Research on the Paradigm of Pixar Animation Modeling

Yang Shuting

Fine Art College, Qingdao University, Qingdao 266000, China

ABSTRACT. *Looking at the current outstanding animation works emerge in endlessly. The quality of modeling determines the success or failure of an animation work. In terms of animation modeling, Pixar is the most distinctive and impressive. They got rid of the fixed mode in ordinary animation and gave the characters in the pen his own soul and life, which is active in everyone's vision. This article starts from the aspects of modeling, color, and character defect setting. It mainly compares and analyzes the differences in the animation modeling between the 6 classic works of Pixar and Disney, and discusses the modeling paradigm of Pixar's animation modeling.*

**KEYWORDS:** *Animation; Modeling; Color; Character; Paradigm*

1. Introduction

Animated works are emerging endlessly, constantly sweeping the public view. As the leader of animation film companies, Pixar is imperative to analyze their animation modeling paradigm [1]. There is a famous slogan in cinemaology [2]: Talking about movies can't get rid of Hollywood, and talking about animated characters can't avoid Pixar. Pixar Co., Ltd. has the courage to try to develop, innovate and transcend in animation modeling, to get rid of the fixed mode in general animation, and create these familiar classic characters such as Russell, Ba Xiaofei and MiG. This article mainly discusses the paradigm of Pixar's modeling and modeling, and tries to explore the paradigm of Pixar based on the image of the boy in the 6 classic works of Pixar and Disney. Exploring the relevant shaping issues of these figures will allow us to understand the Pixar animation paradigm more deeply, and it will inspire us to create better animation works to present to the public.
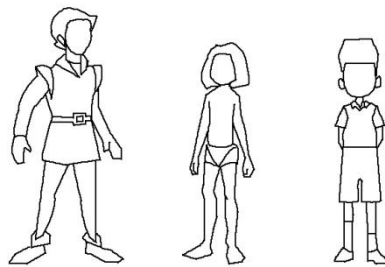
2. Modeling

The biggest advantage of Pixar animation is innovation in modeling. The character designs in Pixar's animated works are mostly unique. Not only the beautiful appearance, but also the character's connotation, which makes the character come alive [3]. The following mainly discusses from the basic modeling elements,

modeling proportions and figure rhythm.

First, Pixar's basic modeling elements mostly use round and smooth curves. The circle has a wide range of affinities and is a morphological element full of tension. The smooth curve design gives the audience more comfort. This article has re-engraved the six basic image elements of Pixar and Disney. Figure 1 shows the re-engraving of the shapes of Russell, MiG, and Ba Xiaofei. It can be seen that their basic modeling elements are mainly round and smooth curves. Figure 2 is Arthur, wolf child Mokley and Lewis. Their basic modeling elements are mostly composed of sharp triangles, rectangles and obtrusive lines. Through comparison, Pixar can summarize and characterize the characters and highlight the character, Close to the role, giving a very personal connotation.
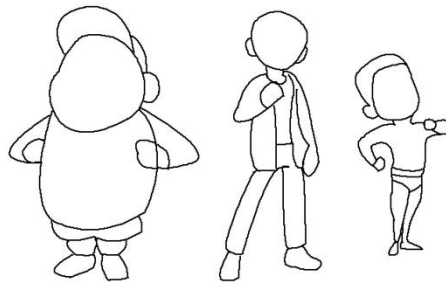
Figure.1 Russell, Mig and Ba Xiaofei's Shape Remake

Figure.2 Arthur, Wolf Child Mokley and Lewis's Shape Remake

Second, the head-to-body ratio of Pixar's modeling is relatively small, and it emphasizes exaggeration. This article uses Ba Xiaofei's head ratio in "Superman Story" as a standard, and compares the difference in shape between Pixar and Disney. The characters in Figure 3 are Russell, MiG, and Ba Xiaofei in Pixar's works. Their head-to-body ratios are 1: 2.1, 1: 3.6, and 1: 2.9. On the right are Arthur, Wolf

Boy Mokley and Lewis in Disney's works. Their ratios are 1: 5.4, 1: 4.8, 1: 4.5 (Figure 4). Through comparison, it was found that the head-to-body ratio of Pixar's characters was small, while the head-to-body ratio of Disney's characters was large. Obviously, Pixar is bolder, more extreme, more exaggerated and more innovative.
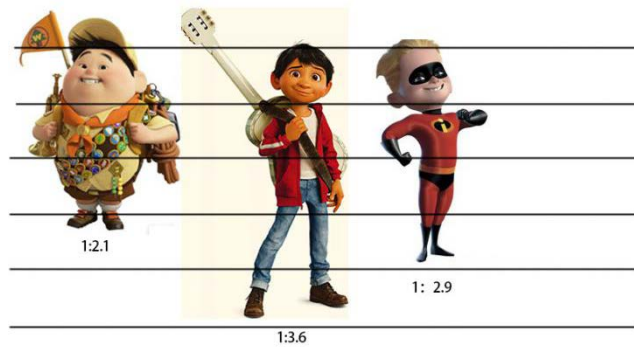

