

Analysis of the Colour Characteristics of Jiaodong Paper-Cutting Art in "Calabash Brothers" Based on the Perspective of Barthes's Semiotic

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ABSTRACT

Based on Barthes's semiotic perspective, this study deeply analyses the colour design characteristics of Jiaodong paper-cutting art in the classic animation "Calabash Brothers". The study uses qualitative research methods to explore how it conveys deep cultural connotations and emotional expressions through visual elements, aiming to reveal the semiotic significance and visual expression of traditional folk art in modern film and television works. Through the theoretical framework of Barthes's semiotics and from the two levels of "signifier" and "signified" of symbols, we analyse how the formal characteristics and cultural connotation of Jiaodong paper-cutting art are inherited and reproduced in "Calabash Brothers". The article first sorts out the unique visual language of Jiaodong paper-cut art, including its use of bright primary colours, strong colour contrast, and expression of emotional tension. Secondly, it explores how these characteristics are reflected in animation and form a distinctive national artistic style. The "Calabash Brothers" cartoon absorbs the essence of Jiaodong paper-cutting art and recreates it through the animation medium, which not only gives new vitality to traditional art, but also enhances the expressiveness and communication power of its symbols. This analysis aims to provide theoretical support for the modern application of traditional art and promote its new vitality in a broader cultural context.

Keywords: Jiaodong Paper-Cut Art, "Calabash Brothers", Colour Characteristics, Semiotic Analysis, Chinese Paper-Cut Animation



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1 INTRODUCTION

1.1 Jiaodong Paper-Cut Art

Chinese culture has always been an important part of world culture. In 2009, after being reviewed and approved by the United Nations Intergovernmental Committee for the Protection of Intangible Cultural Heritage, 14 provinces and cities in China, including Shandong, Shaanxi, Hebei, Shanxi, and Guangdong, jointly applied for the "Chinese Paper-cutting", officially included in the "List of Representative Works of Human Intangible Cultural Heritage", "Jiaodong Paper-cutting Art" of Jiaodong Peninsula, Shandong Province (see Figure 1) is a member of the team that successfully applied for "Chinese Paper-cutting" and has an important historical position in the intangible cultural heritage.



Figure 1 Jiaodong Paper-Cut - Window Skirt.
(Source: Photographed by the author.2024)

Jiaodong paper-cutting has a long history. It originated before the Han and Tang Dynasties. At that time, folk women used gold and silver foil and coloured silk to cut ornaments. Later, it evolved into the art of multi-colour paper-cutting and was used for festival decorations. According to historical records such as "Zhaoyuan County Chronicle" (2008) and "Laiyang County Chronicle" (1995), from the late Yuan and early Ming Dynasties to the Ming and Qing Dynasties, paper-cutting was widely popularized in Jiaodong and reached its peak, forming the saying that "the picture must be intentional and the intention must be auspicious" cultural characteristics. As a folk-art form, Jiaodong paper-cut art is famous for its distinctive modeling characteristics and strong regional cultural characteristics.

Jiaodong paper-cutting uses manual cutting as the main technique, and the works are mostly themed with animals, plants, and folk scenes. The lines are concise and smooth, the shapes are exaggerated and vivid, and the colour contrast is strong, which has a high visual impact. These characteristics not only show the natural features and humanistic traditions of Jiaodong area, but also reflect the unique aesthetic taste and spiritual pursuit of Chinese folk art. From Taoist music paper-cutting to Qi Jiguang's military training and other related paper-cutting, it shows that it has been popular for a long time. The themes, styles and techniques have been rich and mature, reflecting the exquisite paper-cutting skills of Jiaodong women.

In modern times, inheritance and innovation have gone hand in hand, retaining tradition while actively expanding application areas, extending from traditional door and window decoration to advertising binding, film and television animation, etc., and developed more than a hundred extended products to demonstrate its unique cultural charm and tenacity in modern society. vitality.

1.2 Chinese Paper-Cut Animation - "Calabash Brothers"

"Calabash Brothers" is a classic in the history of Chinese animation. Since its first broadcast in 1986, "Calabash Brothers" has been deeply loved by the audience for its unique artistic style and narrative method rich in national characteristics. This animation is not only a common childhood memory for generations, but also occupies an important position in the history of the development of Chinese animation art. It still has high ratings (see Figure 2.).



