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Research on Strategy and Practice of Digital Revitalization of Historical and Cultural Districts based on Empathy Communication

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Abstract:
The digital rejuvenation of historic and cultural districts has accelerated in recent years. By merging digital technology with cultural heritage conservation and scene reconstruction, digital animation has been infused into cultural heritage, enhancing the dissemination of traditional Chinese culture. The transmission of culture in these districts depends not only on digital technology's external support but also on the "empathy" that resonates with visitors, stirring national identity and fostering an "emotional community" to sustain the digital revitalization. This study investigates the role of empathy in the digital revitalization process, analyzes current empathy factors in digital communication, and explores strategies for integrating empathy into revitalization efforts, aiming to chart new directions for the digital enhancement and propagation of historic and cultural districts.

Keywords:
Digital Communication, Encoding-Decoding, Empathy Communication, Historic and Cultural Districts, Cultural Spaces

1 Introduction

In recent times, digital technologies have been widely applied in the dissemination of traditional Chinese culture. The digital revitalization of cultural institutions has emerged as a pivotal strategy for cultural development.

Many cultural institutions have actively incorporated digital technologies into spatial revitalization, using innovative and diverse interactive methods to reintroduce traditional culture to the public and promote the resurgence of the cultural tourism industry.

Historical and cultural districts, as crystallizations of local folk culture and carriers of urban memories, serve as vivid and powerful historical textbooks. Their unique architecture and relics bear witness to the profound cultural heritage of China. Based on the profound cultural heritage behind historical and cultural districts, their protection and restoration are of significant importance for the dissemination of traditional Chinese culture. Currently, many regions in China have adopted the "online + offline" model, investing in digital technologies to create unique district memories through various channels and expand the district's visibility.

Currently, the digital and intelligent construction of historical and cultural districts primarily focuses on

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infrastructure development. Online, district authorities typically establish official accounts to release images and videos, attracting potential audiences or launch virtual panoramic maps within mini-programs to bridge geographical distances and enhance visitor experiences. Offline, scene-based communication is the main mode of expanding the influence of historical and cultural districts. Reviewing the current digital revitalization process of historical and cultural districts, there are potential issues that may affect the final outcome of digital revitalization.

The large-scale application of digital technology often leads to a homogenization of different cultural districts, potentially diminishing their local characteristics, and producing cultural homogenization. Moreover, the beautification of technology may simultaneously diminish the spiritual essence of cultural heritage, and reliance on short-term digital stimulation for district activation is not a sustainable strategy. Therefore, constructing deeper emotional identity and achieving empathy-based communication is a new direction for many districts investing in digital technology. Historical and cultural districts use unique narrative discourse to enhance the audience's embodied experience and identity, realizing empathy-based communication and forming cultural memory and identity, ultimately extending to a sense of pleasure at the spiritual level.

This paper takes historical and cultural districts as an example to explore the empathy factors that may exist in open cultural spaces empowered by digital technology and the important role of "empathy communication" in the entire revitalization process. It aims to provide insights into the opportunities and challenges currently facing the digital construction of historical and cultural districts in China, and to offer some ideas for the future revitalization and inheritance of historical and cultural districts.

2 Literature Review

2.1 Digitized Cultural Spaces

The digital revitalization of public cultural spaces has garnered significant attention from academic circles both domestically and internationally, with research focusing on their diverse cultural values.

The term "cultural space" was first introduced by the French scholar Henri Lefebvre in his work "The Production of Space." It is primarily used to describe urban spaces with cultural characteristics, viewing urban spaces as a unified entity of material, spiritual, and social spaces. Despite the concept's longevity, there is no consensus in academia on its definition. This study primarily explores the concept of "cultural space" from the perspective of intangible cultural heritage.

In the modern society, due to residents' relocation and the disruption of life flows, cultural spaces represented by districts inevitably face "de-localization." The unique features of historical buildings are often shaped by media into visual spectacles, becoming "cultural destinations" of interest. [1] With the continuous development of digital technology, traditional cultural dissemination has undergone drastic changes, and cultural spaces have been recreated as places for continuing historical memories. In recent years, recognizing the immense potential of digital technology in the construction and development of cultural spaces, the field of communication has placed great emphasis on the study of the dissemination mechanisms of digitized cultural spaces.

