

RESEARCH ON IMMERSIVE DISPLAY DESIGN OF ANCIENT COINS BASED ON NARRATIVE THEORY

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Abstract: The immersive digital narrative of museum immersion display and narrative theory fusion has become a new hot spot, bringing new opportunities for museum heritage display, which improves the experience of museum visitors, the innovation of museum display, the profoundness of museum heritage value transmission, and strongly promotes the development of cultural industry. The article takes ancient coin artifacts as the object of analysis for the design research of narrative theory and immersive fusion display, and explores the digital narrative strategy of ancient coins in three main aspects: space design, interaction design, and narrative content design, hoping to provide a new direction for the form of ancient coin display, enhance the viewer experience and fully feel the cultural connotation and charm of ancient coins.

Keywords: immersive digital narrative; museum, ancient coins

1、 Research background

With the continuous development and maturity of computer science, the museum's cultural relics display in line with the trend of the times from the traditional display of cultural relics to digital multimodal display transformation, people from the basic material needs to a higher level of spiritual needs, from a single sensory experience to multi-dimensional sensory needs, the traditional form of cultural relics display can not meet the actual needs of the viewer, museums need to focus on improving people's Museums need to work on improving people's sense of experience, so based on digital technology immersive display in this context was birthed. The addition of narrative concepts in the creation of immersive displays can enhance the viewing experience of the audience, into the narrative immersion space, the viewer will have a deeper understanding and knowledge of cultural relics, how to coordinate the integration of immersion and narrative museums need to consider from a number of aspects, such as narrative content, logic,

plot, background, as well as space and display technology, etc. This article takes ancient coin relics as the object of analysis for the design of narrative theory and This article explores the design research of immersive fusion display with ancient coin relics.

2. Research related to immersive digital narrative

Narrative is the telling of a story. [1] Narrative has a variety of communication carriers, the traditional communication carriers are text, songs, paintings, etc. With the maturity of digital technology, a new type of narrative - digital narrative - has also been derived, which is based on the extension of the traditional narrative mode by computer science, and its main narrative forms are film and television works, interactive games, social networks The main narrative forms are film and television, interactive games, social networks, mobile applications, and the emerging AR, VR, holographic projection and other technical means as the main immersive narrative. It refers to a narrative form that makes the viewer feel immersive in the experience. [2] Compared to traditional narratives, digital narratives tend to have better interactivity and immersion.

Narrative space is a necessary factor in the narrative process, and to achieve the purpose of immersive narrative, it is necessary to create an immersive display space that matches the narrative content, using a variety of digital technology tools to create a new display space, so that the audience is free from the constraints of space and time, and enter a specific "other world" that is different from the real world, mostly with Multi-sensory multimodal for the creation of immersive display design principles, no matter what form of immersive display its essence still lies in the virtual space created by the designer, it must be a context. Contextuality is the essential property of immersive display. [3] In an immersive narrative display, the distance between the viewer and the exhibit will not be defined.

2.1. The current situation of museum immersion narrative research

In the context of enhancing national soft power and strengthening national culture, the digital transformation of museums has become an inevitable demand, and in the "14th Five-Year Plan" for the development of cultural industries, it is proposed to promote the development of innovative cultural industries with immersive experiences, and to promote the high-quality development of cultural industries through advanced digital In the 14th Five-Year Plan for the Development of Cultural Industries, it is proposed to promote the development of innovative cultural industries through immersive experiences and high-quality development of cultural industries through advanced digital technologies. Museums are also actively exploring immersive displays, and the 45th International Museum Day was celebrated on May 18, 2021, with the theme "The Future of Museums: Restoration and Reinvention. The theme is "The Future of Museums: Restoration and Reinvention." The aim is to follow the trend of technology and explore new forms of museum display, and immersive displays using digital technologies

such as AR and VR have become the new favorites in the digital transformation of museums.

Narrative theory was born in the early 20th century, originated in the field of literature, in the later development of continuous breakthroughs in the field of literature, and then penetrate in the field of humanities and social sciences, under this opportunity, museum display ushered in a new spring, museums as humanities science, cultural output of the superstructure, in meeting people's higher spiritual needs of the role of self-evident, as well as is the physical storage of the splendid Chinese culture Museums have inexhaustible resources for cultural narrative, and with the maturity of digital technology and the new experience of immersive display welcomed by visitors, the two concepts of narrative and immersion have been combined to become the new direction of museum display in the future.

