On the Balance Between Virtuality and Fictionality in the Restoration of Artworks: A Case Study of The Night Revels of Han Xizai APP

Xiyuan Feng

School of Arts and Communication, Beijing Normal University, Beijing, China
3205628024@qq.com

Abstract. To address the tension between virtuality and fictionality in the digital reproduction of traditional art, this paper takes the Palace Museum's The Night Revels of Han Xizai APP and the original hand-scroll as case studies, concentrating on the divergences in textual presentation and reader interaction. Adopting a comparative analysis method, the study first dissects how the painting constructs the core carrier of fictionality through the simultaneous presentation of multiple times, spatial metaphors embodied in furniture, and the polysemy of its visual signs. It then investigates the APP's technical strategies—spatial digital restoration, fixed symbolic interpretation, and multi-sensory rendering—and the attendant erosion of fictionality. By contrasting the two artefacts, the paper highlights differences in the reader's imaginative engagement, the evolving relationship between audience and work, and the generation of aesthetic experience. The research concludes that the enduring appeal of The Night Revels of Han Xizai lies in its open fictionality; any act of artistic reproduction must therefore safeguard rather than dissolve this quality. A balanced synergy between technological empowerment and artistic essence can be achieved through hierarchical protection of the text layer, open design of the interactive layer, and multi-dimensional annotation of the interpretation layer. The proposed framework offers a transferable model for the digital restoration and dissemination of traditional artworks, advancing the living transmission of cultural heritage in the digital age.

Keywords: han xizai, virtuality, fictionality, interactive design, digital restoration

1. Introduction

Amid the deepening integration of digital technology and traditional art, interactive design—by virtue of its immersive and participatory affordances—has opened a radically new channel for the digital restoration and dissemination of heritage works. The Palace Museum's The Night Revels of Han Xizai APP is a flagship experiment: through meticulously choreographed interaction modules, the static hand-scroll is converted into a walk-in, dynamic scene, effecting a leap from planar viewing to immersive re-enactment [1]. Yet, when the APP pins down the meaning of every pictorial sign with archaeological positivism and fixed captions, does it inadvertently shrink the imaginative space native to the painting? The very quest for verifiable evidence risks collapsing polysemy into a

single authorised reading, dissolving the work's essential fictionality [2]. This antinomy haunts every VR deployment in the field: how can technology dismantle temporal-spatial barriers and lower the threshold of appreciation while still safeguarding the fictionality that constitutes the artwork, ensuring that digital means serve as enablers rather than eroders of artistic essence? To answer the question, the paper juxtaposes the original scroll with its APP counterpart, comparing their textual presentations and reader-interface protocols to dissect the fault line between virtuality and fictionality, and to forge a balanced pathway that may inform the broader digital conservation and transmission of traditional masterpieces.

2. The differences in the textual layer between the original The Night Revels of Han Xizai and its APP

2.1. The core carrier of the original work's fictionality

As a classic of the Five Dynasties' meticulous figure painting, the artistic charm of The Night Revels of Han Xizai largely stems from its carefully constructed fictional expression. This fictionality is presented through three main carriers: narrative structure, spatial metaphor, and polysemy of symbols, all of which together endow the work with an open space for interpretation [3, 4].

In terms of narrative structure, the work breaks the spatiotemporal boundaries of traditional painting with the innovative technique of "simultaneous presentation of multiple times." In the painting, the protagonist Han Xizai does not appear only once, but repeatedly in five scenes: "Music Appreciation," "Dance Watching," "Intermission," "Wind Music Performance," and "Banquet Conclusion." This repetition is not a simple superposition of images, but rather constructs a narrative thread of apparent revelry and underlying melancholy [4]. In the "Music Appreciation" scene, Han Xizai sits upright on a couch in formal attire, his dignified demeanor tinged with a hint of gloom. In the "Dance Watching" scene, he rises to beat the drum, his actions fully engaged yet his eyes still holding a trace of sorrow. In the subsequent scenes, his expressions change with the progression of the narrative, sometimes sitting in quiet contemplation, sometimes waving to bid farewell, each expression hinting at different psychological activities. This narrative approach rejects a singular interpretation, allowing viewers to autonomously explore Han Xizai's inner world of "feigning madness for self-preservation" and the political undercurrents of the late Southern Tang Dynasty as they connect the different scenes [5].