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Scholars often take practical cases of domestic cultural spaces as their starting point. For example, the domestic scholars Gong Jie and Li Lei conducted a detailed study on the narrative construction and dissemination of the Great Wall's image as a cultural space from the perspectives of symbolization and landscape.[2] Mu Wei, from the perspective of mediaization, explores the positive role of virtual reality technology in the construction and reorganization of cloud art galleries.[3] The application of digital technology in the field of cultural spaces has become increasingly mature, but most of these studies focus on the technical perspective and overlook the crucial role of deeper emotional identification behind the technology in the process of traditional cultural dissemination.

2.2 Empathy Communication Within Cultural Spaces

Empathy, initially a concept in aesthetics, was first proposed by the German scholar Robert Vischer. It primarily refers to the aesthetic feelings experienced by visitors when viewing artworks. [4] In the early 20th century, with the development of psychology, "empathy" was introduced into psychological research and gradually developed into a system. As the concept of empathy entered the field of communication, scholars from various perspectives conducted systematic research on empathy communication. Foreign scholars Kerem E, Fishman N, and Josselson R found the positive role of empathy communication in the cultural field. They believe that the process of cultural heritage is a dynamic change intertwined with cognition and emotion, reflecting people's psychological resonance and emotional resonance with their collective, place, and nation. The concept of empathy, which connects emotions, cognitions, and ideas among individuals, becomes evident.[5] In China, the concept of "empathy communication" is comprehensively expounded in Zhao Jianguo's book "On Empathy Communication." Zhao defines empathy communication as the process of forming and transmitting common or similar emotions and feelings, and analyzes the intrinsic connection between empathy and communication.[6] Additionally, scholars from the perspective of audience psychology have supplemented the concept of empathy. Foreign scholar Cuff BM, Brown SJ, Taylor L, and Howat DJ indicate that empathy is an emotional response dependent on the interaction between trait abilities and state influences. [7] Chinese scholars Liu Haiming and Song Ting define empathy communication as the process of participating in information reception, infection, expression, and sharing when individuals face emotional scenarios of a group.[8]

The development of digital technology has provided a reliable support for constructing emotional links between traditional culture and the general public. The application of empathy communication in the field of traditional cultural dissemination has received widespread attention, and related research is becoming increasingly mature. Xie Qingguo and Wei Junquan have observed that empathy-based communication can help expand the influence of cultural TV programs and create a shared emotional space for the dissemination of traditional culture. [9] Similarly, Jiang Ling and Zhang Yuhuan, focusing on museums, explored the symbiotic relationship between narrative and empathy with the support of digital technologies like the metaverse.[10] However, few scholars have linked the communication revitalization of historical and cultural districts with the mechanism of empathy-based communication, leading to a lack of comprehensive discourse that addresses the questions of this research. Building upon the existing research achievements and limitations, this study will adopt a theoretical perspective on empathy-based communication to explore the significance of empathy in the digital revitalization of historical and cultural districts.

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3 Exploring Empathy Factors: Node-Based Empathy Communication

3.1 Symbolic Empathy Factors: From Dispersion to Aggregation

3.1.1 Primitive Symbols: Spatial Design and Exhibition Display

The spatial architecture and cultural heritage scattered throughout historical and cultural districts are the fundamental elements that constitute these areas, and they are also the most prominent "empathy factors" in the entire process of digital revitalization. These cultural heritages embody China's traditional culture's pursuit of the realm of creation and carry the most valuable cultural connotations of the Chinese nation over thousands of years. They do not require extensive technological reshaping; they are already symbols rich in cultural meaning. The diversity of objects and overall layouts provide a rich source of inspiration for the application of digital technology.

Currently, digital technologies for the protection of district buildings and cultural relics are becoming increasingly mature. Firstly, districts can utilize cutting-edge digital technologies such as big data and artificial intelligence to promote digital visualization and smart management. For instance, in Xi'an, Shaanxi Province, a popular tourist destination in recent years, the protection of the ancient city wall with over a thousand years of history is a key focus of local authorities. The application of a series of digital monitoring devices has simulated the full digital image of the ancient city, providing a vast amount of data for its protection and revitalizing the ancient city wall with vibrant new life. Moreover, virtual reality (VR) and augmented reality (AR) technologies can "restore" the original appearance of cultural relics in digital spaces, helping visitors to intuitively appreciate the beauty of culture. The Datong City Museum, for example, has used high-precision 3D model production technology and AR glasses to digitally recreate the original appearance of the broken cultural relics, allowing the public to transcend time and space to experience the original beauty of the relics. The Museum of Modern Chinese Press and Publishing has restored ancient caves through digital technology, allowing the public to view the complete, lively murals through VR and AR glasses and other smart devices.