Figure 2 "Calabash Brothers" 1986 Douban ratings of the "Chinese School"
(Source: <https://movie.douban.com/subject/1428576/>)

In the construction of the visual style, various artistic elements of Jiaodong paper-cutting were borrowed. For example, the characters in the animation have obvious exaggerated characteristics, and the proportional design of large heads and small bodies is in line with the expression techniques of characters in Jiaodong paper-cutting. In addition, the design of the animation scene also reflects the flat and decorative characteristics of paper-cut art. Elements such as buildings, mountains, rivers, and trees are simplified and exaggerated to present a strong decorative effect and national customs. In terms of the use of colour, "Calabash Brothers" uses sharp contrasting colours to strengthen the visual tension of the picture, which echoes the strong colour contrast of Jiaodong paper-cutting, which is mainly red, black and white.

By analysing the visual style characteristics of Jiaodong paper-cut art in "Calabash Brothers", we can gain a deeper understanding of the reproduction and innovation of Chinese traditional cultural symbols in the contemporary context. At the same time, this also provides important inspiration for the development of Chinese animation art, that is, how to maintain cultural confidence and tell Chinese stories well in the context of globalization.

1.3 Roland Barthes' Semiotics and Jiaodong Paper-Cutting Art in "The Calabash Brothers"

Barth's semiotic theory provides an important theoretical tool for interpreting the meaning of symbols in visual art. Roland Barthes believes that semiotics is the study of symbols and their meanings. Through the analysis of symbols, the deep cultural meanings hidden behind the appearances can be revealed. From this perspective, the visual colour style of "Calabash Brothers" can be regarded as a symbolic system, and the colour elements used in its pictures contain profound cultural symbolic meanings. As a folk-art form rich in symbolic meaning, Jiaodong paper-cutting's unique colour language and cultural connotation are an important part of this symbolic system.

From a semiotic point of view, the application of Jiaodong paper-cutting art in "Calabash Brothers" is not only a reference to visual style, but also the inheritance and innovation of cultural symbols. Traditional symbols in paper-cut art, such as dragons and phoenixes, flowers, birds, fish and insects, are not only reproduced in animations, but also given new meanings through animated narratives. For example, the gourd, as an auspicious symbol in traditional Chinese culture, is endowed with magical power in "The Calabash Brothers" and symbolizes justice and unity. This transformation and re-creation of symbols not only makes animation works more vivid and interesting, but also provides a new path for the modern dissemination of traditional culture.

In short, the analysis of the visual style characteristics of Jiaodong paper-cutting art in "Calabash Brothers" from the perspective of Barth's semiotics not only helps to reveal the artistic value and cultural significance of this classic animation work, but also contributes to the modern inheritance of traditional art. Provides new research perspectives. This research not only has academic value, but also has important reference significance for contemporary art creation practice.

2 LITERATURE REVIEW

2.1 Jiaodong Paper-Cut Art

Shandong paper-cutting is roughly divided into two types geographically: one type is represented by the paper-cutting area in Binzhou at the mouth of the Yellow River, and its style is characterized by roughness; the other type is represented by the paper-cutting area in Jiaodong area along the Bohai Sea, and its style is characterized by its delicate style. This difference in style seems to be related to the different regional characteristics of the inland and coastal areas where the two live (Ren.2016). The custom of posting paper-cuts on festive occasions is very common among Jiaodong folk. At the end of the Qing Dynasty and the beginning of the Republic of China, the folk paper-cutting art in Pengcai, Huangxian, Yexian and Zhaoyuan areas in the northeastern and eastern Jiaodong areas reached a very high level and formed a tradition that continues to this day (Meng.2020). The patterns of Jiaodong paper-cutting can be described as all-encompassing, such as plants, flowers, animal patterns, religious morals, etc. These specific patterns and harmonious meanings are ways for the working people of Jiaodong to express their best wishes, showing strong Jiaodong regional characteristics (Xue.Li.2022).

