Research on the Narrative Art's Artistic Expression of Digital Images in Museums — A Case Study of H.C Andersson's House

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Abstract: With the rapid development of digital technology, domestic museum exhibitions gradually use digital images as the main exhibition technology, but there is still a lack of diversified and innovative application methods. Taking the digital images in the H.C Andersson's House as an example, based on the two dimensions of "human" centered immersive space and empathetic story, this paper sums up three different artistic expression methods of "switching perspectives", "interactive narration" and "immersive space", aiming to provide reference for the digital image application in domestic museum exhibitions.

Keywords: Museum exhibitions, Digital images, Narrative structure, Artistic expression, H.C Andersson's House

1.   Introduction

Compared with traditional images, digital images have a more comprehensive performance space in the way of presentation. However, most domestic museums often lack artistic beauty and immersion experience in the narrative language and the construction of narrative space. This paper aims to take the digital image works in the H.C Andersson's House as an example, sum up the innovations in the image expression, and then provide reference for domestic museums, making the museum's own narrative more vivid and interesting, and at the same time giving participants more subjective initiative and sense of substitution.

Firstly, the paper explains the value embodiment of digital image narration in the museum from the two dimensions of external space and internal story, and summarizes three new directions of digital image artistic expression: visual perception, interactive narration and "immersive" experience. Secondly, the paper explains the construction concept of three innovative artistic expressions, and summarizes the core contents of three innovative methods: visual perception, interactive action and sensory experience. Finally, taking the H.C Andersson's House as an example, this paper analyzes the digital image cases based on the above three innovative artistic expression methods.

2. The Museum Digital Image Narrative Structure

2.1. Narrative Space of Immersive Scene

Traditional videos can no longer fully meet the narrative needs of immersive scenes. Digital images will give creators more expression space [1]. Traditional video images have some limitations in information expression due to the limitation of two-dimensional screen, such as unclear information transmission due to low screen resolution, lack of innovation due to the fact that content transmission mainly relies on audio-visual senses [2]. Such forms of expression can resonate with the audience to a certain extent, but the audience will inevitably have a sense of distance from the two-dimensional screen, and it is difficult to immerse themselves in the story that the museum hopes to show. The application of digital images not only breaks through the traditional two-dimensional screen narration to the three-dimensional scene immersion space in latitude, making the image narration more substituted and artistic, but also integrates the digital innovative picture technology , making the digital image picture have more diversified expressions. H.C Andersson's House specially invites well-known artists, and uses a large number of digital images to elaborate a series of exhibition works, such as holographic images, natural lighting simulation, surround sound effects, etc. This enables visitors to feel more real details of the narrative space when entering the immersive scene space. Various narrative space display methods can not only break the boundary between reality and virtual, the distance between space and visitors, but also facilitate visitors to integrate into the narrative field, bringing visitors more sensory stimulation and better immersion experience.

2.2. Empathy in Plotting

The immersive scene is not only the enhancement of the authenticity of the space itself, but also the stimulation of the visitor's emotion and the empathy of the visitor to the story contained in the narrative space. The story line of the museum is the spiritual core of the digital images in the museum.As excellent film and television works will be produced by visitors,Visitors will also be affected by the story line and the emotions of the characters in the immersion scene. This requires not only a subtle and true immersion scene, but also the story connotation that can resonate with the visitors. Visitors will be more inclined to put themselves in the scene and connect the feeling content with their own experiences, which is helpful for visitors to understand and remember the story [3]. In addition, the traditional image narrative is gradually changed into digital image narrative, in which the content carrier is constantly expanding and the expression method is constantly changing. The relationship between digital image and its audience carrier has also changed. Digital images are no longer constrained by the monotonous expression on the screen, and participants themselves are constantly being empowered. This is mainly reflected in the interactivity of digital images. Participants can directly influence the narrative content and even the trend of the story plot through subjective actions. At this time, visitors will completely empathize with the story and they will also be part of the narrative. Participants' direct participation in digital images not only makes the story plot more meta and personalized, but also greatly improves participants' understanding and participation in the exhibition works [4].