In specific scenarios, the public can only gradually let down their psychological defenses and establish an emotional connection with the scene itself if they have a relatively good experience. As the most primordial "empathy factors," the spatial architecture and exhibits within historical and cultural districts can rely on digital technology and their inherent cultural connotations to provide the public with a basic experience. During the process of revitalization and utilization, we must overcome the digital divide that digital technology may bring. Facing the cultural heritage empowered by technology, we must ensure that the older generation still has memories to seek, while also making the presentation mode of traditional culture closer to the cognition and preferences of the younger generation.

3.1.2 Processed Symbols: Fluid Spiritual Symbols

Historical and cultural districts serve as repositories of local civilization, brimming with a rich tapestry of traditional cultural elements. Digital technology has transformed intangible or obscure cultural expressions into visible and interactive symbols, facilitating a shift from "narrow bandwidth" to "wide bandwidth" in cultural representation.[11] These processed "empathy factors" align more closely with contemporary communication principles and are more readily accepted by the public. Consequently, the creation of fluid spiritual

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cultural symbols is a highly effective strategy for promoting empathy-based communication.

Chinese historian Pang Pu has posited the "material-institutional-spiritual" three-tiered cultural structure. [12] According to this framework, traditional cultural symbols can be categorized into three types: the outer layer of material cultural symbols, which are objects embodying cultural significance; the middle layer of institutional cultural symbols; and the third layer of spiritual cultural symbols. In the context of contemporary integrated media, the digitalization of the third layer of symbols has reduced the threshold for empathy-based communication, allowing a more uniform experience of traditional culture and the establishment of a "sentimental community."

Digitalized spiritual cultural symbols come in various forms, with auditory symbols being particularly influential among them. Specific images can directly resonate with people's deep-seated cultural "memes," while auditory elements enhance the sense of presence and elicit profound emotional responses. Furthermore, digital symbols tend to adhere to a more unified aesthetic standard, mitigating the barriers to empathy-based communication caused by cultural differences.

3.1.3 Aggregated Symbols: Local Characteristics and Thematic IPs

Intellectual Property (IP) has emerged as a relatively new concept in China and has become a mainstream form of cultural dissemination in the field of cultural relics and museums. The Ministry of Culture and Tourism's document "On Promoting High-Quality Development of the Digital Cultural Industry" has already introduced the concept of IP, advocating for the creation of original IPs with distinct national cultural characteristics and strengthening the development and transformation of IPs to achieve sustainable dissemination of traditional culture.

Generally speaking, an IP is a collection of diverse symbolic elements created around a specific subject, forming a system of "empathy factors." In recent years, historical and cultural districts have adopted IP strategies, integrating local characteristics, creating digital IP images, launching creative cultural and artistic products, and cultivating "empathy factors" from various perspectives to seek emotional effects that drive "breaking out of the circle" in communication.

The Forbidden City IP, as the leading IP in the field of cultural relics and museums in China, still holds enormous development potential. It is worth learning from by historical and cultural districts and famous towns across the country. From a communication perspective, the Forbidden City has leveraged the "first impression effect" on the public and media, spreading various symbols to infect the masses and reinforce the impression of the Forbidden City in society, forming a distinctive and exclusive IP.

On this basis, the Forbidden City has fully combined the communication characteristics of the new media era to build a comprehensive media communication matrix and launch targeted creative services. It has established a chain that is both stable in IP value and open and inclusive. Currently, the Forbidden City primarily focuses on high-frequency communication to drive low-frequency consumption and experience. It is continuously refining its IP style and image to align with the aesthetic values of the younger generation, capturing the emotional preferences of a large number of young consumers. From "the cats of the Forbidden City" to current events and creative cultural and artistic products, the Forbidden City is seeking to establish a stable

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"emotional connection" with the younger generation. The comprehensive application of its own "empathy factors" has also proven that IP is a strong support for achieving empathy-based communication.

3.2 Empathy Factors in Scenes: From Experience to Participation

3.2.1 Digital Texts as Inspiration

Chinese civilization, with its profound history, has left numerous spiritual treasures for modern society. Ancient texts are the carriers of traditional culture, documenting various aspects of society, people's lives, as well as language, philosophy, literature, and art from different historical periods. These texts provide original materials and research subjects for the dissemination and revival of traditional culture and offer inspiration for the scene-based construction within historical and cultural districts.