2.2 Chinese Paper-Cut Animation - "Calabash Brothers"

In recent years, with the rise of the revival of traditional Chinese culture, people have paid more and more attention to the combination of traditional art forms and modern creation. For example, (Zhu Z.W..2024) Zhu Ziwei studied the application of Chinese paper-cutting technology in modern clothing design. (Fang, 2025). Fang Tian analyses The Embodiment of Philosophy in Traditional Chinese Colour Paper-Cutting Art. (Gao.Q.& Gao.Y.2024) Gao Qingxue and others discussed the aesthetic construction of Chinese paper-cut cartoons.

Chinese paper-cut animation has gone through a period of exploration and maturity from 1958 to 1976, to a prosperous period from 1976 to 1989, and then to a period of decline since 1990. "Calabash Brothers" was born in the heyday of the development of Chinese paper-cut animation in 1986 in Shanghai. The 13-episode series of paper-cut cartoons "Calabash Brothers" produced by Art Film Studio is different from other paper-cut films that emphasize form. "Calabash Brothers" (see Figure 3) Emphasizing content and narrative, it has achieved a certain degree of commercial success and has become a classic of Chinese animation.



Figure 3 1986 Stills of "Calabash Brothers"
(Source: Baidu Encyclopedia)

As a successful case, "Calabash Brothers" provides valuable experience for us to explore the application of traditional cultural symbols in modern art. The cartoon contains rich elements of Chinese culture, such as the character design incorporating traditional Chinese New Year paintings, paper-cutting art, etc. The scene settings also have strong Chinese customs, such as Calabash Mountain, caves, etc., which reflect the aesthetic characteristics of traditional Chinese culture (Zeng.2015). Calabash's image of a tough guy and Grandpa's image of a hero in his twilight years echo the social psychology of the post-80s, post-90s and elderly groups. In the new cultural context, these character symbols transcend the original text and generate new ones. The significance of the times becomes part of the collective memory and can trigger a collective carnival-like response from the audience (Sun.2019). In addition, the values of justice over evil, unity and cooperation conveyed in the story are also consistent with traditional Chinese moral concepts and have a positive impact on the value shaping of the audience, especially children. (Zhang.2020) As one of the representative works of the "Chinese School" animation era, "Calabash Brothers" not only inherits traditional Chinese culture, but also makes innovations and breakthroughs. It combines traditional mythological stories with modern animation technology to create a work with the characteristics of the times in the form of paper-cut art, providing new ideas and methods for the inheritance and development of traditional culture.

2.3 Barthes Semiotic Theory

Roland Barthes is a famous French semiotician and structuralist theorist. His semiotic theory mainly focuses on the interpretation of culture, text and social phenomena. His theory is based on Saussure's semiotics, but further expanded on this basis to incorporate more socio-cultural aspects of analysis. His semiotic theory includes signifier, signified, and denotation and theoretical concepts such as connotation, mythology, and "readerly text" and "writerly text". According to the research needs of this article, while exploring the art of Jiaodong paper-cutting and the visual language and cultural connotation in contemporary Chinese paper-cut animation, the author selected two semiotic elements, namely the signifier and the signified.

Barthes divided the images of communication media and communication carriers such as advertising, photography, fashion, drama, film, and television works into the "linguistic message layer", "denotative image layer" and "connotative image layer" to explore the relationship between social culture and ideology. The metaphorical influence of image composition (Zhang. 2013). Currently, scholars use Roland Barthes's semiotic theory to analyse various forms of popular culture. Such as advertising (Yapis Biak, 2024), poster (Pasya. 2024), animation (Wang.2018), visual communication (Zhang. 2013), games (Ramadany. 2024). These studies investigate the ways in which the signs and symbols contained in these cultural artifacts convey meaning, ideology, and cultural representation. In summary, this study can also use Roland Barthes' theoretical elements of signifiers and signifies to summarise the stylistic characteristics of Jiaodong paper-cut art in Chinese paper-cut animation.