Regarding spatial metaphor, screens and couches serve as markers for dividing the pictorial space. They not only fulfill the basic function of separating scenes but also, through ingenious arrangement, create a hierarchical visual rhythm [3]. This makes each segment both an independent chapter and part of a continuous narrative logic. For example, the design of the couches in the "Intermission" and "Music Appreciation" scenes is basically consistent, maintaining visual coherence. However, the couch in the "Intermission" scene is slightly angled, forming a new spatial relationship with the surrounding screens and lamp stands. This subtle change not only suggests the passage of time during the night banquet but also skillfully completes the natural transition from the "revelry" to the "intermission" scene. The viewer's gaze naturally follows the guidance of the furniture layout, perceiving the overall rhythm of the painting and the integrity of the narrative through the division and connection of space.

In terms of polysemy of symbols, the changes in Han Xizai's attire and the sudden appearance of Monk Deming are the most representative symbolic elements in the painting. Han Xizai's clothing changes several times throughout the piece: during the "Music Appreciation" scene, he is dressed in neat formal attire, exuding the elegance of a scholar-official; in the "Dance Watching" scene, he

beats the drum bare-chested, displaying a carefree and unrestrained posture; and his attire varies in other scenes as well. The ancients often interpreted these changes from a political metaphor perspective. As recorded in Diao Ji Li Tan, Han Xizai, foreseeing the fall of the Southern Tang Dynasty, deliberately feigned debauchery to dispel the suspicions of Emperor Li Yu and thus protect himself from becoming a laughingstock as a minister of a fallen state [5]. This interpretation has been widely accepted in later generations. The Ming Dynasty poet Tang Yin wrote in his inscription, "Having squandered a fortune on rouge and powder, why not learn from Mr. Geng?" This also implies that Han Xizai's debauched behavior was a deliberate strategy for self-preservation. The presence of Monk Deming also carries multiple meanings. From a historical background perspective, Monk Deming was closely associated with Han Xizai, to whom he often confided his worries about the situation in the Southern Tang Dynasty. From a religious and spiritual analysis, Han Xizai, who admired Buddhism, could regard Monk Deming as his spiritual mentor. From an artistic expression standpoint, Monk Deming's posture of bowed head in contemplation and desirelessness forms a stark contrast with the revelers' indulgence in sensual pleasures, indirectly reflecting Han Xizai's detachment from fame and fortune and hinting at his inner struggle in the complex political environment. These symbolic elements do not point to a single meaning but rather reserve ample room for diverse interpretations such as "feigning madness for self-preservation" and "debauchery leading to the downfall of the nation" [4, 5].

2.2. The APP's virtual restoration strategy

In terms of spatial restoration, the APP demonstrates respect for the original work's visual grammar by fully retaining the core design of using screens as spatial dividers [1]. By simulating the opening and turning of screens through technical means, the APP successfully creates a spatial connection between scenes that is both close and distant. For example, in the "Intermission" segment, the half-closed landscape screen not only clearly separates the inner and outer rooms but also, through the lamp stand revealed at the edge of the screen, forms a clever visual guide to the next "Wind Music Performance" segment. This approach essentially preserves the original work's narrative mode of "changing scenes with each step," allowing users to still feel the flow of space and the coherence of the narrative in the virtual scene.

