

Research on interactive performance of dynamic illustration from the perspective of new media

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Abstract: This paper starts from the dynamic illustration, based on the digital media communication environment, discusses the expression of interactive dynamic illustration. By investigating the categories, characteristics and application status of dynamic illustration, comparing and analyzing excellent illustration art works, it is concluded that interactive dynamic illustration has the advantages of sensory pleasure, information transmission and space extension.

Keywords: Dynamic illustration; Visual expression; New media art; Interaction

1. Introduction

Dynamic illustration refers to the dynamic visual expression of illustration, which is a kind of visual carrier combining dynamic visual effect and static illustration form. Mainly by changing the static image, so that it can be converted into a dynamic effect and can be displayed in the digital platform. Arnheim said in *Art and Visual Perception*: "Movement is the phenomenon that most easily attracts intense visual attention, and the human eye is also attracted by movement." In terms of motion, the design of motion graphics breaks through the consistent continuity of time and space. Infinite loop dynamic playback to meet people's subconscious pursuit of "permanence". Can attract the user's attention, constantly watch without feeling tired. Dynamic illustration needs a smooth and natural transition between the first frame and the first frame before the dynamic end of the dynamic illustration, and the "seamless connection" lets the user feel that the end of the time in the dynamic illustration, and the cycle time arrangement must be a dynamic closed loop within itself, rather than the time we experience in the life of a straight line forward.

In general, dynamic illustration is to create a lively and interesting interactive space for the audience through the combination of diversified visual images and various movement forms. This dynamic and diverse visual form of illustration can be more favored by the audience and is a more advantageous and innovative form of artistic expression.

2. Dynamic illustration category

2.1. Dynamic illustration of language and text

Dynamic illustrations of language and text process the text in a dynamic way, and use moving words or elements to express information in the whole picture. Through dynamic image display, the audience can deepen their understanding of the overall semantics of the text, breaking through the cognitive limitations of traditional text information, making the transmission of information more accurate and vivid, and gradually bringing human emotion and temperature to the text. The first is to add some auxiliary visual elements on the basis of text, so that the reconstructed information is more vivid and rich in visual language. The other is to combine the words concretize, so that the words become a specific image from the overall vision, and deepen the understanding of the information content. For example (Figure 1) this work by illustrator Sipu, the artist combines the four characters "wind and rain" with the elements of spring. Through the rotation of the words, the artist vividly depicts the coming of spring for the viewers, which enhances the semantic meaning of the words themselves and adds a little interest to the picture.



Figure 1: A Gentle Breeze and Drizzle by Sipu

2.2. Dynamic illustration of theme and context

This kind of dynamic illustration will have a clear theme before creation, usually multiple groups of illustrations together to form a series of stories, such as the four seasons, solar terms and festivals, which is also a more popular form of dynamic illustration expression. For example, (Figure 2) seasonal series illustrations of bittern cats, the artist places the characters in the sun, the leaves are blown gently by the wind, and the characters are in a relaxed state of walking, which also shows that the artist wants to stay away from the noise of the world and enjoy the beautiful mood of the moment. The artist does not use too many dynamic elements. Instead, he integrates the text with the atmosphere of the scene. Partial animation, coupled with simple words, makes people feel visually relaxed and enjoyable.



Figure 2: The Four Seasons

2.3. Interactive dynamic illustration

Interactive dynamic illustration is the application of illustration to dynamic story products, which can not only meet the user's pursuit of audio-visual enjoyment, but also increase the user's sensory experience. At present, the popular interactive dynamic illustration in the market is mainly divided into two forms:

One is to add dynamic illustrations to the parts of the static picture. Use dynamic illustration as a fun addition to interactive illustration. In the new edition of "A Thousand Li of Rivers and Mountains", it shows how to integrate dynamic illustration into interactive illustration to add interest. The artist's integration of ancient artifacts and technology enables traditional paintings to break through the limitations of two-dimensional planes and interact with the audience. In addition, viewers can also

participate in the story and enjoy the wonderful feeling of "turning a mountain into a crane". This not only gives viewers an in-depth understanding of classical Chinese culture, but also provides them with a new and unique visual experience. Since the launch of this version, the number of users of its software has continued to rise, which is obviously a new communication method for the public popularization of traditional culture and traditional art with the help of new media.

Moreover, the multi-drawing layers of new media illustration are easy to modify, which is more convenient for dynamic interactive transformation in the later stage. With the support of 5G information transmission mode, high-speed transmission services for high-definition film and television and interactive applications have become popular. In this new media era, high-definition mobile applications such as 4K and 8K and video resources can be used to enhance users' visual sensory experience, reflecting the characteristics of beauty and extreme thinking.