Table 1 Theoretical Framework

| | Code | Description | Example |
|--------------------------|-----------|---|--|
| Roland Barthes Semiotics | Signifier | The signifier is the material form or sensory level of the symbol, that is, the symbol carrier that can be perceived, such as sound, image, text, etc. It is the "shell" of the symbol. | The shape and colour of the paper-cut pattern of red roses are signifiers. |
| | Signified | Signified is the concept or meaning expressed by the symbol, which is the "content" level of the symbol. The referent is not material, but the abstract meaning given to the symbol by culture and society. | The red rose cutout refers to the cultural symbol of love, romance and passion or the image evoked by the concept of "rose flower" |

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2.4 Research Gaps

To sum up, most of the research on Jiaodong paper-cutting art involves research on classic paper-cutting atlases, focusing on the historical origins and craftsmanship of Jiaodong, as well as the analysis of Jiaodong paper-cutting art characteristics, cultural connotation analysis, aesthetic expression analysis, protection, development and application. Research aspects; Most of the research on the Chinese paper-cut animation "Calabash Brothers" focuses on the art form of paper-cut animation, Chinese cultural elements, characters, value transmission, etc. However, when combining Jiaodong paper-cut art with Chinese paper-cut animation, the focus is on Roland Barthes symbols. The study of its colour style characteristics has not yet been fully explored in the field of science. Therefore, this study will fill the gap in this field.

3 RESEARCH METHDOLOGY

The main purpose of this study is to analyze the colour characteristics and influence of Jiaodong paper-cut art in Chinese paper-cut animation. The study will use qualitative research method (Denzin & Lincoln, 2021). As Denzin, N. K. said, qualitative research requires systematic empirical data collection and analysis to reveal complex social phenomena. Qualitative research is a planned and large-scale collection of empirical data related to this study. The data to be collected in this study include Jiaodong paper-cut art works and the content of the "Calabash Brothers" animation film. For Research Flow Chart, see Figure 4.

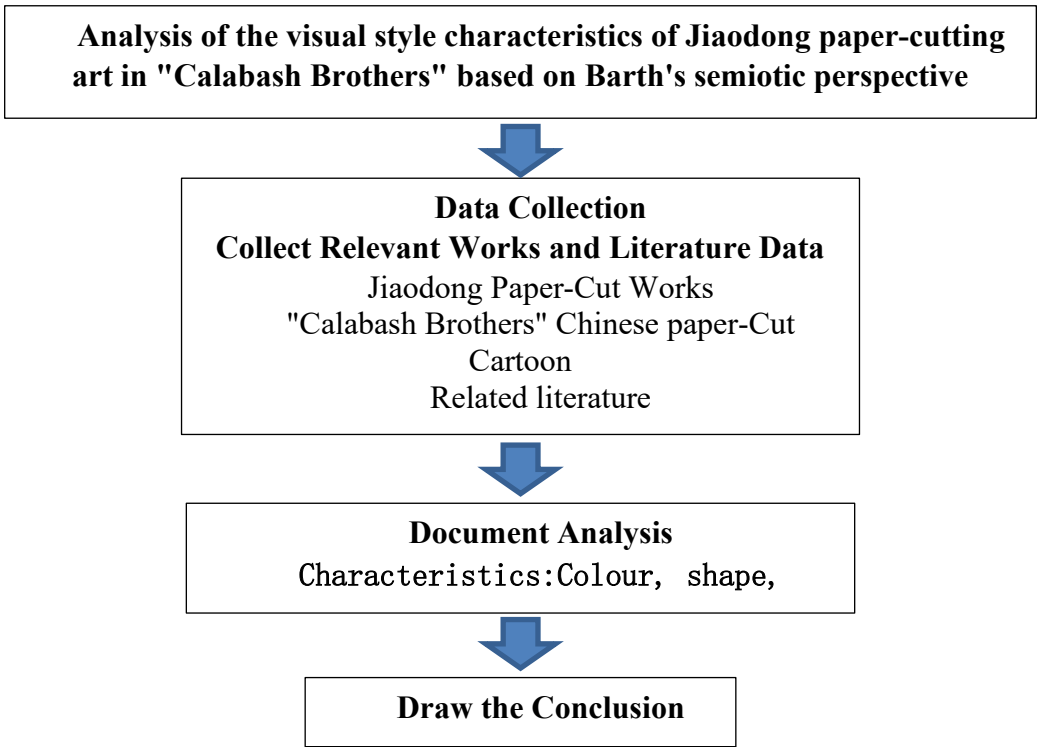





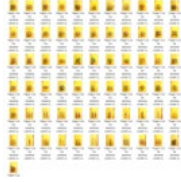




Figure 4 Research Flow Chart
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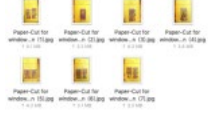


Based on the figure above, the research will collect relevant data through observation and document analysis to help the author determine the main characteristics of Jiaodong paper-cut art in "Calabash Brothers" from the perspective of visual communication.