3. The Construction of Digital Image Narrative Language in Museum

3.1. Visual Perception: Creative Visual Experience

The most direct impact of digital images on visitors is the visual experience, which promotes the museum to change from a single exhibition display to a variety of visual experiences. The exhibition needs to draw lessons from more artistic forms of expression and break through stereotypes in terms

of image color and visual angle. Only in this way can the traditional narrative of the exhibition be changed to bring visitors a more profound and impactful visual experience. Taking the artistic expression of the image of "Introduction to Hans Christian Andersen" in "H.C Andersson's House" as an example (Figure 1), the artist in the digital image works uses the way of image fragment transformation to form a portrait, and shows the appearance and dress of Hans Christian Andersen to the visitors in an interesting artistic way, thus avoiding the straightforward introduction of the traditional museum figures. The addition of visual effects to digital images makes the images extremely random and creative, which not only expands the time and space of narrative content, but also brings visitors more direct visual impact and deeper impression.

Figure 1: Introduction of Hans Christian Andersen.

3.2. Interactive Narration: the Intervention of New Media Technology

Traditional museums have strict visiting etiquette. Visitors are often physically separated from the exhibition and cannot interact with the exhibition. With the development of the times, the new media technology represented by digital images reshaped the relationship between people and objects, changing the concept of "exhibit-centered" in traditional museums to "people-centered". The emergence of many interactive modes, such as button interaction, touch-screen interaction and somatosensory interaction, not only enhanced the audience's sense of presence and interaction, allowing visitors to participate in interactive narrative space, but also aroused the audience's own emotions and feelings through the characters and story plots in the scene, thus achieving the purpose of dissemination of the theme of the museum. Taking the interactive exhibition of wine glasses in Allard Pierson Museum[1] as an example, an imitation of an ancient Greek wine glass with a sensor is placed on the exhibition stand with the clear English word "pick me up" (fig. 2). A projection light shines on the wine glass above the exhibition stand. The audience can interact with the figures in the digital projection in front by lifting the wine glass. The virtual figures in the projection will also raise the wine glass after the visitors lift the glass.
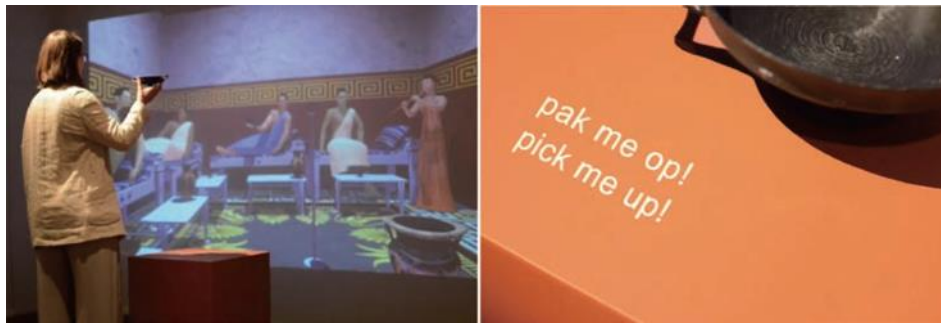
Figure 2: Device for interaction through glass.

3.3. Immersive Experience: the Sensory Experience of Ideology

The authenticity of the immersive experience not only comes from the interaction between the spatial narration and the visitors, but also from the more detailed design, such as the lighting, music and even the sense of smell in the environment, i.e. the immersive experience created by the superposition of multi-sensory elements. The visitors can not only interact with the narrative content, they are also the protagonist of the exhibition, and experience the immersive scene with the most direct senses [5]. In the "Imagine Van Gogh: The Immersive Exhibition" held in Canada in 2020 (Figure 3), the exhibition uses the immersive 360-degree panoramic holographic projection technology to restore more than 200 original works to 3d scenes. Colors in the paintings are flowing, the top of the digital projection space is the starry sky, raindrops are on the ground from time to time, and with various environmental music, visitors are brought into Van Gogh's perspective, starting from the cabin to take a walk in a small town in Arles, go to a cafe, and stroll under the starry night. Immersive scenes not only give visitors exquisite and real scene experience, but also fully stimulate the participants' artistic imagination. The public's aesthetic thinking on the works is also the ultimate goal of the aesthetic value of the works.