In recent years, many museums have moved closer to narrative exhibitions, such as the Suzhou Museum's Springtime, which introduces the concept of narrative to create a new immersive digital narrative space to interpret the springtime, one of the twenty-four solar terms. For example, the Suzhou Museum's "Spring" introduces the concept of narrative, creating a new immersive digital narrative space to interpret the Spring Festival, one of the twenty-four solar terms, and the Capital Museum's "Phoenix Dance - Chu Culture Special Exhibition" are both exploring the narrative direction.

3 Ancient coins immersive digital narrative display design analysis

3.1. Ancient coins and narrative analysis

Ancient coins are the comprehensive reflection products of national society, economy, politics and culture. Chinese ancient coins originated from natural shellfish in the Xia Dynasty, and the smelting technology was perfected in the Western Zhou Dynasty, so metal money represented by bronze material appeared. The ancient coins in the background of the two-week period were of various types, which can be mainly divided into four kinds of cloth coins, knife coins, round coins and copper shells. After the unification of the Six Kingdoms by Qin, the round and square shape became the mainstream feature of Chinese ancient coins, and by the overthrow of the Qing Dynasty, the square-hole round-shaped coins existed for more than 2000 years and then withdrew from the stage of history.

Chinese ancient coins are unique in shape, rich in categories, complete in system and clear in vein, and the art of coinage is the main representative of ancient Chinese art. [4] The coin shape contains the ancient cosmic philosophical view of heaven and earth, and the coin script highlights the beauty of Chinese writing, especially in the Song Dynasty when the coin script was extremely rich, such as the "Daguan Tongbao" in thin gold style by Emperor Huizong of Song Dynasty, and the "Chunhua Yuanbao" in true, running and cursive style by Emperor Taizong of Song Dynasty, which is of great value to future generations. The ancient Chinese coins are an integral part of the development of the Chinese nation, and are used to explore the

cultural connotations of ancient Chinese culture, politics and economy from a more diversified perspective.

The classification of Chinese ancient coins is mostly based on the chronological order and periods, which can be divided into two weeks, Qin and Han dynasties, three states, two Jin and North and South dynasties, Sui and Tang dynasties, two Song dynasties, Yuan dynasty, Ming dynasty, Qing dynasty period, and so on. Therefore, the immersive narrative clues of ancient coins in this study follow the chronological logic of the development period of ancient China as narrative clues, which help the viewer to clarify the development of China, avoid the fragmentation of information, realize the effective communication of information, and then have a stronger systemic concept of Chinese history, the coins of each period contain unique cultural connotations, and choose the relevant narrative content and narrative means in combination with the current economic, political and cultural background of the period. With the help of digital technology, the coins become the carrier of the story, and the viewer becomes the object of the narrative, and AR, VR, holographic projection, interactive games and other digital means are used to enhance the experience and immersion of the viewer.

3.2. Analysis of the technical elements of immersive narrative

To realize the immersion of narrative process, it is necessary to fully cooperate and coordinate from many aspects, such as narrative space, narrative content, narrative strategy and other elements such as technical means, etc. To realize narrative immersion display, it is necessary to fully mobilize the viewer's senses. Rational cognition. The psychologist Akritra once conducted an experiment on the way humans receive external information, and the results showed that 94% of the information comes from vision and hearing, 3.5% from smell, 1.5% from touch, and 1% from taste. [5] Immersion is no exception, a single sensory perception is difficult to achieve the immersion of the viewer, so it is necessary to start with multi-sensory, the more senses involved, the viewer will have access to external information will be richer, easier to stimulate curiosity, emotions, memory, etc.. Make it really into the creation of immersive "other world", the traditional museum display to stimulate multi-sensory immersion is stretched, need to use digital technology means to achieve, such as high-resolution IMAX 3D technology can improve the large size, high-fidelity stereo sound, so that the viewer can experience a more realistic visual picture and sound effects. There are also hot VR, AR in recent years, multimodal simulation, including graphics, sound, motion, haptic feedback, etc., to simulate the perception of a system that approximates the real world, and thus achieve a sense of immersion.