The second is to take dynamic illustration as the main visual form of the work. The main body of interactive story products is dynamic illustration, which is composed of text and dynamic illustration or other graphic elements. For example, the single player game "The Land of Heart", the main body of the screen is dynamic illustration, the user according to the interactive prompts to operate, the dynamic screen and text change with the change of the plot, with the background music, very vivid. This kind of dynamic illustration itself has a complete story narrative, adding interactive design, sound, touch and other elements to the illustration, it is completely possible to produce an interactive story game product.

3. The characteristics of the narrative language of cyclic fragmentation

Animation narrative has a long time, interactive dynamic illustration is more created in less than one minute, which makes interactive dynamic illustration less time output of memory points compared with traditional animation. The appearance of GIF makes the original short-term memory become circular, strengthening the viewer's cognition of memory from the side, making the animation in a few seconds infinite cycle, forming an effective memory in the mind^[1]. On the basis of static illustration, it uses interactivity and dynamic movement to enhance the transmission effect of picture information, which can make viewers more convenient to understand the design concept of the creator. From the point of view of expression, it is to use more convenient technology to achieve the editing means of repeating montage. This also forms a closed loop of memory for the audience to understand the content, so that each frame of painting has an independent memory point to be recognized, and is connected with the series of paintings to generate new conceptual cognition.

When interacting with dynamic illustrations, the viewer can either watch as a whole or watch in fragments, depending on the interaction order chosen by the viewer. Strictly speaking, interactive dynamic illustration is a secondary creation based on the multi-creation of static illustration. In terms of the world view of the original picture, the viewer can roughly understand the intention and technique that the author wants to express, and the expression of cyclic fragments enriches the expression of illustration. Therefore, the viewer can also choose to have a secondary understanding from the dynamic details. This is the breaking and reassembling of the work. The emergence of new technology has made the picture a new integration of "moving" and "static", so that illustration works no longer have only one viewing mode, and the so-called dynamic and static are appropriate. When viewers watch static illustrations, they are aimed at the overall generalization of visual content, covering the expression from the macro subject to the detailed elements. When interacting with dynamic illustrations, the first thing that comes into the eyes is the dynamic details and the motion track of the graphics. From these dynamic contents, the core ideas that the author wants to highlight can be explored, and then more visual information can be received based on the dynamic extension of the timeline.

4. Interactive dynamic illustration performance advantages

The emotionalization of media interaction makes illustration art move from one-way linear narrative to interactive narrative. Emotion becomes the protagonist of art, and viewers integrate emotion into a part of narrative space. Under the demand of interactive emotion, the image ontology, visual materials, behavioral interaction and immersion experience expressed by illustration art are all classified as the expression of narrative structure, and their narrative design is promoted to the multi-dimensional space-time of virtual and real ^[2]Compared with traditional illustration, interactive dynamic illustration has the following four advantages: physiological pleasure of sensory experience; The physical pleasure of social interaction; Change the mode of information transmission; Enhance the spatial extension of the picture.

4.1. The physical pleasure of sensory experience

Physical pleasure includes sight, hearing, smell, taste and touch pleasure, which is an instinctive level of response. The interactive form of dynamic illustration is mainly reflected in visual elements, picture scenes, forms of expression, etc. In order to promote the emotional communication between the subject and the object, strengthen the interactive experience in the sense and create a specific scene space, maximize the participation of the audience, and achieve multi-faceted emotional interaction with the audience.

In terms of vision, dynamic illustration works are displayed in a variety of ways, and the transformation form of the picture has become more innovative. For example, from the original single-screen switch to multi-screen interaction, a mirror to the end, virtual reality, etc., among which, multi-screen interactive display is the most common. Multi-screen interaction mode often uses augmented reality technology to dynamically display the picture, and generates the switch of the picture content through the audience's sliding on the screen; The form of picture display of a mirror to the end is to imitate the stretch of TV lens without switching, and the dynamic illustration is presented to the audience one after another without switching the screen. The audience can also participate in the presentation process, for example, it can manually control the advancement and regression of the lens to achieve unique visual effects.

In the creation process of interactive dynamic illustration, gesture is also an important interactive link of illustration. The appropriate gestures should be designed according to the group division of the audience, and the difficulty of the gestures should be adjusted to make them more in line with the audience's action habits. In this way, the audience can not only have a good interactive experience, but also promote the audience to forward and share.^[3]The stimulation of the audience's tactile system is not only on gestures, but also can be integrated with the function of the mobile terminal product itself. For example, in the gravity sensing system, appropriate gestures can perceive the audience's action needs through the gravity system sensor of the mobile terminal, and then produce corresponding picture effects. The dynamic information of the picture can in turn stimulate the audience to act again, thus forming a good interaction cycle and enhancing the interactive experience of the audience and dynamic illustrations.