Figure 3: Imagine Van Gogh: The Immersive Exhibition.

4. The Artistic Expression of Digital Image Narration in the Museum-taking H.C Andersson's House as an Example

4.1. Artistic Expression from a Different Perspective - The Snow Queen

Digital images endow images with great arbitrariness and creativity, which also provides more paths for artistic expression, and switching perspectives is one of them. Switching perspectives can be related to abstract paintings at the artistic level. The so-called abstract paintings are objects that are observed from different perspectives, then these images are geometrically processed, and finally

pasted on canvas. The aim is to show the three-dimensional reality with two-dimensional images, even the multi-dimensional reality that the human eye cannot feel. This "greater reality" is not the same from the artistic perspective, it can be another way to observe the world, which is another perspective. Similarly, three-dimensional works of art can also show "greater reality" by switching perspectives. Take "Snow Queen" in the H.C Andersson's House as an example (Figure 4), the digital imaging in the exhibition is spliced by multiple fragments. Although the cast image is a two-dimensional plane, because the image carrier is no longer constrained by the canvas, the digital image projected on a three-dimensional object can switch perspectives more easily than a two-dimensional plane. This feature enables visitors to deeply feel the world in the story under the switching perspectives, which not only deepens the depth of the exhibition content, but also brings new freedom to its artistic expression. In the scene, a screen with many edges and corners like glass fragments is arranged, which not only represents the broken mirror in the fairy tale, but also symbolizes the edges and corners of the ice surface in the world of ice and snow. The design of the display skillfully combines the multi-edge features of "glass fragments" and "ice". In the space environment, the digital projection is projected on the glass-like angular structure. The projection light not only forms an image on the debris plane, but also reflects through the colored screen in the whole space, which makes the space scene have a different aesthetic feeling and better renders the atmosphere of space narration. In the scene, tourists can stand in front of the huge multi-angled exhibition screen and experience the story of the world of ice and snow from a different perspective, which not only gives visitors more interest to experience, but also helps visitors to further bring in and understand the world of the hero in the story through perspective transformation.

Figure 4: Scene of "Snow Queen".

4.2. Sense of Interactive Participation: The Little Match Girl

In the virtual interactive scene, "participation" is the key factor to arouse the visitors' feelings and emotions, and the audience's participation in the interactive process is progressive from perception level, behavior level to meaning level in turn [6]. First, visitors should have a sense of presence in the narrative space at the perception level, i.e. "feeling in a certain scene" or "feeling in the same scene with a certain person". Through atmosphere rendering or language guidance, visitors can feel the emotion and narrative plot of the characters in the exhibition at close range. Second, visitors should have a sense of autonomy [7] at the behavior level. Visitors are no longer far away from the exhibition

narrative and can feel that the interaction is initiated by themselves. Moreover, individual behaviors affect the whole narrative space through interactive devices, and finally, the sense of resonance generated by the visitors at the sense level. The exhibition narrative awakens the emotional feelings of the visitors through the foreshadowing of perception and behaviors. Finally, the participants can combine their personal feelings with the whole narrative field to generate emotional resonance [8]. Take "Little Match Girl" in H.C Andersson's House as an example (Figure 5). The exhibition projects the digital image at the corner formed by the two screens, so that the screens half surround the visitors. The visitors can control the little match-striking action of the little match girl in the image through the match-shaped column buttons in front of the screens. From the perspective of spatial perception, the projection on the screen is mainly blue tone, showing the cold environment. The match shape interaction device takes red as the main color tone to symbolize the warmth of the match, and the contrast of the cold and warm degrees of the two colors better renders the atmosphere of the space scene. From the behavioral aspect, the red button of the match is very striking in the dark environment, and the little girl shivers in the large screen projection. Visitors can press the red button to help the little girl light the match, and at this time, the projection light changes from the cold color tone to the warm color tone, symbolizing that the little girl obtains warmth. Visitors directly affect the narrative space through interactive devices. From the meaning level, visitors can press the red button five times in total, representing the five last matches in the story. The digital image scene will also show the illusion of the story after striking matches in turn. Under the interactive narration, the interactive device greatly enhances the interactive feeling and the bringing feeling of the visitors. It not only enables the visitors to truly participate in the spatial narration and promote the narrative development with their personal behaviors, but also makes it easier to awaken the emotions of the visitors and make them resonate with the story.

