development by rendering motions and expressions more fluid and lifelike through meticulous animation production. For instance, Nezha evolves from a defiant adolescent into a valiant hero. The character development process is rendered more realistic and poignant by the sophisticated application of CG technology. Ao Bing's character development is rendered more nuanced and authentic with the use of CG technology. Character developments are generated and utilized by CG technology, which not only enriches the film's narrative but also facilitates the audience's perception of the characters' growth and transformations via enhanced visual effects.

CG technology augments the narrative pace and tension of the picture via special effects creation and scene transitions. The film's climax is rendered more intense and exhilarating with the application of CGI technology. These narrative rhythms are enhanced by CGI technology to accentuate the film's storyline and facilitate audience engagement.

4.4 Analysis of audience reaction

This study gathered extensive primary data through audience interviews to enhance comprehension of the audience's perceptions and emotions regarding the symbolic aspects in the "Nezha" film series. The interviewers comprised individuals of varying ages and cultural backgrounds to elicit various comments. The interview questions focused on the audience's comprehension, acceptability, and cultural importance of visual, cultural, and narrative symbols in the film.

The interviews revealed that the majority of attendees distinctly acknowledged the visual and cultural markers in the film. The audience widely regarded the visual effects in the film as remarkable, particularly the fantasy sequences and character representations generated by CGI technology. Many spectators noted the "magic pill" representation of Nezha and the dragon depiction of Ao Bing, asserting that both characters effectively conveyed their traits through the meticulous application of CG technology. Furthermore, the audience significantly acknowledged the cultural markers inside the picture, asserting that it effectively displayed the allure of traditional Chinese culture with CGI technology.

Nonetheless, certain viewers have alternative interpretations of the symbolism inside the film. Certain viewers contended that various cultural symbols in the film were overly intricate and necessitated additional contextual information for complete comprehension. Some viewers encountered challenges comprehending the notion of the five elements and felt that additional explanations were necessary to enhance their knowledge of these cultural symbols. Moreover, certain spectators possessed alternative interpretations of the narrative symbols within the picture, contending that specific plot elements and character developments necessitated additional details to improve the story's coherence.

This study uncovered the diversity of symbol interpretations, cultural importance, and variations in audience acceptability through interviews. These critiques offer significant insights for filmmakers, aiding them in effectively balancing technical innovation with cultural heritage in future projects, so augmenting the creative worth and cultural significance of the picture.

5. Research Conclusions

This study examined the deployment of CG technology in the "Nezha" film series and its symbolic value, utilizing case analysis, text analysis, and audience interviews, grounded in the theory of film semiotics. The study demonstrated that CG technology significantly influenced visual presentation, cultural legacy, and narrative structure, while also highlighting the diversity of symbol interpretation and variations in audience reception.

CG technology produced remarkable visual effects for the "Nezha" film series through intricate scene design, character modeling, and special effects creation. These visual elements not only augment the cinematic experience but also exemplify the allure of traditional Chinese culture through meticulous design. The video prominently showcases traditional Chinese cultural symbols, including the Five Elements Theory, Xianxia culture, and mythological narratives,

utilizing CG technology to portray affirmative values. CG technology amplifies narrative symbols, thereby accentuating the film's storyline and augmenting viewer immersion through improved plot setting, character development, and narrative pacing.

Audience interviews, however, disclosed the variability in symbol interpretation and disparities in audience acceptability. Certain viewers struggle to comprehend the cultural symbols in the film and contend that more contextual knowledge is necessary to completely grasp their significance. Moreover, certain viewers possess varying interpretations of the narrative symbols inside the film, contending that specific plot situations and character developments necessitate additional specifics to augment the coherence of the story.

This study presents the following optimization recommendations based on the aforementioned research findings: Filmmakers should enhance the precision of symbol design to guarantee that symbols effectively communicate cultural implications. Secondly, the examination of traditional Chinese culture must be intensified to guarantee that the utilization of symbols effectively communicates cultural values. Third, the audience's comprehension and acceptance of symbols can be enhanced by various methods, such as promoting cultural symbols via marketing materials or conducting cultural lectures following the film's release. A balance must be achieved between technological innovation and cultural heritage to ensure that the utilization of CG technology supports cultural preservation and amplifies the expressiveness of symbols through technical methods, rather than merely seeking visual effects.

The aforementioned optimization recommendations can enhance the creative value and cultural significance of folk culture-themed films, support their high-quality development, and further advance China's exceptional folk culture. This study offers a novel perspective on the utilization of CG technology in folk culture-themed films and delivers concrete practical advice for filmmakers, thereby facilitating the advancement of China's film industry and the propagation of Chinese culture.

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