Evaluation of Impact of Color Language on the Animation-Scene Design

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Abstract. Nowadays, animation is one of the artworks; it enables the invisible image language to be the properties of imagery and visualization. However, colors possess great effect on the aspects of manifestations and visual communication. Particularly, the color of the role in the animated film relates directly to the expressions of image forming and story content of the character of animation work. It is one of the indispensable important factors in animation creations. In this study, we will further investigate the impact of color image on animation-scene design using the method of content analysis and tried to search for some guidelines on the application of color within the animated scene. The result showed that there were at least seven kinds of expressive characteristics, including the reflection, edge silhouette, light effect, regional, contrast, appeal, color cloud, etc., to be summarized according to the operational definition of color-image mode. Through these seven guidelines of color language, the audiences will rapidly understand the color meanings of animated scene design transmitted by the creator of animation.

Introduction

Color itself has not emotion, but a physical phenomenon. Human being can feel the colors to bring us psychological message, it is because people who live in a colorful world, and accumulate much visual and/or perceptual experiences, induce some kinds of emotional thinking when corresponding to the external color stimulation. Whether it is color or achromatic, all colors have their own emotional features. The creators of digital animation are able to evoke the viewer's experience of life and sympathy by means of emotional characteristics of color association. Therefore, the plot tension of animation was more strengthened by using the presenting method of color language. And it can also assist to explain the metaphor meaning of scene color existed in the animation story.

Bowers (1970) pointed out that the method of content analysis mainly emphasized the analytic values [1]. In other words, the key characteristics of content analysis is objective, systematic and quantitative [2]. Therefore, to evaluate the effect of color image on the scene of animation, the method of content analysis was performed in this work. The authors would attempt to summarize some guidelines on the application of colors within the animated scene and further understand the emotion meaning of color designed in animation. Owing to the limitation of some factors including the finance, material, layout, etc., the use of animated-scene colors was only explored, whereas other means of expression designed in animation was ignored in this study.

Literature Review

Henderson and Hollingworth (1999) had shown that the scene was constructed by a coherent image of real-world environment in which spatial distributed between reasonable background elements and discrete objects. In other words, the scene includes two important components of the background and objects. And the background of scene means to a broad, stationary surface and structure [3]. General speaking, the definition of a movie-scene is that some particular activities occurred within a special time as well as space, and/or the character of movie constitute the specific pictures. In the
contemporary animation-scenes, it is the performance occasion and environment of animated character. On this occasion and environment have both design of single lens space and scenery, and include an element-time formed by a lot of successive lens.

Under normal environmental conditions, the exhibited emotion of people is often rational. However, once stimulated and interfered outside, it will generate an emotional response which caused a relationship with the event, story, and scene color. In the process of viewing animation, the change of audience’s emotion, such as tension, anger, fear, sadness or excitement, joy, pleasure, or high-pitched, excited, excitement will be happened because of the stimulation of story, the characters and/or scenes color.

A research showed that the design of reddish scene gave us the emotion of red and symbolic meaning from a psychological analysis. And then the audience would feel to relate something such as guns, blood and war-banner. It also gave us a kind of association of smell of blood and terror, and had a sense of jumping as well as life. In addition, it also let us fell a smell of blood and terror, and had a feeling of jumping as well as life [4]. Red in the festival has a sense of active and celebration. And it also represents the meaning of good luck, harvest and joy in the traditional concept. For example, the use of scene color represented the era of “Showa” in Japan was specific and originality in the animation of "Spirited Away". The audience should be impressed by a play of bathing of God River. The color brightness between bathroom and God River had difference, so that it made a strong contrast. The muddy and dirty colors were more visual impact in this scene. Thereby audience felt nausea emotion and deepened the understanding and awareness of the plot (Figure 1A, B).

As far as our knowledge, nature colors also have the function to warm up the emotion of viewer. The orange agricultural products such as rice, orange, persimmon, etc., often make people to have the sense of satiation and mature. Thus, it is usually applied on many packages of food due to its sweet feeling of appetite. The image of yellow and orange associated with the positive symbol such as vibrant, bright, warm, and courageous. In order to guide the audience to understand the inner world of Simba who played in the cartoon of "The Lion King", the creator of this film chose a series color of yellow and orange as the end of the screen. This meant that the message of kingly way which filled confidence in the inner world of protagonist to face future was passed to the audiences (Fig. 1C, D).