Figure 5: The Little Match Girl.

4.3. Reappearance of Immersive Integration — The Little SeaMaid

The reappearance of immersive experience is based on multi-sensory elements to create a more realistic spatial experience. The superposition and use of multi-sensory elements can provide tourists with a more personalized and creative experience [9]. The richer the multi-sensory experience, the deeper the visitors' somatosensory memory of this experience [10], which fully expands the visual-oriented digital image narrative space and greatly stimulates the visitors' artistic imagination about the narrative content. In reproducing the immersion experience, visitors will have a sense of ownership. The audience can actually feel the sensory experience of the original narrative protagonist in the scene, and fully integrate the specific environment into the multi-sensory combination of light, ambient sound, touch, etc. In an ideal state, the real self in the museum and the virtual self in the immersion scene will blend with each other, and eventually reach the state of mutual ecstasy of emotion and body. At this time, the spatial narrative content focuses on the feelings of the participants,

giving visitors more imagination space for the narrative content from the perspectives of vision, touch, hearing, etc. Taking "The Little SeaMaid" in H.C Andersson's House as an example (fig. 6), the scene portrays the spatial environment of mermaid singing from three aspects of vision, touch and hearing. In the visual aspect, the white light on the top of the head symbolizes the moonlight shining on the reef, and the seaweed-like objects beside the reef support the iron ball, among which there are digital images of the mermaid story. the moonlight and seaweed better indicate the scene of the sea at night. In the tactile aspect, the scene arranges stone-like objects in the center of the space. Tourists can feel the feeling of sitting on the sea by lying down or sitting on a stone. On hearing, the background music has the sound of sea breeze, waves and mermaid singing, creating a quiet and ethereal atmosphere. In the exhibition, visitors can understand the narrative content of the exhibition by watching the digital images inside the iron balls, then lie down with their backs against the rocks, look up at the sky curtain or close their eyes. The singing of the mermaid and the sound of the sea breeze and waves are ethereal and relaxing. In a quiet environment, visitors can easily get into the immersed environment where the mermaid sings at night, thus stimulating a series of artistic imaginations of the visitors. In the exhibition, the designers simulated the ethereal environment of the sea mermaid singing at night by recreating the immersive environment, and added the content of the digital image narration with the superposition of sensory elements. Visitors can have further experience of the exhibition narration by feeling the story scenes.

Figure 6: The Little SeaMaid.

5. Conclusion

In today's era of rapid development of digital technology, digital imaging provides a richer expression for exhibition art and design in museums. Therefore, how to rationally and innovatively apply digital imaging technology has become the most important issue in museum exhibitions. This paper points out that immersion space and empathetic narrative are two exhibition features that are becoming more and more important in today's exhibitions. Both advocate that the exhibition center should be changed from "object-centered" to "people-centered". Only when visitors effectively resonate with the narrative content in the exhibition hall, can the functions of museum culture dissemination and popular science education be better reflected. Finally, this paper takes the digital image exhibition of

H.C Andersson's House as an example, and points out three innovative digital image cases based on "perspective switching", "interactive narrative" and "immersive scene", which are designed to provide ideas for digital image exhibitions in existing domestic museums.

Annotate

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