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The Revival of Music and Dance Culture of Hunan Ancestors in the Age of Digital Intelligence

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ABSTRACT

In the context of the era when digital intelligence technology deeply empowers cultural inheritance, the ancient music and dance culture of Hunan, as an important living legacy of Chinese civilisation, is in urgent need of creative transformation through digital transformation. This paper explores the revival path of Hunan culture from the three dimensions of building a digital resource base, reshaping artistic expression through technological integration, and new media communication innovation. The study shows that artificial intelligence and big data technology can systematically preserve multimodal cultural data, virtual reality (VR) and generative adversarial network (GAN) technology can innovate artistic expressions, and short video platforms and digital exhibitions can effectively expand the boundaries of global communication. Through digital intelligence, Hunan culture has not only achieved living heritage, but has also become an important link in forging the sense of community of the Chinese nation.

INTRODUCTION

Hunan, as one of the important birthplaces of Chinese traditional culture, its aboriginal culture carries deep ancient cultural imprints in almost every aspect, preserving the ancient Chinese cultural codes contained in the systematic study of the ancient culture of the Huaxia nation in the Yellow River Basin, Yangtze River Basin, Yuan River Basin, and Li River Basin involved in the era of Chi You, Emperor Yan and Emperor Huangdi, which are all-encompassing living legacies that have become precious Chi Yanhuang music and dance ancient culture living heritage. For example, Xiangxi aboriginal Nuo culture with the ancient Chi tribe of Maogus a lineage, and Xiangxi Miao drum dance, Changde silk string and other such carries a strong ancient Chinese cultural characteristics of music and art forms, has been

listed as a national intangible cultural heritage, and one by one to be salvageable protection. Art forms such as the Chenhe High Cavity and Sangzhi Folk Song are also disappearing and have attracted the attention of UNESCO. However, with the accelerated pace of modernisation, the preservation and inheritance of the living cultural heritage of Hunan culture, especially in the area of music and dance, is facing great challenges. Therefore, in this context, it is urgent to find new breakthroughs for the inheritance of Hunan culture, and the rapid development of Artificial Intelligence (AI) and Big Data provides a new way to solve this problem. Through big data to build a digital resource base of ancient music and dance culture in Hunan, using digital technology to empower the visualisation of Hunan music, and using new media platforms to help the dissem-

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ination of Hunan culture can not only more comprehensively guarantee the inheritance of the core resources of Hunan culture, but also achieve its innovative development, so as to achieve the effect of global dissemination [1].

CONSTRUCTING THE DIGITAL RESOURCE BASE OF ANCIENT MUSIC AND DANCE IN HUNAN PROVINCE

Multi-Modal Data Acquisition and Standardisation

AI technology based on deep learning can systematically collect data such as audio, music score, and dance motion capture (Motion Capture). For example, Hunan Normal University's 'Hunan Minority Dance' course has established a 553-minute high-precision video database, integrating the diverse and rich ethnic dance cultural resources in Hunan Province, taking the five major ethnic minorities, namely, the Tu, Miao, Yao, Dong and Bai, which are the most representative and populous ethnic minorities in Hunan Province, as the object of study, and applying cultural anthropology, historiography, folklore, iconography, etc., to collect data from the living forms, historical documents, narratives of the inheritors and images, and to collect data from the living forms, historical documents, narratives of the inheritors and the images. Using cultural anthropology, history, folklore, iconography and other research methods and approaches, the core content of the study is to explore the dance ontology and its essential characteristics from the existing living forms, historical documents, narratives and performances of the inheritors, and the creation of stage art [2].

Secondly, the digital media technology is used to create a large database, classify and arrange the traditional and fragmented dance information, and realise the efficient management of dance resources; the digital media technology is used in the creation process of dance art, to broaden the boundaries of dance art expression, and to give rise to more diversified new media dance works; the new media information interaction is used in the dissemination of dance information, and to build a multi-functional dissemination platform to promote dance art, and to improve the art and cultural creation. The new media information interaction is applied to the dissemination of dance information to build a multi-functional communication platform to promote dance art and improve the effectiveness of art and culture dissemination [5].