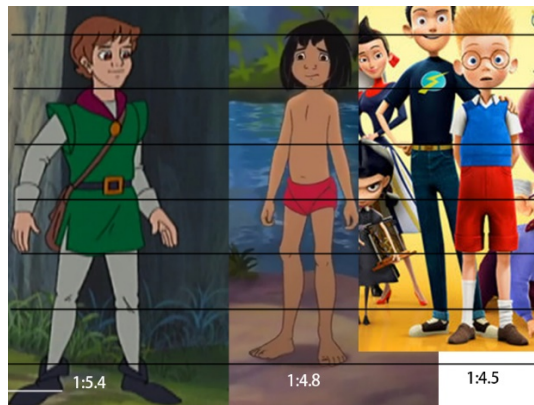*Figure.3 Russell, Mig, and Ba Xiaofei's Head-to-Body Ratio*

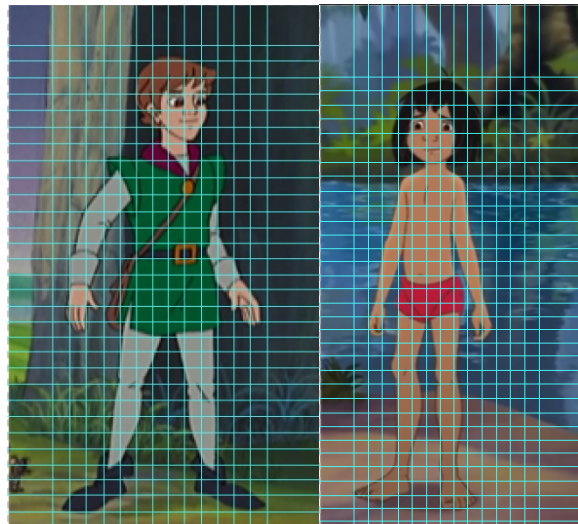*Figure.4 Arthur, Wolf Child Mokley and Lewis's Head-to-Body Ratio*

Third, Pixar's figure shape uses a constant proportion value, which emphasizes coordination. This article mainly analyzes and compares the eye-to-face ratio (the ratio of eyes to the face) and the head-to-body ratio (the ratio of the head to the body) of Pixar and Disney characters to verify that Pixar design characters are more Innovative. Using Ba Xiaofei's character image as a standard for comparison, the eyes are scaled to the same size. The characters in Figure 5 are Russell, Mig, and Ba Xiaofei in Pixar's works. Their eye-to-face ratios are 10%, 16%, 10%, head-to-body ratios are 7%, 9.4%, and 18%, respectively on the right are Arthur (Figure 6) , Wolf Boy, Mokley and Lewis in Disney's works, their eye-to-face ratios are 20% , 16%,

10%, head-to-body ratio were 6.4%, 8.4%, 13.8%. Through data analysis, we can find that Pixar's data difference is small, while Disney's data difference is large. When designing the character image, Pixar designed the proportion of facial features based on the height of the character. The designed proportion was coordinated, and the data difference was small. We call it the "Pixar Golden Ratio". When designing the character image,

Disney praised most of the body Proportion, the data difference is relatively large. So Pixar pays more attention to constant proportionality and coordination.

Figure.5 Eye-to-Face Ratio of Russell, Mig, and Ba Xiaofei

Figure.6 Eye-to-Face Ratio of Arthur, Wolf Child Mokley and Lewis

Fourth, Pixar modeling uses more accessories and more emphasis on richness. In Pixar's works, Russell, MiG, and Ba Xiaofei have 8 accessories (flags, hats, horns, ropes, pendants, school bags, red scarves, badges), 1 (guitar), and 1 (eye mask). In the works of Disney, Arthur, Wolf Boy Mokley and Lewis, their accessories and props are 1 (backpack), 0, 1 (glasses). By comparison, Pixar uses more accessories and props, emphasizing the richness of the character's character and highlighting the character's character.

3. The Color

In modern cartoons, color plays a decisive role, which is mainly reflected in the aspects of character modeling, screen style, and revealing themes. The manifestation of the character of animation character depends on color to a large extent. Pixar puts more emphasis on color matching and coordination in color application. The following is an analysis of the six human figures in Pixar and Disney's works mainly from the saturation and the number of colors used.