Digital technology plays a crucial role in the preservation of ancient texts. Many ancient texts have been passed down for a long time and are difficult to preserve, with a significant number of them being damaged to some extent. The digitization of ancient texts and cultural relics, through techniques such as scanning and OCR recognition, transforms them into electronic versions. Massive quantities of these texts are then uploaded into data systems, integrated into databases, and made accessible for sharing and data exchange. According to "The General Catalogue of Chinese Ancient Books" , there are approximately 200,000 ancient books in existence in China. The "Chinese Ancient Books Resource Database" established by the National Library (National Center for the Protection of Ancient Books), features more than 20 subcategories of digital ancient books and digital local records, supporting multiple modes of search. The "Shidian Ancient Books" digital platform, powered by artificial intelligence, has made numerous classic ancient books available online, offering full-text and categorized searches, as well as the ability to look up named entities and encyclopedic information, providing a public service. Digital technology enables ancient texts to be preserved in digital form, making them easier to store, retrieve, and disseminate.

Based on the reconstruction of scenes within historical and cultural districts, verifying the authenticity of materials from ancient texts and excavating the essence of the cultural context are essential paths. Digital technology can construct knowledge graphs based on ancient texts within databases, selectively extracting elements to allow users to obtain valid information at the first instance, significantly reducing the time spent on collecting information during the initial stage of scene construction. Designers, using the filtered materials, can deeply understand and appreciate the rich cultural heritage of historical and cultural heritages, enabling them to encode culture more vividly throughout the entire process of scene dissemination. This results in scenes that are more captivating and emotionally resonant with the public, stimulating emotional resonance.

3.2.2 NPC Characters for Enhanced Affinity

NPC, an abbreviation for "non-player character," originates from video games and refers to characters that randomly appear in games, providing players with a richer gaming experience. In the context of historical and cultural districts, NPCs are typically dressed in specific attire, trained professionally, and perform to recreate the original human atmosphere within these districts. Their well-rounded character portrayals, through multisensory stimulation and interaction, evoke empathy in the public, leading to emotional resonance.

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In recent years, many historical and cultural districts have recruited NPC staff to interact with tourists at fixed times and locations during themed events, enhancing the public's sense of intimacy with these districts. From the perspective of "interactive ritual," NPCs and tourists engage in activities with a ritualized, symbolic, and purposeful nature through speech, actions, and symbols. These activities allow tourists to experience and feel the culture, establishing emotional connections and promoting effective empathy-based communication.

Taking the character "Wang Po" from the Wansui Mountain · Daxia Wuxia City in Kaifeng, Henan Province, as an example from the first half of 2024, the "Wang Po Matchmaking" performance quickly gained popularity on various social media platforms. The reason behind its success is its alignment with the marriage and relationship topics of interest to contemporary young audiences. The performance, originally following conventional narrative structures based on historical stories, was ingeniously transformed by NPC Wang Po through interactive engagement with tourists, creating opportunities for the collision of traditional and modern cultures and attracting widespread public attention.

Erving Goffman, an American sociologist, mentions in his theory of dramaturgy that "people in social life are like actors on a stage, presenting their behavior and image according to different social situations and role requirements." In this context, historical and cultural districts serve as the "front stage" for NPC performances. NPCs use limited stage time to present themselves in character, evoking empathy from the public and encouraging them to join in and follow the performance.

On digital platforms, NPCs are provided with a broader performance space for dissemination. Official media accounts of various districts constantly collect internet trends, combining their themes and characteristics, and invite NPCs to shoot promotional videos. In summary, NPCs, as performative "empathy factors," inject innovative power into the revitalization of historical and cultural districts. Through visual rhetoric and interaction, they enhance the intimacy of scenes, attracting people of all ages to join the "performance," and fostering emotional and identity recognition, allowing the public to deeply accept the infusion of traditional culture.

3.2.3 Immersive Experience Scenes

"In immersive scenes, vivid images can stir emotions"[13] ,as Kurt Smith suggests,scene construction can transport audiences into an independent "mimetic" world separate from reality. Here, flowing images continuously appear around the audience, guiding them to form emotional connections with the images through multisensory interaction, achieving empathy.