Big Data-Driven Decoding of Cultural Genes

The Hunan region has preserved rich and unique cultural heritage of ancient music, such as: digging earth gongs and drums songs, Chashan horns, Dong folk songs, He throat road songs, He reed-shengs, Huayao wuowa songs, Youshui boat songs, Shimen Tujia

songs, Tujia dongr dongr kuix, Tujia playing skates (jiv bor har), Miao folk songs of western Hunan, Changde silk strings, Xinhua songs, Yuanling songs, etc. These cultural forms not only inherit the core memory of the ancient Chinese civilisation, but also reflect the distinctive characteristics of the cultural fusion between the Yellow River and Yangtze River regions. These cultural forms not only inherit the core memories of the ancient Chinese civilisation, but also reflect the distinctive characteristics of the cultural fusion between the Yellow River and Yangtze River basins. However, these musical cultures, which are important carriers of the cultural codes of the Chinese nation, have long relied on oral transmission. Under the double impact of modernisation and digitisation, they are facing the double threat of content distortion and audience reduction. At present, through the deep intervention of artificial intelligence technology, the systematic protection and inheritance of Hunan culture is getting a brand new solution.

The use of big data and artificial intelligence deep learning technology can make the multimodal data such as audio, video, literature and pictures of Hunan music culture to be comprehensively collected and deeply analysed, thus constructing a high-quality digital resource base [4]. Through the above methods, not only can it present the veins and connotations of Hunan culture, but also provide a strong theoretical support for revealing the intrinsic law of its artistic style and cultural value. By constructing the digital resource library of ancient music and dance of Hunan, the digital resource library has achieved the multimodal preservation of ancient culture, and revealed the style characteristics and artistic value of Hunan music through big data analysis, which helps the scientific management and development and utilisation of cultural heritage.

THE INTEGRATION OF TECHNOLOGY RESHAPES THE PARADIGM OF ART CREATION

With the rapid development of digital technology, the way of creation and expression of Hunan traditional art is undergoing a profound change. Through the integration of artificial intelligence, virtual reality (VR), augmented reality (AR) and other technologies, the artistic expression of Hunan music and dance has been enhanced in an unprecedented way. These innovative technologies not only bring new vitality to traditional arts, but also open up a whole new path for their creation and expression. Among them, digital music visualisation technology, as an important carrier of technological innovation, is promoting the development of Hunan traditional arts in a more three-dimensional and cross-sensory direction.

By transforming the auditory experience of music into dynamic visualised images and effects, the expressive and infectious power of art works has been significantly

enhanced. Using holographic projection and dynamic interactive technology, the audience is not only able to experience the sound of traditional musical instruments through their sense of hearing, but also perceive the artistic effects that complement them through their vision, enhancing the immersion of the overall artistic experience. For example, in the performance of Xiangxi Tujia Tima, through the holographic projection and dynamic interaction of this digital visualisation technology, the combination of music and dance was presented more intuitively and three-dimensionally, which not only vividly restored the ancient sacrificial scenes, but also allowed the audience to immersively feel the cultural atmosphere of this ancient ritual and at the same time, intuitively appreciate the cultural and artistic qualities of the ancient Hu-Xiang culture.

Comprehensive use of VR, AR, three-dimensional display and other digital technologies to create a digital experience museum of Hunan music culture, building a combination of static and dynamic, audio-visual fusion, interactive space, to provide the audience with visual and auditory immersion enjoyment, to enhance the audience's three-dimensional sense of the dissemination of Hunan music culture [3]. The audience can feel the cultural flavour of this ancient ritual more deeply through the double stimulation of vision and hearing. More importantly, the application of artificial intelligence and Generative Adversarial Network (GAN) technology is able to generate new visual content that fits with the style of traditional music. This not only breaks the limitations of traditional expressions, but also injects modern artistic qualities into the creation of Hunan culture and art, so that it not only retains the original cultural heritage, but also meets contemporary aesthetic needs. This innovation of technology integration not only broadens the expression space of Hunan culture, but also brings new vitality to its artistic creation method. The combination of traditional music and modern technology provides infinite possibilities for artistic expression and opens up a broad space for contemporary recreation and cross-border development of Hunan traditional culture [6].