Besides, Lee (2012) also reported previously that the painting often expressed the deep meaning of a picture, interpreted the expression of objectivity and truth, as well as conveyed their subjective intentions through the rapid catching of scene, events, and personalities [5]. However, the movie is different; it mainly shows a series of images by description the changes of the role action. And the film shows a visual image formed by the continuous changing of light and color. Thus, both arts of paintings and films have difference at the use of color and expression.

![Figure 1. Parts of the pictures in "Spirited Away"(A, B) and "The Lion King"(C, D). The scene was gray while the God River filled with sludge was coming into the bathroom (A); it had finally come into a bright color after cleaning (B). The ended picutures of yellow and orange scene meant that the message of protagonist filled the confidence in future was transmitted (C, D).](image)

**Method and Procedures**

In order to search for some guidelines on the application of color within the animated scene, the investigation of impact of color image on animation-scene design was further performed by using the method of content analysis. The sample films of animation selected for this study were shown in table 1.
Through the stimulation of visual sensory, the property of color emotion image also induced the emotional experience of viewers. And these experiences will further affect the viewer's recognition on the plot of animation. To identify the differences of picture color in the animation scene, concept of showcase display was carried out for outline in this study. From the aspects of space-time and background, we further evaluated the color changing, which conveyed what meaning was. Therefore, the method of content analysis was used at the first stage in this study to explore the connotation of scene color within animations. Subsequently, three experts’ interview for the identification of content validity was further carried out. The flowchart of analysis in this research was shown in Figure 2.

Table 1. The basic data of animation used for this study.

<table>
<thead>
<tr>
<th>Film name</th>
<th>Film source</th>
<th>Publication year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spirited Away</td>
<td>DVD</td>
<td>2001</td>
</tr>
<tr>
<td>This Side Up</td>
<td><a href="http://www.liron.topaz.com/ThisSideUp/this-side-up.html">http://www.liron.topaz.com/ThisSideUp/this-side-up.html</a></td>
<td>2009</td>
</tr>
<tr>
<td>Geris Game</td>
<td>Pixar short movie 1, DVD</td>
<td>2011</td>
</tr>
<tr>
<td>The Fantastic Flying Books of Mr.</td>
<td><a href="https://vimeo.com/61858042">https://vimeo.com/61858042</a></td>
<td>2011</td>
</tr>
<tr>
<td>Morris Lessmore</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Lion King (3D)</td>
<td>DVD</td>
<td>2011</td>
</tr>
<tr>
<td>Innocent Love-- A cute animated love song</td>
<td><a href="http://www.youtube.com/watch?v=lFsWWFcjDUc">http://www.youtube.com/watch?v=lFsWWFcjDUc</a></td>
<td>2012</td>
</tr>
<tr>
<td>Anytime is ice cream time</td>
<td><a href="https://www.youtube.com/watch?v=VXeQDCNEyCM">https://www.youtube.com/watch?v=VXeQDCNEyCM</a></td>
<td>2013</td>
</tr>
<tr>
<td>Five Centimeters Per Second(Part III)</td>
<td><a href="https://www.youtube.com/watch?v=DUbKKhYcXIs">https://www.youtube.com/watch?v=DUbKKhYcXIs</a></td>
<td>2013</td>
</tr>
</tbody>
</table>

Figure 2. The analysis chart of structural elements of scene environmental color.

Results and Discussion

After content analysis and three experts’ identification, there were at least seven kinds of expressive technique, such as the reflection, edge silhouette, light effect, regional, contrast, appeal, color cloud, etc., to be outlined according to the analysis of color structure. And then these expressive types of color design for identification the feature of animated character were brief described as following.

1. Reflection: Different color backgrounds will enable viewers to produce various visual stimuli, and generate different emotional association by means of color inducing. Then, the expression of animated films can be explained from two aspects: 1) to reflect the role personality; and 2) to reflect the plot change. For example, the film of “Geris Game”, it took place at the park in a warmed autumn. The protagonist, Mr. Gregorian was an old man and put the chessboard on the table in park and kept walking back and forth. On both sides of chessboard, he was wearing glasses for a while and taking down it again. This clearly showed that he was playing chess with himself. Like two people were playing chess each other in the animation. The personality of Mr. Gregorian without glasses, was anxious and impatient so that the maple leaves of scene was displayed on behalf of active and angry color of red. However, the personality of Mr. Gregorian with glasses was warm and elegant, the background was decorated with clear and bright yellow (Figure 3A, B).