The term "scene" originally comes from the language of film and television. In 2014, Robert Scoble and Shel Israel introduced the concept of "scene" into the field of communication studies. In recent years, the concept has been widely used in the field of cultural relics and museums due to its immersive, interactive, and interesting characteristics. Historical and cultural districts have successively launched scene-based spatial experience activities, offering the public a more diverse cultural experience. Whether in enclosed architectural spaces or open streets, immersive scenes lead the public into grand historical landscapes, engaging in a dual exchange of senses and spirit, creating an "emotional resonance" between the viewers and the cultural relics. Psychologist Mihaly Csikszentmihalyi introduces the concept of "flow experience" in his book "Flow: The Psychology of Optimal Experience", which occurs when individuals are completely immersed in a scene.

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They filter out other emotions and only experience excitement, fulfillment, and satisfaction within the scene, reaching a state of self-forgetfulness. Compared to simple symbol stacking to evoke resonance with the public, integrated scenes have a stronger impact, transporting tourists into specific historical times and spaces, temporarily forgetting their reality and gaining intense, profound satisfaction from the scene. This satisfaction can gradually transform into a powerful factor for promoting emotional movement.

Currently, historical and cultural districts have launched various scene-based performances. One approach is to build independent theaters within scenic areas, creating small "virtual spaces" that are fully enclosed, providing the public with flowing images or performative programs. However, there are inevitable limitations to enclosed spaces, where the public mainly observes the scene performances as audience members. With the application and popularization of digital revitalization in district construction, historical and cultural districts have begun to introduce new immersive experience models, using digital technology to bridge the boundaries between open spaces and virtual digital spaces, allowing the public to truly participate as participants.

For example, the Chengdu Jinjiang Night Cruise connects scattered historical and cultural districts as nodes along a night tour route, using digital light and shadow technology to provide an immersive experience. Many districts also add digital interactive elements within architectural spaces, launching immersive activities such as theme script games, or using VR and AR equipment to construct "hyper-realistic" virtual worlds, enhancing the public's perception of narrative in the scene. The Chang'an Twelve Hours theme district has created an immersive district exhibition with Tang culture as the theme, offering a large-scale immersive live-action game "Da Tang Never Sleeps" and other immersive entertainment activities, allowing tourists to enter the world of the Tang Dynasty thousands of years ago.

4 The trend of Empathy-Based Communication in the Digital Revitalization of Historical and Cultural Districts

4.1 Ethical Issues and Objective Constraints in Empathy-Based Communication

4.1.1 Ethical Issues Arising from Digital Revitalization

4.1.1.1 Technology's Impact on the Aura of Cultural Relics

The term "aura" was first coined by German scholar Walter Benjamin to describe the authenticity, veneration value, and aesthetic distance of culture. Historical relics, as carriers of culture, also possess a natural aura. Digital technology presents historical relics in a vivid and dynamic manner to the public, but in some historical and cultural districts, there is an excessive reliance on digital technology, leading to a situation where technology "oversteps its bounds" while culture "loses its place" to some extent, diminishing the original aura of cultural heritage. The entertainment-oriented interactive experiences provide the public with superficial, short-term pleasures, failing to achieve the ultimate goal of effectively conveying the cultural essence through digital technology. Over time, as the fleeting pleasures fade, the public may become weary of the dazzling technology, gradually forgetting the memory of historical and cultural districts with the emergence of new things and activities. Therefore, in the process of digital revitalization, historical and cultural districts must reevaluate the intensity and scale of technological investment, prioritizing cultural dissemina-

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tion and ensuring a balance between entertainment and educational functions.

Moreover, digitalized collections and physical artifacts are not equivalent, despite the significant extension of cultural heritage's digital lifespan through technological investment. The transformation of physical artifacts into digital form may weaken their authenticity; standardized interfaces and formats may also reduce the uniqueness and personalized expression of the artifacts. When the medium acts as the subject of empathy, its lack of similar experiences may lead to "stupid" behaviors in human interactions, breaking the original atmosphere and making it difficult to establish empathetic links with humans. [14] In historical and cultural districts, digital technology, as a medium for conveying the aura of cultural relics, may diminish their inherent aura. If the public focuses more on digital artifacts, they may become immersed in the "hyper-real" digital world and misunderstand the essence of the artifacts.

It is worth noting that due to the fragile nature of cultural heritage such as architecture, reasonable optimization remains the primary principle for cultural and tourism departments in carrying out revitalization work. Personnel must apply digital technology within the range that cultural relics can withstand.