In addition to collecting the animated film "Calabash Brothers", the author of this study also collected samples about Jiaodong paper-cutting art (collected according to different types):

Classification according to the location of the post is: Window skirt, Paper-Cut for window center decoration, Paper-Cut for window corner decoration, Paper-Cut for window and door lintel decoration etc. This study collected these five paper-cut works and Paper-Cut Mold works as research samples of Jiaodong paper-cut art, 195 samples in total. See Table 2.

Table 2 Classification statistics of Jiaodong paper-cut art samples

| Name | Describe | Example | Number of samples collected |
|--|---|---|--|
| Window Skirt | The overall window skirt is relatively large, with a size of 80-220 square centimeters. Most of them are hung on the lintel of the windows in the house. The contents are diverse, including operas, mythological stories, animal and plant patterns and festive patterns with beautiful homo-phonic meanings, all expressing good wishes such as a happy life, health and longevity. |  "Opera story" Rice paper 108cm*116cm | 13 pieces of Jiaodong window skirt paper-cut works:  |
| Paper-Cut for window center decoration | Paper-Cut for window center decoration is to cut the entire pattern into strips of flowers according to the window lattice format of your own windows. There are four, six, eight, twelve and other forms. The pattern content is also very diverse. |  Six-striped screen window "Children Playing" Rice paper (30cm*38cm) | 67 pieces of Jiaodong Paper-Cut for window center decoration works:  |
| Paper-Cut for window decoration | Paper-Cut for window decoration generally uses small pieces of paper left over from paper-cutting to cut and depict figures, fish, insects, birds, animals, flowers and other types. It is small and delicate, with rich and concentrated content. It can be posted alone, and is often decorated with Paper-Cut for window center decoration and Paper-Cut for window corner decoration. |  "Eight Immortals".Rice paper colour (10cm*12cm) | 59 pieces of Jiaodong Paper-Cut for window decoration works:  |
| Paper-Cut for window corner decoration | Corner flowers are used to decorate the corners of windows, ceilings and other places. They are used in combination with Paper-Cut for window center decoration, Paper-Cut for window decoration ceiling, etc. to complement each other. |  "Final Work" rice paper (14cm*11cm) | 14 pieces of Jiaodong Paper-Cut for window corner decoration works:  |

| | | | |
|---|---|---|---|
| Paper-Cut for window and door lintel decoration | Paper-Cut for window and door lintel decoration is mainly affixed to the door lintel or window lintel. Since it is affixed to the outside of the house, it must be able to withstand wind and rain, so its pattern must be dense, clear, connected and textured. Rough. |  | 7 pieces of Jiaodong Paper-Cut for window corner decoration works:  |
| Paper-Cut Mold | Paper-Cut Mold is the original form of Jiaodong paper-cut art works. The production method is: first draw a draft or smoke a sample, cut out the outline of the pattern in the form of risk cutting, which is called a "blank", and then use a brush to outline the corresponding pattern on the "blank". |  Smoked sample "Wishful flowers bloom" Qing Dynasty. (22cm*26cm) | 35 pieces of Jiaodong Paper-Cut Mold works:  |

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The samples will be analysed using content analysis methods. The content analysis process is content analysis based on Roland Barthes's semiotic theory (Krippendorff, 2018) emphasizes that content analysis provides a systematic approach to examining communication content, making it a powerful tool for qualitative research. For research flow chart, see Figure 5.