4.2. The physiological pleasure of social interaction

Social pleasure comes from interacting with others. The interactive form of illustration breaks the one-way communication mode between the creative subject and the object in the traditional illustration creation, forming the reverse communication from the object to the subject and even the multi-direction communication interaction between the object and the object, and the interaction gives the object initiative. Many communication technologies, such as mobile phones, Ipad tablets, laptops and other products, can be used as communication carriers for interactive dynamic illustrations. While speeding up the speed of information transmission, dynamic illustrations can consciously narrow the social distance between audiences in the process of communication due to their more intuitive theme transmission. The function of reposting and commenting will also enhance discussion and interaction, and viewers can gain satisfaction and a sense of belonging in this way. Dynamic illustrations are highly interactive. The two-way social interaction with viewers through the dynamic form of the picture is a cognitive and emotional interaction with the audience, which greatly improves the audience's interest and sense of participation in the work. Designers guide the audience's emotional changes through the dynamic changes in the picture. From the overall design of the picture, it helps the viewers to accurately receive information, understand the content of the picture, stimulate the viewers' interest and arouse their psychological resonance.

4.3. Change the mode of information delivery

With the help of new media technology, we can basically realize multi-sensory information transmission, and dynamic illustration has extremely diversified characteristics in the application field. It can not only be printed on paper media, clothing and packaging for communication, but also can be used in public service advertisements, H5, video and other dynamic media, and even can be used for interactive game communication. This mode of communication greatly enhances the performance of the works and the efficiency of information transmission. With the development of augmented reality technology, users can also experience illustration works at close range without leaving home, and obtain unique sensory experience from the first perspective through active interaction(Figure 3).With the support of the current highly developed mobile communication hardware and technology, such a high-

definition interactive display can be applied in mobile apps, personal PCS and intelligent video and audio equipment in major exhibition halls, so as to achieve multi-dimensional and highly compatible coverage of the full platform, improve the dissemination range and expand the total audience.



Figure 3: Ise. Lee "planting into another word"

4.4. Enhance the spatial extension of the picture

The form of interaction expands the dimension of dynamic illustration and extends the sense of space of dynamic illustration. Art forms with a sense of space are relatively more attractive and visual advantages. With the development of new technologies and new media, the extension of space is also increasing, among which virtual reality and augmented reality have become popular choices to extend illustration space. In recent years, many illustration exhibitions have applied augmented reality in the display of art works, combining art and digital technology to create a new dimension of art. AR is used to process the two-dimensional plane of illustration. Through the scanning of specific software, the audience can see the dynamic illustration effect. The illustrator can also supplement the other content not shown in the illustration through augmented reality technology, and the space of the original illustration can be enlarged through AR interaction to create a three-dimensional space. And the Dunhuang theme post office on the new Dunhuang postcards, through the AR effect to restore the scene of Dunhuang flying sky (Figure 4). In terms of visual performance, the small program realizes three-dimensional dynamic representation of a small part of the flying sky modeling through AR technology, so that the audience can break through the double restrictions of time and space, enter the mural, and feel the creator's artistic conception processing of the characters in color and texture.



Figure 4: Dunhuang Theme Post Office

5. The development trend of interactive dynamic illustration

At present, interactive dynamic illustration is mainly in the visual, auditory and tactile aspects of illustration art, but in the future, it may be interactive experience through other sensory channels. For example, in terms of tactile information interaction, when the audience interacts with virtual elements, they will feel the real texture through the touch of the interactive point of the screen, and truly realize the effect of simulation. These upgrades in sensory interaction can make dynamic illustrations more colorful, greatly improving viewer engagement and interaction. And now when the audience participates in the viewing experience of AR dynamic illustration, they need to download the corresponding application in advance to view the subsequent illustration information. This step is relatively troublesome for the audience. With the development and promotion of the mainstream augmented reality experience platform in the future, it is foreseeable that the enthusiasm and curiosity of the audience to experience interactive dynamic illustration will no longer be exhausted due to the long software download time, which will greatly improve the accessibility and interaction of dynamic illustration. So that more people can easily appreciate and participate in the creation of illustration through simple operation.

6. Conclusions

As a display carrier of information transmission, dynamic illustration not only has the characteristics of rich information and interesting pictures, but also more vivid expression of emotions, which makes it form a unique advantage in the development and communication of illustration art, which is different from traditional illustration and animation. The continuous presentation of new art forms in illustration art is closely related to the development of The Times. The intelligent diversification of new media has led to the creation of more abundant forms of illustration. The public's pursuit of art has gradually changed from the demand for viewing to the demand for interaction and participation, and at the same time, it has higher requirements in terms of aesthetic taste. Nowadays, people begin to explore new forms of expression with more tension and creativity. Interactive dynamic illustration inherits the advantages of traditional illustration, and at the same time conveys information more accurately and effectively through artistic expression techniques. On the premise of meeting the emotional needs of the audience, interactive dynamic illustration also has certain commercial value, which has gradually been widely disseminated and promoted, and is welcomed by more and more people.

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