However, in the interpretation of symbols, the APP shows a clear tendency towards singularity. Its annotation system provides definitive definitions for the symbolic elements in the painting: it simplistically attributes Han Xizai's consistently melancholic expression throughout to "worrying about the country and its people," ignoring the complex psychological states such as "self-preservation" and "helplessness" that may lie behind this expression [1]. For the bed scenes in the painting, it directly labels them as "evidence of debauchery," confining Han Xizai's behavior to the singular interpretation of "indulgence in sensual pleasures." This standardized method of interpretation compresses the polysemy of the original symbols, turning the originally open interpretive space into a closed one. Users can only passively accept the preset interpretive conclusions and find it difficult to explore the deeper connotations behind the symbols on their own.

In terms of sensory presentation, the APP attempts to create an immersive night banquet atmosphere for users through technical means such as Nanyin accompaniment and candlelight effects [6]. While the melody of Nanyin and the changes in the brightness of the candlelight enhance the sense of immersion to a certain extent, they also solidify a singular impression of the night banquet atmosphere. The imaginative space left to the viewers by the original work through the contrast of light and dark in the painting is replaced by the sensory experience set by the technology. Viewers no longer need to associate the atmosphere of the night banquet through the density of ink

and the warmth or coolness of colors; they only need to passively receive the sensory signals transmitted by the APP. This approach, while strengthening the technological experience, also restricts the users' imaginative abilities and weakens the aesthetic tension stimulated by the visual void of the original work.

3. The differences at the reader level between the original the night revels of Han Xizai and its APP

3.1. The function of reader's imagination

The original work, based on the physical characteristic of the hand scroll that is gradually unfolded section by section, creates conditions for the exercise of the reader's imagination [7]. The traditional hand scroll needs to be unfolded step by step from right to left, and the presentation of each scene depends on the reader's manual operation and the movement of their gaze. This progressive viewing rhythm means that the narrative of "multiple times in one picture" cannot be presented in full at once. The reader has to actively connect the dispersed scenes such as "music appreciation," "dance watching," and "intermission" to construct a complete narrative thread in their mind. Meanwhile, the blank spaces on the screens and the symbols in the picture can further stimulate the reader's active association. In the "music appreciation" section, Han Xizai and the top scholar Lang Can sit side by side on the couch, with similar postures but different expressions. Readers familiar with the political background of the Southern Tang Dynasty can interpret the subtle power game between the powerful minister and the literati group from it. In the "dance watching" section, Han Xizai gets up to beat the drum. Although his action seems to be very committed, he can't hide his worries in his eyes. Readers can link this expression with the spiritual dilemma of intellectuals. If we put aside the historical context and start only from the artistic entity, the blocking function of the screen can also be regarded as a pure composition skill, and the blank space in the picture can also be interpreted as the unique aesthetic interest of literati painting. These diverse interpretations are not the only answers preset by the original work, but the result of the reader's interaction with the work through imagination [8].

In contrast, the design of the APP to some extent replaces and weakens the reader's imaginative function [1]. The "automatic pop-up interpretation for hotspots" feature set in the APP allows readers to obtain standardized interpretations of scenes and symbols simply by clicking on preset hotspot areas, without having to actively explore the details of the picture. This passive mode of reception dissolves the process of independent discovery and thinking. Meanwhile, the APP creates an immersive experience through sensory designs such as Nanyin accompaniment and dynamic light and shadow effects. Although this enhances the sense of reality of the scene, it also focuses the reader's attention on the sensory stimulation brought by the technology, rather than on the imagination of the connotations of the picture. For example, the Nanyin music in the "Wind Music Performance" segment directly defines the atmosphere of the scene. Readers no longer need to associate the melody and artistic conception of the music through the postures of the figures and the placement of the objects. The imaginative space is compressed by the deterministic content presented by the technology. The original experience of "active interpretation" gradually becomes a passive reception of preset information.