First, Pixar has low saturation in color application, and it emphasizes the coordination and matching of colors. In Pixar's works, Russell, Mig, and Ba Xiaofei, Russell's main colors are light yellow (tops and hats), brown (shorts and shoes), and orange (scarves). The color saturation is 55% and 71%, respectively 82%. The main colors on Mig's body are red (coat), blue (jeans), and white (t-shirt and guitar). The color saturation is 88%, 28%, and 16%, respectively. The main colors of Ba Xiaofei's body are red (Superman suit), black (gloves, underwear and boots), yellow (hair), and the color saturation is 71%, 40%, 42%. In the works of Disney, Arthur,

Wolf Child Mokley and Lewis, Arthur's main color is green (top), color saturation is 99%, Wolf Child Mokley's main color is red (shorts), color saturation the degree is 86%. The main colors on Lewis are blue (top) and red (pants), and the color saturation is 99% and 97% (Figure7), respectively. The data shows that Pixar uses low-saturation colors, and pays more attention to the details of color coordination and matching, while Disney uses high-saturation colors (such as Lewis's red and blue contrast). Contrast found that Pixar will be more advanced in the use of color.

Second, the richness of colors is slightly different. In Pixar's works, Russell, MiG, and Ba Xiaofei have 25, 8 and 7 colors respectively. In the works of Arthur, wolf child Mockley and Lewis, there are 8, 3 and 8 kinds of colors on the body respectively. Although Pixar and Disney use the same number of colors, Pixar will pay more attention to the richness and saturation of the colors.

4. The Embodiment of the Character Personality Defect Set in the Animation

Pixar is different from Disney when it comes to shaping characters. Unlike Disney's animation, which characterizes the character of the animated character is very simple, either evil or good. On the contrary, the character character created by Pixar is more complicated and has a social humanized mask color [4]. It is not difficult to find that the storyline of many Pixar animated films lies in the character defect of the character. If there is no such character defect set, the story cannot be developed.

Analyze the 6 figures in Pixar's and Disney's works. In Pixar's works, Russell, Mig and Ba Xiaofei, Russell's personality defects are mainly active, talkative, naughty (messy props), and silly personality. MiG is mainly impulsive, stubborn (throwing eyebrows) and rebellious, which is reflected in the storyline. Ba Xiaofei mainly has impatience, combativeness, naughtiness and agitation. Let's analyze Arthur, Wolf Child Mokley and Lewis in Disney's works. Arthur has almost no personality defects. Wolf Child Mokley is characterized by contradictions. Lewis is introverted, naughty and has big brains. In comparison, the characters in Pixar's works have more character defects, while the characters in Disney's works have almost no character defects.

Pixar's animator, Mr. Mark Welsh, mentioned a "character arc"-a point based on character flaws. "When a character is at the end of a movie, his personality traits or the above-mentioned personality defects must be different from the beginning." The so-called story is actually telling this kind of personality change and make up for the mental defects. Such character arcs are used to the fullest in Pixar's animated films. With the rhythm of the movie story, the audience will grow up with these animation heroes, and their personality changes will bring the audience's feelings when watching the movie. Like human nature, animated characters are not a single soul attribute. As their creators, Pixar has bestowed the pains and weaknesses of human nature on the hearts of the characters. That's why we feel that Pixar's animated characters are so close to us, as if living near us. Because in life we also meet old people like the lonely old Karl, and there are naughty little russells around us. Even

when we play with toys, we also think that these toys have their own world of joy and sorrow.

Pixar is like this. Through the shaping of the character of the character, he explained to us one after another the concise truth, everything is gradually clear in the process of watching the film. Pixar has made animated characters alive. If a character has an attractive appearance, it is just flat. At most, it will be bright at first sight and will not last. The superposition of personality attributes makes the character rich when you get up, people will be willing to remember such soulful roles. In addition, like most American animations, the animated characters created by Pixar are mostly circular characters. These characters are very ordinary. They will have their own minor faults and will not be as perfect as the characters created by Japanese animation. The character of this round character is precisely the focus of Pixar's animated film production.

5. Conclusion

The so-called "paradigm of Pixar animation modeling" refers to the style and art of character shaping, and accordingly becomes the paradigm of animation aesthetics, which expands the nature of the animation itself, which has great aesthetic significance and "cultural form value". We have conducted a comprehensive analysis of the six figures in Pixar and Disney's works in terms of modeling, color, and character defect settings. Pixar vividly shaped the characters in his pen, and also brought us a visual feast.

Conflicts of Interest

The author declare no conflicts of interest regarding the publication of this paper.

References

[1] Zhao J (2017). Characterization of Pixar animated films. Movie Literature, vol. 680, no.11, pp.124-126

[2] Qi Z.Y(2012). Study on Visual Image of the Back Characters in Pixar Animation Movies. Movie Literature, vol. 651, no.11, pp. 62-63

[3] Zhang P.J (2017). Study of Children's Images in Pixar Animation. China Radio & TV Academic Journal, no.11, pp. 92-94.

[4] Liu Y (2013). Analysis of the Formal Language of Pixar Animation Movies. Science & Technology Information, no. 6, pp. 291-292.