3.3.1. Spatial design

From the perspective of immersive narrative of museum ancient coins, the spatial layout and route construction are very important. The rational layout of the narrative theme, the decoding of the narrative scene, the design and analysis of the narrative structure and narrative techniques rationally organize

the narrative scene to bring the viewer a variety of narrative experiences and touch emotions and memories. [6] A rich rational cognition is obtained through brain information processing. In the spatial design of ancient coin display, the external characteristics of ancient coins and the ancient philosophical concept of the universe are extracted as the main source of spatial design concept, and Lu Bao of the Western Jin Dynasty wrote: "The body of money has the image of heaven and earth". said square; round is the main bright, square is the main ghost. Contains the ancient Chinese simple concept of cosmic space. Therefore, the spatial design reflects a virtual space of the universe with macroscopic concepts, with a circular design in the upper part of the space, with IMAX.3D high-resolution screen, presenting the cosmic astrological list, the grand time concept of the cycle of the seasons, thus developing a more cosmic vision of aesthetic experience. The spatial layout and the narrative content of ancient coins are logically linked, which can help the viewer understand the narrative content and form a systematic rational cognition. The spatial layout can be classified according to the period of ancient coins, according to the chronological order corresponding to the two weeks, Qin and Han, Three Kingdoms, Two Jin and North and South Dynasties, Sui and Tang Dynasties, Two Song Dynasties, Yuan Dynasty, Ming Dynasty and Qing Dynasty. It can be divided into 8 thematic exhibition areas, and the corresponding narrative themes and narrative spaces of each period are selected for tandem.

3.3.2, Interaction design

Regarding the digitalization and interactivity of the museum's ancient coin display, the Shanghai Museum has already begun to explore, the Shanghai Museum's collection of ancient coins is known as rich, with the reputation of half of the coin collection, the current multimedia display of the Shanghai Museum's coin display consists of "theme film" and "multimedia touch screen". The multimedia display of the current coin display at the Shanghai Museum consists of a "theme film" and a "multimedia touch screen", using certain interactive means to greatly enhance the visitor's viewing experience, making the audience appreciate the depth and interest of ancient Chinese coin culture and arousing interest for further visits.

Interaction design, meaning the process of human-computer communication and interaction to reach consensus. Mostly using electronic technology to stimulate multiple senses to achieve the purpose of immersion, human-centered is the core concept of interaction design. The following interactive technology tools are used in this ancient coin narrative immersive display design.

Interactive projection technology. Mainly using infrared sensors and projection technology, the viewer can interact in the projection area. Because of the small size of ancient coins, the delicate content and more details, and the cultural information on both sides of the coin anyway, the viewer needs to move to both sides of the exhibition, which is inconvenient, and although the

viewer can get a glimpse of the real thing, it lacks the means to let the viewer perceive the physical information in multiple ways. Although the audience can see the shape, pattern, text and other information of the exhibits through the window, it is impossible to obtain information such as the weight, texture, sound, movement status or other hidden parts of the exhibits, which may make their cognitive process difficult and lead to deviation, so the interactive projection technology is transformed from static display to dynamic display, and the size and orientation of the coins can be adjusted at any time according to the viewer's movement to enhance the viewing experience. Experience.

Interactive game design. For most viewers, the key is not the content of the display, but the way to express and convey the content. Often, interesting and beautiful displays can stimulate the viewer's sense of pleasure and interest, and then create the desire to view the exhibition. Interactive games can make the viewer change from a passive visitor to an active explorer, and interactive games as a means of interaction can also become a carrier of narrative. The process of exploring the game is also the process of telling the story, and the theme of the game design is the smelting of coins. The game is designed with the theme of coin smelting. Using role-playing and 3D animation, the viewer can control the character to find the corresponding metal raw materials in 3D space, choose the relative smelting means, and randomly generate ancient coins of each period, and get a souvenir for each set of representative coins of a period. The game has a strong sense of context, which can make the audience feel strongly immersed in the game and greatly improve the viewer's enthusiasm and experience.

Virtual Reality Technology. VR, for short, is a virtual environment composed of computer hardware, software and sensors. It is the technology that can bring the most intense immersive experience to the viewer, with a combination of reality and reality, real-time interaction, three-dimensional immersion is also the main carrier of this narrative, through the recovery of the narrative theme content in the context of ancient coins, with high-fidelity stereo sound, presenting a rich three-dimensional information virtual environment, in the virtual environment, the viewer can interact and communicate with the things and environment in the virtual world, the viewer It is as if the viewer is in another world to achieve the purpose of immersion.