3.2. The relationship between the reader and the work

In terms of the relationship with the work, the original painting empowers readers with full autonomy for dialogue, allowing them to form personalized experiences by integrating their individual historical knowledge [7]. Readers from diverse backgrounds can establish unique connections with the work based on their own knowledge, life experiences, and aesthetic preferences: those well-versed in the history of the Five Dynasties may pay more attention to the political metaphor of Han Xizai's "feigning madness for self-preservation"; readers skilled in painting techniques may focus on the exquisite brushwork of "iron wire outline" and the color gradation; ordinary readers may sense the complex emotions of the characters and their connection with the era from the night banquet scenes. In this relationship, readers are not passive recipients of information, but active constructors of meaning, and the value of the work is enriched and extended through the personalized interpretations of readers.

The APP, however, imposes a preset "framework of meaning" between the reader and the work, limiting the diversity of their relationship [1]. The interaction logic of the APP is strictly defined: the viewing angles are mostly fixed and preset by the system, making it difficult for readers to freely choose their entry points for observing the picture; the annotations of symbols are also mainly singular in interpretation, lacking the presentation of academic controversies. For example, when interpreting the changes in Han Xizai's attire, the APP only emphasizes the political connotation of "worrying about the country and its people" and does not mention other viewpoints such as "feigning madness for self-preservation." If readers want to explore different interpretations, they will be restricted by the functions of the program. Under this design, the relationship between the reader and the work is no longer an equal dialogue, but the reader's compliance with the program settings. The subjectivity of the reader is weakened, and it is difficult to break through the constraints of the technical framework to construct their own interpretive logic.

3.3. The generation of aesthetic experience

The generation of the aesthetic experience of the original work entirely depends on the reader's autonomous control, which can fully mobilize the reader's subjective initiative [7]. The pace of unfolding and reading the hand scroll is determined by the reader: one can quickly skim through to grasp the overall narrative or linger over a particular section to savor the details of the brushwork; one can stay for a long time in the "Music Appreciation" section to feel the lively atmosphere of the banquet or slow down in the "Banquet Conclusion" section to experience the desolate mood of parting. This autonomy in rhythm allows the reader's emotional experience to be self-regulated. When the reader is affected by the melancholic emotions in the painting, they can slow down the reading pace to deepen empathy; when they want to focus on the techniques and step out of the emotions, they can quicken the pace and change perspectives. The process of generating the aesthetic experience is a two-way interaction between the reader and the work, with the reader's subjective initiative running through it from beginning to end, and the resulting aesthetic feelings are distinctly personal.

The APP's full-sensory immersive design, however, may divert the aesthetic experience from the artistic essence of the work [1]. The "Reading by Candlelight" interactive feature launched by the APP allows readers to illuminate the details of the painting by simulating the action of holding a candle, accompanied by surround sound music effects, creating a strong sense of technological immersion. However, this design tends to focus the reader's attention on "how to operate" and "how to gain a more realistic sensory experience," rather than on the in-depth perception of the pictorial

metaphors. For example, readers may become engrossed in the fun of the "candle-holding" action or be attracted by the melody of the music, while neglecting the loneliness of Han Xizai holding a drumstick to bid farewell in the "Banquet Conclusion" section and the era's metaphor behind this loneliness. The sensory stimulation brought by technology overshadows the artistic connotations of the work, shifting the core of the aesthetic experience from the perception of art to the experience of technology and significantly weakening the work's aesthetic function.

4. Conclusion

The reason why The Night Revels of Han Xizai has become a classic work of art that has spanned a thousand years is that its core charm lies in the rich artistic fictionality it carries [3-5]. This fictionality is not a baseless fantasy detached from reality, but is constructed through three key elements: the narrative structure that breaks the shackles of time and space with "multiple times in one picture," allowing Han Xizai's repeated appearances in the five scenes to form a dual interpretation space of apparent revelry and deep-seated melancholy; the screens that serve both to divide and connect, and the symbols with multiple connotations together constitute a polysemous visual language; and the blank spaces in the picture that reserve an elastic space for the viewers' free association.