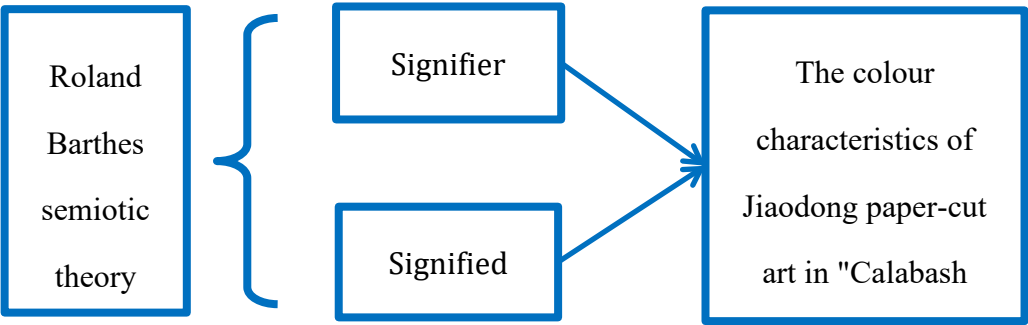


Figure 5 Research Framework
(Source: Zhang Yun, 2024, Copyright Consent: Permissible to Publish)

This study mainly explores the colour characteristics of Jiaodong paper-cut art in Chinese paper-cut animation through content analysis. Therefore, the content analysis stage is the main component of this research process. In the process of content analysis, the content of the article is mainly written in a self-narrative way.

First, samples of Jiaodong paper-cut art were sampled and collected. Then, the paper-cut animation part selected the representative work "Calabash Brothers" created during the heyday of Chinese paper-cut animation as the main research object. Finally, the sample of Jiaodong paper-cut works was combined with the specific content of the Chinese paper-cut animation "Calabash Brothers", and Roland Barthes's semiotic theory was used to conduct a detailed content analysis of colour matching.

4 RESEARCH RESULTS

The unity of naturalness and humanity is one of the important characteristics of Chinese traditional colour culture. It embodies people's awe and respect for nature and human society, and also embodies harmonious coexistence between man and nature and between man and society (Yang, 2023). This fusion not only shapes the unique pattern of Chinese traditional colour culture, but also injects profound heritage into traditional Chinese art creation, becoming a continuous source of creative power and performance foundation in the field of art design. (Fang,2025). Scholar Fang Tian also mentioned (see Figure 6) that the colours in Chinese paper-cutting express various meanings. For example, the warm colour series represents joyful, sacred, auspicious, and vibrant, while the cold colour series represents peaceful, profound, noble, and solemn, etc.

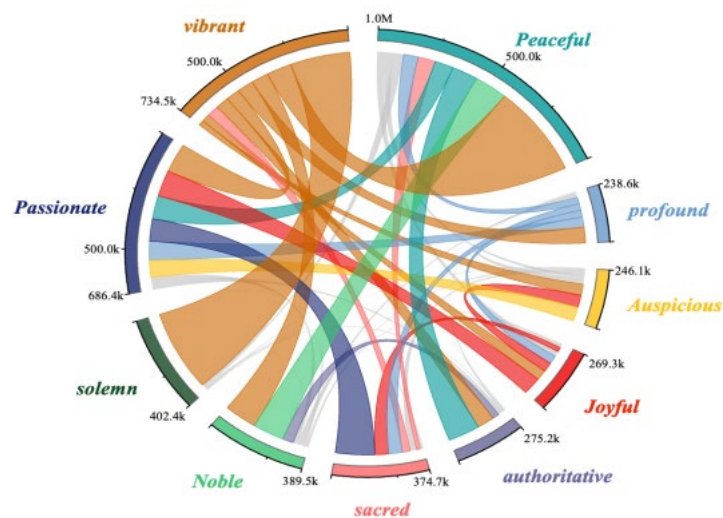


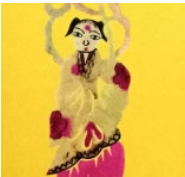




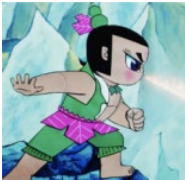



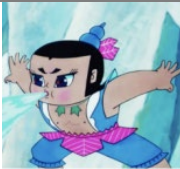




Figure 6 Meaning of different colours in paper cutting
(Source: Fang Tian, 2025, Copyright Consent: Permissible to Publish)

4.1 The Use of Bright Primary Colours and Character Differentiation

Jiaodong paper-cut art often uses primary colours such as red, yellow, and blue for sharp contrast to enhance visual impact and recognition. In "Calabash Brothers", the use of colour is not only decorative, but also has symbolic meaning, conveying the character's personality traits and abilities.