2. Edge silhouette: At the edge of reflective of described subject, where was added the same color lines or block around those things to create the feeling of three-dimensional pictures. For instance, in "This Side Up", this story described that a naive and middle-aged music lover, wanted to try to
download music from the internet. However, he was not familiar with the concept of computer so that the farce was derived from his stiff idea (Figure 3C, D).

3. Figure 3. Parts of the scenes in “Geris Game” and “This Side Up”. The maple scenes behind two people of Mr. Gregory were clearly distinct. The red maple leaves represented the active and angry personality of protagonist (A); whereas bright yellow scene was on behalf of warm and elegant personality (B). Screen blue light was silhouetted on the white vest worn on a man and a box of lower-left corner on the desk, respectively (C); he forced to blow air and hope the download speed of computer to be a little faster. This moment the blue light was also contoured on his nose (D).

4. Light effects: Reasonable use of light effects will make the picture more beautiful and enrich its connotation. The animated film of “Innocent Love - A cute animated love song” was used as an example. This story showed that a shy boy loved a girl lived on his next door, but embarrassed to tell the truth. Then, he finally courage to tell her the truth through the assistance of network (Figure 4A, B).

5. Regional: City color is a kind of reproduction of the local natural environment, and reflect the local cultural environment. It can highlight the described region of story by using scene color in the animated movie. The animated film of “Oktapodi” is one of the movies nominated for the 81st OSCAR Academy Awards -the Best Animated Feature. The local color of southern Europe most trend to the combination of yellow, blue, pink and green. These colors are colorful and display the rustic color style. The animated film fully shows its regional color (Figure 4C, D).

6. Figure 4. Parts of the scenes in “Innocent Love - A Cute Animated Love Song” and “Oktapodi”. The screen blue light was silhouetted on the cheek of a boy (A); and not only on the whole face, but also on entire hand-back (B). The local color of southern Europe most trend to the combination of yellow, blue, pink and green (C, D).

7. Contrast: When the screen color continuously shows the alternative contrast which includes cold and warm colors, or color and gray-scale, it increases the picture tension of plot. For example, in “Anytime is ice-cream time”, the protagonist, ice-cream has a stiff personality. He carried a luggage wants to walk across the road, but he feared the vehicle to come speeding at the wilderness so that he looks around hesitantly. The red background gradually turned into blue, which means to symbol from the morning to the night. And the intense contrast scene means that the protagonist wait too long to cross the road (Figure 5A, B).

8. Appeal: Using colors affect the audience’s emotions. Designing the scene color complies with the plot in real-time, and shows the theme style of animation. In “Five Centimeters Per Second”, except the explanation of spring season, it is more romantic situation by using the pink as a background. Filled the space with a pink, enhances the loving story of protagonists each other (Figure 5C, D).
9. **Color cloud**: To reflect the mood of role or story content in animation, the hue related color symbol was added to the clouds of scene. For example, “The Fantastic Flying Books of Mr. Morris Lessmore”, in the scene, the pastel, colorful sky and trees reflect the mood of Mr. Lessmore who relaxed his mind by writing during the young period. The evening sky means the later years of Mr. Morris. The gradient usage of black and pale ocher shows the atmosphere of night coming (Figure 6).

To sum up, animation scene is the background of plot, it set off for the theme and express the environment of time and space. It is an essential part of the animation. Chang (2011) also pointed that the color of picture scene at different times and/or the change of story, similar scenes and characters will be repeated in continuous change, and generated some alternation relationship of continuity color [6]. Therefore, the creators of animation will set up the scene color according to the changing plot through the design and use of color. With the alternation of plot, they can also strengthen the color expression. In addition, the desired scene and atmosphere will help viewers really understand the connotations of animation.

**Conclusion**

Based on the communication of expression of picture composition and brightness of color presentation, the animated samples were explored and assessed the effects of color design on the animated scene. Through the content analysis and expert identification, there were at least seven kinds of expression means such as the reflection, edge silhouette, light effect, regional, contrast, appeal, color cloud, etc., to be summarized. Besides, the authors discovered that colors did not only enrich the visual effects but also make viewers to rapidly understand the color meanings of animated scene design by using these seven means.

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