As an important tool for the digital restoration of traditional art, VR technology must adhere to the premise of not dissolving fictionality during its application [1]. If there is an excessive pursuit of the authenticity of physical space and the definitiveness of symbolic interpretation, for example, by solidifying academically speculated scenes as the only standard and defining the connotations of symbols with a single viewpoint, it will instead compress the imaginative space of the original work and reduce the work of art to an accessory of technological presentation. On the contrary, if a layered processing strategy of necessary restoration and open understanding is adopted—if technology is reasonably used on the basis of respecting the artistic ontology, and at the same time, the readers' subjective initiative is stimulated through interactive design—then a balance between technological empowerment and the essence of art can be achieved. This logic of balance is not only applicable to the digital practice of The Night Revels of Han Xizai, but also provides a reference framework for the VR dissemination of other traditional works of art, helping traditional art truly "come alive" in the digital age.

In the VR practice of traditional art works, it is necessary to start from three aspects: text protection, interaction optimization, and interpretation system construction, to achieve the balance between virtuality and fictionality.

Firstly, implement a hierarchical protection design. At the textual level, it is necessary to strictly adhere to the core elements of the artistic ontology: fully retain the original work's narrative logic of "multiple times in one picture," ensuring that the relative positions, character relationships, and visual associations of scenes such as "Music Appreciation" and "Dance Watching" are faithful to the original, maintaining the narrative rhythm that is both close and distant between scenes. At the expansion level, for the missing scenes that are controversial in academia (such as the "bathing and changing clothes" segment speculated by some scholars), no definitive completion is made. Instead, a blank annotation format such as "This scene is in question, and relevant research viewpoints can refer to XX literature" is used to indicate the controversy, preserving the space for readers to freely associate based on the clues in the picture and avoiding the technology intervention from dissolving the openness of the original work.

Secondly, optimize the interaction system design. The core goal of the interaction function should be to serve the reader's interpretation, not to dominate the reader's experience. Therefore, it is

necessary to weaken the limitations of a single perspective and fixed process: allow users to freely choose the viewing rhythm, which can simulate the progressive experience of gradually unfolding the traditional hand scroll section by section, or freely jump to a single scene of interest for in-depth exploration; open up a multi-dimensional viewing perspective to break the limitations of flat viewing, while avoiding the distraction caused by overly complex perspective switching, enabling readers to build a personalized narrative logic based on their own cognitive habits and regain the initiative in art appreciation.

Thirdly, construct a multi-layered annotation system. The interpretation system needs to abandon the mode of setting a single standard answer and form an annotation structure that balances knowledge and openness: the basic layer focuses on historical facts, providing certain content such as the names of objects (such as "Jiegu Drum," "Han-style Light-frame Silk Hat") and historical background (such as the political environment at the end of the Southern Tang Dynasty) to lay the foundation for readers to understand the work; the expansion layer then presents academic controversial viewpoints side by side, for example, regarding Han Xizai's image, the "satirical theory" (which believes that his behavior is a criticism of the extravagant style of the Southern Tang Dynasty) and the "self-preservation theory" (which believes that his debauchery is to dispel Li Yu's suspicion), presenting different research perspectives through split-screen comparison, literature citation and other forms, guiding readers to think independently in a variety of viewpoints, rather than passively accepting preset conclusions.

In addition, for VR developers, the primary task is to clarify the boundary between the "artistic ontology" and the "technical space." The "artistic ontology" encompasses the core fictional elements of the work, such as the "multiple times in one picture" narrative and the polysemy of symbols in The Night Revels of Han Xizai. These elements are crucial in determining the artistic value of the work and should not be casually altered due to technical demands. The "extendable technical space," on the other hand, refers to the presentation of detailed craftsmanship, such as the texture of furniture wood grain and the weaving techniques of clothing patterns. These can be reasonably restored and supplemented through technical means. However, excessive showiness should be avoided—such as complicated light and shadow special effects and redundant interactive actions. If these designs deviate from the essence of the art, they will instead distract the reader's attention from the connotations of the work, dissolving the artistic fictionality and aesthetic tension.

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