4.1.1.2 Cultural Governance and Copyright Issues

Throughout the process, there are potential risks and challenges that need to be addressed by the developers. Firstly, data and copyright issues are still under debate. Due to the limitations of digital technology and external factors involving interests, if database data is not meticulously reviewed, it is prone to errors. Moreover, some historical and cultural districts lack awareness of copyright, managing their creative cultural products inappropriately or engaging in infringement. Additionally, the digital divide is an objective reality in the empathy-based communication process, leading to "hard" encoding and rigid, didactic behaviors by communicators, which may trigger the audience's resistance and end empathy. Although many historical and cultural districts advocate for the advancement of digital revitalization, they often adopt rigid promotional methods that are ultimately not accepted by the public. Furthermore, while digital technology pursues new forms of display and experience, there is a risk of cultural vulgarization. With varying levels of media literacy among internet users, since the development of mass communication media, lowbrow, entertaining information products have gained a broader audience. Social media platforms prioritize "traffic" as the ultimate goal, driving self-media and even some official media to release entertainment-focused content to attract attention. Taking TikTok as an example, it is a key online platform for cultural and tourism promotion. Many official media promoting a historical and cultural district often extract entertainment elements from songs and TV shows to create promotional videos that resonate with internet users, but beneath this production and dissemination chain, the essence of culture is not effectively communicated, and the charm of traditional culture is diluted, with entertainment taking precedence and the emotional driving force shifting.

4.1.2 Societal Objective Factors Constraining Empathy Effectiveness

Currently, the revitalization process of historical and cultural districts within China faces several objective challenges. The digital revitalization has transformed the ecological landscape of these districts, attracting a large number of tourists during holidays to experience local cultures and humanistic landscapes across the country. However, the excessive number of visitors poses challenges to the protection of infrastructure within these districts. If facilities are damaged, it not only brings cost risks to the district development but also dis-

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rupts the integrated process of empathy-based communication.

Secondly, some historical and cultural districts are overly commercialized, introducing excessive commercial elements such as multiple fixed stalls selling creative cultural products or other items, leading to tourist consumption. The abundance of vendors can cause chaos in the scenic area, affecting the public's experience of district culture and hindering the cultivation of emotional identity. From the perspective of the public, cultural and tourism promotion targets tourists nationwide, many of whom come from different social and cultural backgrounds. Official "encoding" alone is difficult to create a common meaning space with all tourists' subjective "decoding," and simplifying history and cultural content further hinders the establishment of empathy links.

Furthermore, due to the varying geographical locations of historical and cultural districts and the uneven development among regions, some areas lack sufficient operational funds, technology, and talent, resulting in stiff empathy-based communication methods and a slow revitalization process.

4.2 Application and Future Outlook of Empathy-Based Communication in the Activation of Historical and Cultural Districts

4.2.1 Primacy Effect: Building a Communication Matrix to Weave an Empathy Network Subconsciously

The inclusive and diverse online ecosystem is the primary platform for cultural promotion in China. In recent years, relevant departments have successively established official accounts on social media platforms, building a communication matrix to expand the visibility and enhance the influence of scenic areas, laying the first psychological hint for users in the entire empathy process.

The "primacy effect," also known as the "first impression effect," refers to the decisive impact of the first information received on an individual's cognition and attitude during the process of information dissemination. As an important concept in psychology, it describes the strong impression and lasting memory people have of the first information they receive. A mature omnimedia communication matrix can expand the popularity of historical and cultural districts, allowing netizens who are not familiar with the ancient towns and local cultures to break through spatial and temporal constraints and understand the cultures of other regions through social media. When netizens first browse related media content, the content conveys a first impression of the district. If the content is "hardcore" or resonates with the public, it will immediately create a strong impression of the subject matter. Accounts within the matrix produce high-quality content continuously, promoting historical and cultural districts and making the short-term and intense impression more enduring.

Therefore, the exploration and construction of online communication channels and the establishment of communication matrices play a crucial role in the activation of historical and cultural districts. The public forms a "first impression" of the district through the information they consume. When the public receives information, they develop certain emotions towards its content. As cultural information accumulates, becomes prevalent, and co-exists, the public often unconsciously incorporates emotions into communication and coordination. [15] This process repeats, deepening the public's emotional identification. Shunwang Media actively builds an omnimedia communication platform matrix, leveraging its 4K/8K ultra-high-definition video

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production and technological R&D capabilities, and empowers it with metaverse digital human technology to create a "Haiyou Mingjun, Fengya Jinan" urban historical and cultural IP digital communication platform, assisting in the cultivation, creation, and continuous operation of Jinan's city IP and enhancing the city's soft power.