Table 3 The colour characteristics of Jiaodong paper-cutting art in "Calabash Brothers"

| Jiaodong Paper-Cut Works | Colour Symbol Elements | Elements Reflected in "Calabash Brothers" | Signifier | Signified | Colour Characteristics |
|---|---|---|---|---|---|
|  | Paper-cut primary colour elements – red |  | The colour of Dawa is red. Red is a bright and warm colour. | Da Wa's ability is boundless. Red symbolizes strength, enthusiasm, courage, vitality, leadership and authority. | Use of primary colours Make colours contrast sharply and improve visual impact |
|  | Paper-cut primary colour element - orange |  | The colour of Erwa is orange. Orange is a warm and bright colour, between red and yellow. | Erwa's abilities are clairvoyance and wind-proof ears. Orange highlights his liveliness and wit, symbolizes his keenness and insight, and conveys a positive and wise image. | |
|  | Paper-cut primary colour element - yellow |  | The colour of Sanwa is yellow, which is a bright and lively colour. | Sanwa's ability is a bronze head and an iron arm. The yellow colour conveys a positive and sunny image, and also implies his indestructible ability, which is as warm and powerful as the sun. | |
|  | Paper-cut primary colour elements - green |  | The colour of Siwa is green. Green is a natural and fresh colour. | Siwa's ability is to breathe fire and absorb fire. Green highlights his vitality and vitality, symbolizing growth and hope. It also hints at the connection between his abilities and natural elements, conveying an image of harmonious coexistence with nature. | |

| | | | | | |
|---|--|---|---|---|---|
|  | Paper-cut primary colour elements —cyan |  | The colour of Wuwa is cyan, which is a colour between blue and green. | Wu Wa's ability is to absorb water and spit out water. The cyan colour highlights his calmness and stability, symbolizing his mystery and wisdom. It also hints at the connection between his abilities and water, conveying an image of tranquility and power. | |
|  | Paper-cut primary colour elements - blue |  | The colour of Liuwa is blue. Blue is a deep and peaceful colour. | Liuwa's ability is invisibility. The colour blue highlights his wisdom and calmness, symbolizing his loyalty and reliability. It also implies that his abilities are related to invisible forces, conveying a mysterious and deep image. | Use of primary colours Make the colour of the character highly recognizable |
|  | Paper-cut paper-cut primary colour elements - purple |  | The colour of Qiwa is purple, which is a noble and mysterious colour. | Qi Wa's ability is to possess a magical treasure gourd. The purple colour highlights his mystery and nobility, symbolizing his authority and power. It also hints at the connection between his abilities and magic, conveying a mysterious and powerful image. | |





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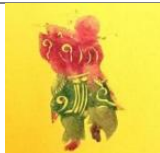



As shown in the picture (see Table 3), in "The Calabash Brothers", the seven brothers' costumes use bright primary colours such as red, orange, yellow, green, cyan, blue and purple. These colours are directly derived from the preference for primary colours in Jiaodong paper-cut art, and have extremely high visual recognition. For example, the red gourd brothers symbolize courage and enthusiasm, while the blue gourd brothers represent calmness and wisdom. Through this colour contrast, the audience can not only quickly distinguish the characters, but also perceive the unique personality and abilities of each character. The use of this colour combination reflects the principle of "colour is emotion" in paper-cut art, that is, colour is not only a visual element, but also carries cultural symbols and emotional expression.

4.2 Colour contrast and expression of emotional tension

Jiaodong paper-cut art emphasizes the contrast of colours and stimulates emotional tension through strong colour conflicts. In "Calabash Brothers", this contrasting colour combination not only enhances the visual effect, but also intensifies the emotional fluctuations and conflicts in the plot.