3.3.3. Narrative content design

The immersive narrative ancient coin display is divided into 8 units, corresponding to 8 narrative themes. If the entire history of the development of Chinese ancient coins is from a macro perspective, the selection of suitable narrative themes from each period needs to start from a micro perspective, and the narrative range is large and lacks focus, the information obtained by the audience is often confusing and fragmented to achieve effective communication of information. Choosing more focused figurative narrative content and organically integrating the narrative content makes it easier for viewers to form a knowledge system and obtain cultural information.

The narrative structure is arranged according to time clues, and the narrative scope is limited to the cultural and economic aspects of ancient coins. Specific historical events that are episodic, concrete and popular are chosen as the narrative content. The exhibition hall is divided into two-week period - vassals and lords competing for hegemony, the narrative content is the two-week period when the vassal states annexed each other and gradually formed the cultural concept of grand unification, corresponding to the characteristics of the coins of the two-week period due to the vassals and lords' division. During the Qin and Han dynasties - the world was unified, the narrative is that Qin Shi Huang annexed the six states and unified the world, unified weights and measures in the economy, unified currency, Han inherited the Qin system, corresponding to the Qin and Han coin shape to round square holes, and has been used for future generations. The Three Kingdoms, the Jin dynasty and the Northern and Southern dynasties - cultural intermingling, the narrative content of this period established more than thirty regimes, large and small, frequent regime changes, but promote the cultural intermingling of various regions, especially in the Confucianism, Taoism culture, Buddhism culture interpenetration and intermingling, corresponding to this period because of the frequent regime changes coin style characteristics of a wide range. During the Sui and Tang dynasties - the capital of the world, the narrative is about the peak of the development of Chinese feudal society during the Tang dynasty, with unprecedented political, economic and cultural development, the vast territory of the Tang dynasty and the great number of vassal states, which made it a truly cosmopolitan city at that time. During the Tang Dynasty, there was a large territory and many vassal states, and it was a truly cosmopolitan city. The name of the currency was separated from the weight, and the coins were not called by weight, but by "treasure", such as the coin Kaiyuan Tongbao. The two Song dynasties - calligraphy culture, mainly about the cultural achievements of the Song dynasty, especially calligraphy, such as the four great calligraphers of the Song dynasty, Su Shi, Huang Tingjian, Mi Fu and Cai Xiang. The coins of the two Song dynasties have a variety of calligraphic fonts, such as true, running, and cursive, and there is also the Da Guan Tong Bao, a coin created by Emperor Huizong. During the Yuan dynasty, the Mongolian and Chinese cultures intermingled. The narrative is that the Yuan dynasty was a multi-ethnic country established by the Mongolians, with a vast territory, and the early Yuan dynasty was dominated by the Mongolian culture, after which it was assimilated by the advanced Chinese culture, and was a period of intermingling of Chinese and Mongolian cultures. The Ming Dynasty period - maritime silk, about the Ming Dynasty is a strong state, the overseas trade economy is extremely prosperous, more Zheng He seven Atlantic, so that a large number of foreign silver into China, reflected in the Ming Dynasty in the currency, has been commonly used as the equivalent of silver for trade. During the Qing Dynasty - the country's fortunes declined, due to the long-term decline of the Qing government and the no-sea policy,

the rapid rise of Western countries through the industrial revolution, the nature of society changed to semi-colonial and semi-feudal society, economic inflation was serious. This was reflected in the development of coins in the late Qing dynasty to one for ten, one for a hundred, one for five hundred, and already to one for a thousand.

4. Conclusion

In the digital era, immersive experience in the context of narrative as a new direction of exploration for museums has irreplaceable significance in promoting cultural innovation and enhancing user experience; museums are not only spaces for displaying cultural relics, but should be fermenters for creating new cultures. In this study of narrative immersive display design of ancient coins is divided into three main design aspects, first, the immersion of space design, combined with the cosmic philosophical concept of the circle of heaven and earth to create an immersive space with a cosmic vision. Secondly, the humanization of interaction design. Fully mobilize the five senses to enhance the viewing experience of the viewer, with the help of technical means to static display of cultural relics into a multimodal dynamic display. Third, the thematization of narrative content. By choosing the narrative that corresponds to the figurative history and culture reflected in the coins of each period, the viewer's vision does not only stay in the coins themselves, but also through the cultural narrative content in the context of the coins. In the future, immersive narrative design will provide a new direction for museums to upgrade their quality - using technology and narrative theory to create personalized immersive narrative spaces that will enhance the exhibition experience and drive the development of the cultural and museum economy.

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