4.2.2 Content as King: Producing High-Quality Content to Tell Cultural Stories Through Scenes

The essence of a scene in empathy is the process of "encoding" and "decoding". Communicators, starting from both online and offline channels, use digital technology to "encode" integrated cultural symbols and distribute them according to the characteristics of the communication channels. When tourists or potential users receive the "encoded" information, influenced by "collective memory," there is a common meaning space between communicators. The recipients "decode" the information and are driven by the emotional resonance of national identity, creating empathy with the cultural connotations expressed in the scene.

Currently, historical and cultural districts still face challenges in scene construction, primarily due to insufficient immersion in time and space. Virtual scenes do not provide tourists with enough immersive experiences, thereby weakening the emotional impact of the scene on communication. For example, some historical and cultural districts have launched immersive digital exhibitions using VR/AR technology to attract a large number of tourists. However, the actual experience often falls short of the promotional hype, leading many potential tourists to be disappointed. Online realistic spaces may shorten the physical distance, but if digital technology is used solely to display real scenes without adding more interactive "rituals," the constructed scenes seem to be nothing more than comprehensive picture displays. This approach fails to evoke empathy from users and achieve effective promotion.

Therefore, in constructing digital scenes, historical and cultural districts should further delve into historical origins, seeking to construct deeper cultural scenes. They should adhere to the principle of "content is king," allowing the most authentic spirit of historical and cultural districts to be restored in the public eye through digital technology. Adding a proportion of symbols with a sense of ritual can enhance public participation and evoke emotional resonance with history and culture from multiple angles, achieving the effect of empathy-based communication.

4.2.3 Technological Empowerment: Utilizing Digital Tools to Provide Empathy Drivers

"Technology can transmit emotions through our nerves, enabling us to experience empathy; at the same time, technology shapes our bodies and brains, allowing us to resonate emotionally with external things." [16] Technology plays a crucial role in the realization of empathy-based communication. Currently, China is actively promoting the "Culture + Artificial Intelligence" model for cultural dissemination, maximizing the effectiveness of digital technology in the revitalization of cultural heritage.

The "National Cultural Big Data System" resource library uses digital technology to conduct large-scale intelligent and genetic digital encoding of a vast array of traditional cultural resources. Leveraging the database, historical and cultural districts can archive their revitalization process as digital memory, making it easier to find information or supplement further development. For instance, Xingtai City has mapped its ancient his-

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torical and cultural districts and historical buildings, establishing a digital archive and assigning each cultural heritage a unique "3D ID." Nanjing's relevant management center has used digital technology to digitally encode the gene of the Nanjing City Wall and the Ming Dynasty's Forbidden City ruins, creating a comprehensive digital archive of cultural relics.

For the dissemination of historical and cultural districts, digital technology overcomes the physical and cultural boundaries of communication at the lowest cost, integrating the two organically. It enables interactive communication, constructing an immersive field where "host and guest" are blended, promoting the linkage and IP creation among various digital cultural formats, and attracting more potential audiences to understand the profound cultural connotations behind the districts.

Furthermore, many historical and cultural districts have launched "Cultural Tourism + Service" strategies on online mobile platforms, offering APPs, mini-programs, and other service platforms to provide more convenient immersive experiences for tourists. For instance, Lijiang Ancient Town has actively integrated into the "Digital Yunnan" initiative, launching the "One Phone Travel Yunnan" service, which allows tourists to use an online mini-program. Suzhou has introduced "Yunyou Suzhou" and "Suzhou to You" APPs, combining "intangible cultural heritage + digital," allowing users to browse local intangible cultural heritage information, deeply experience highly realistic garden landscapes without leaving home, and purchase creative cultural products.

Technology serves as the driving force for the digital revitalization of historical and cultural districts, playing a crucial role in the process of empathy. Whether it is the digital protection of cultural relics, the construction of immersive scene spaces, or the provision of online channels, it relies on the continuous empowerment of digital technology. In the era of intelligence, more people can experience the cultural charm of different historical and cultural districts at any time and anywhere. From intelligent landscape construction to embodied sensory experiences, these are the prerequisites and guarantees for historical and cultural districts to establish an emotional community with the public. In other words, digital technology greatly enhances the final effect of empathy-based communication.