Table 4 The colour characteristics of Jiaodong paper-cutting art in "Calabash Brothers"

| Jiaodong Paper-Cut Works | Colour Symbol Elements | Elements Reflected in "Calabash Brothers" | Signifier | Signified | Colour Characteristics |
|---|--|---|--|---|--|
|  | Use of warm and cold contrasting colours |  | The use of warm and cold contrasting colours of red and green | The strong contrast between warm and cold colours makes the picture more eye-catching, expressing the opposition between evil and justice through colour. | Use warm and cold contrasting colours to enhance colour contrast and stimulate emotional tension |
|  | Single colour flat coating |  | Monochrome flat coating makes paper-cutting visually concise and clear, emphasizing the expressiveness of lines and shapes, creating strong contrast, enhancing decoration, and highlighting the pattern of paper-cutting. | Monochromatic colouring can convey specific emotions. For example, red embodies the festive and warm cultural atmosphere, symbolizing auspiciousness and happiness; while black is often used to express solemnity and mystery. | Enhance visual impact, Strong colour conflicts stimulate emotional tension |

| | | | | | |
|---|--|---|---|---|---|
|  | Sfumato colouring |  | Sfumato colouring uses colour gradients, layers and permeability to create | The sfumato is rich in layers, highlighting the lively and lovely character of the character. | Rich levels of blooming, enriching visual effects and enhancing the attraction of the audience's eyes |
|  | Combinat ion of solid colour and blooming |  | The combination of monochrome and blooming not only highlights the paper-cut pattern, but also fully expresses the atmosphere of the picture. | The smudged background forms a sharp contrast with the monochrome characters and objects, highlighting the helpless state of grandpa after being arrested by the goblin. | The combination of monochrome and blooming plays an emotional role in animation. |

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As shown in the picture, see Table 4, many contrasting colours of cold and warm are used in Jiaodong paper-cutting, especially the contrast of red and green. In "Calabash Brothers", colour contrast is used to highlight emotional tension and conflict. For example, the strong contrast between warm and cold colours such as red and green on Da Wa not only makes the battle scene more eye-catching, but also expresses the opposition between evil and justice through colour.

The colours in Jiaodong paper-cut art use a large number of single-colour flat painting and blooming techniques. From the perspective of visual effects, the use of flat painting and blooming has an emotionally oriented role in animation. For example, the bat character in "Calabash Brothers" uses red and blue monochrome flat paint, which not only emphasizes the expressiveness of lines and shapes, but also enhances the decorativeness with strong contrast, making the character image visually concise and clear. Moreover, monochrome painting can convey specific emotions. For example, red embodies the festive and warm cultural atmosphere, symbolizing auspiciousness and happiness; while black is often used to express solemnity and mystery. Therefore, bright monochrome flat painting enhances the visual impact. In addition, sfumato colouring enriches visual effects through colour gradients, layers and permeability. For example, the character of the frog in "Calabash Brothers" uses sfumato colouring to enrich the visual picture and enhance the appeal of the audience's eyes. This colour matching and colour filling technique enhances the visual effect and also demonstrates the unique way of conveying emotions through colour in Jiaodong paper-cut art.

5 CONCLUSION

According to the concepts of "signifier" and "signified" in Barthes's semiotic theory, the colour matching of Jiaodong paper-cut art exerts a distinctive visual effect in "Calabash Brothers", while also conveying profound cultural connotation and emotional expression, with Obvious artistic characteristics. For example, the use of primary colours in the costumes of the characters of the Seven

Calabash Brothers makes the characters' colours contrast sharply, improving the visual impact and character recognition. The use of cold and warm contrasting colours in the character costumes enhances the colour contrast and stimulates emotional tension. Monochrome and the combined use of blooming and dyeing enriches the visual effect, enhances the attraction of the audience's eyes, and has an emotionally oriented effect. Different colours reflect different character personalities and picture atmospheres, and symbolize different cultural connotations. Therefore, Jiaodong paper-cut art is famous for its bright colours, strong contrasts and symbolic meanings, and these characteristics have been fully inherited and innovated in the "Calabash Brothers" animation.

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AUTHOR CONTRIBUTIONS

Zhang Yun as the main author played a role in literature review, collecting data, planning research tree, and produced an analysis based on data and literature, while Zhou Shibo conducted collecting data and research methodology, and Md Nagib Padil and Md Khairul Nizam Ramilie were the corresponding authors and were responsible for grammatical correction, content improvement and delegating tasks to research members.

CONFLICT OF INTEREST

The author declares no potential conflict of interest with respect to the research, authorship, and/or publication of this article.

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