4.2.4 Collective Memory: Gathering "Cultural Scenarios" to Create Organic "Cultural Phenomena"

The complete intangible cultural heritage includes "cultural phenomena" and "cultural contexts." The "cultural phenomena" are the "text" part of living culture within a specific cultural context, while the "cultural context" refers to the closely related elements to the "cultural phenomena," such as participants in performances, behaviors, time, place, function, effect, social background, and historical traditions. The "cultural phenomena" are nurtured within the "cultural context," and the two coexist symbiotically.[17]

In the context of the digital age, empathy serves as an indispensable bridge connecting individuals and collectives, the past and the present. It plays a crucial role in constructing and maintaining collective memory. Similarly, collective memory allows individuals to understand history from the perspective of others, fostering emotional resonance with collective history and strengthening the final effect of empathy-based communication. Historical and cultural districts can shape media memories through digital technology, influencing the formation of individual, collective, and historical memories. Within historical and cultural districts, there

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are numerous "empathy factors," ranging from the original ecological cultural heritage, spatial architecture, to the IPs and scene symbols created by humans, scattered throughout the district. These can be considered as "cultural scenarios." If the application and dissemination are limited to a few types of "cultural scenarios," it will greatly weaken the effect of empathy-based communication. The media memories crafted by historical and cultural districts, integrating empathy elements, use digital techniques to construct and strengthen collective memory, nurturing "cultural phenomena" within "cultural scenarios," facilitating cultural inheritance and social cohesion, and achieving enduring influence in empathy-based communication.

At the beginning of 2024, during the Spring Festival, a digital cultural festival named "Celebrating the Year of the Tiger in the Forbidden City" was held at the National Stadium-Bird's Nest. The festival, adhering to the requirements of the "Four Forbidden Cities" project, innovatively built a "Digital Forbidden City" and a "Vibrant Forbidden City" through the combination of "intangible cultural heritage + digital + festival." There was a man-made historical and cultural street named "Mai Bai Street" on site, divided into experience areas for intangible cultural heritage and creative cultural consumption zones, offering diverse experiences to the public. In addition to "Mai Bai Street," there was an independent digital museum with multiple interactive projects. For example, when tourists entered the digital museum, they would pass through a virtual "palace gate," instantly creating a sense of ritual. The ground screen inside the museum was a panoramic view of the Forbidden City. If tourists interacted with it, digital "auspicious beasts" and fireworks effects would appear on the ground screen. Moreover, the museum featured performances like "The Ice-Playing Scroll" and "The Qianlong Emperor's Lantern Festival Joy" , allowing tourists to join in by scanning QR codes. This digital cultural festival effectively integrated the essence of various ethnic cultures scattered across historical and cultural districts in Beijing, symbolizing empathy factors through digital technology, constructing a flowing scene that gave tourists a sense of ritual and interaction, and using the immersive experience of the Spring Festival to construct collective memory and spontaneously evoke emotional resonance among the public. Now, historical and cultural districts across the country are using traditional festivals to create themed activities, exploring ways to establish continuous empathy between the public and traditional culture.

5 Conclusion

Historical and cultural districts play a pivotal role in the dissemination of traditional culture, carrying the profound cultural essence and national soul of cities over thousands of years and serving as the vital source of their continuous cultural heritage. Digital technologies such as big data and artificial intelligence have opened up new avenues for the protection and restoration of historical and cultural districts, making digital revitalization the prevailing theme in their construction. Digital technology imbues these districts with a digital vitality, eliminating the barriers of time and space within the digital realm, allowing a wider audience to appreciate the charm of traditional culture. Furthermore, these technologies are driving the transformation of physical construction in historical and cultural districts, with immersive experience activities becoming a major focus in recent years.

However, an excessive focus on the prosperous spectacle created by technology in district revitalization, while neglecting the essence and value of cultural heritage, is detrimental to sustaining the existing revitalization achievements and may even dissipate the spiritual essence of the cultural relics. "Empathy" provides a

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new engine for sustainable digital revitalization, by identifying the "empathy factors" existing in the revitalization process of historical and cultural districts. By making these factors resonate with the public, fostering emotional identification, and promoting the establishment of emotional connections, it can help the digital revitalization of historical and cultural districts to enter a new stage, achieving more effective communication outcomes.

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