This innovative form not only stimulates the interest of the younger generation in traditional culture, but also lays a solid foundation for the innovative development and inheritance of Hunan culture. The digital twin technology in the digital modelling of traditional musical instruments can be used to scan the Tujia dongdong qin, Miao reed-sheng and other characteristic musical instruments with millimetre-level precision, and establish a virtual musical instrument library that can be operated interactively, so that the ancient tones can be preserved permanently and realize creative transformation. The intervention of blockchain technology, on the other hand, provides a reliable guarantee for the digital copyright protection of non-genetic inheritors and ensures the legitimate rights and interests of innovative achievements in digital dissemination.

NEW MEDIA MATRIX TO BUILD A GLOBAL COMMUNICATION SYSTEM

In order to adapt to the mainstream of the current electronic technology era and the 'micro' information and 'fast' pace of life, it is a general trend to update the carrier of artistic communication, so that more dance works can be digitised and processed through the interactive platform of the new media for the most rapid, flexible and extensive dissemination of cultural entertainment. More dance works can be digitised and disseminated through the interactive platform of new media for the fastest, most flexible and widest cultural entertainment. The application of new media technology has injected new vitality into the dissemination of Hunan music and dance culture [7]. With the help of short video platforms such as Jitterbug and Shutterbug, as well as MCN agencies (an entity or organisation that cooperates with content creators or directly produces a variety of unique content), traditional music can be recreated and promoted in a niche and symbolic way. By means of live network broadcasting, the camera 'tells' the story of non-heritage, realises 'online + offline' simultaneous publicity and promotion, attracts the attention of users, improves the influence of non-heritage dance culture, and provides non-heritage dance enthusiasts from all over the world with a channel for network learning at the same time. In addition to providing a network learning channel for local non-heritage dance enthusiasts, it also enables non-heritage dance to be more widely inherited [8].

The use of live broadcasting to broaden the channels for the exhibition of Hunan music and culture. Internet live broadcasting can bring visual presentation, scene-based expression, sensory experience, which can give new vitality and freshness to Hunan music culture and effectively broaden the communication boundaries and audience scope. For example, the Changsha Song and Dance Drama Theatre and Changsha Symphony Orchestra jointly created and rehearsed the red opera *Half a Quilt of the Red Army*, which is based on the classic party history story of 'Half a Quilt', and through symphonic music narrative and immersive choreography, it triggered a boom in attendance after its premiere in 2021.

The performance unit has innovatively adopted the 'online + offline' integrated communication model, which has linked more than 70 media platforms such as Hunan TV, Mango TV, Tencent Video and other media platforms for simultaneous broadcast, and set up real-time pop-up interactive zone. According to the Ministry of Culture and Tourism statistics show that the total number of people who watched the play on the whole network reached 9.76 million, and the microblogging readership of related topics exceeded 230 million times, successfully realising the modern transformation of red cultural resources. It is worth noting that the play also launched a 4K high-definition stage documentary, which

was disseminated overseas through Mango TV International Channel, becoming a vivid example of telling a good Chinese story.

Taking Changde Flower Drum Opera as an example, as one of the traditional local operas in Hunan, Du Meishang, the national representative inheritor of China's national non-legacy project Flower Drum Opera, has made a brand new presentation of Flower Drum Opera through the short-video platform, producing short videos with a sense of rhythm, which is an innovative form of bringing wider dissemination of traditional operas. Especially on Jittery Voice and Shutterbug, the relevant videos have gained extensive retweets and comments, attracting the attention of a large number of young viewers. The assistance of MCN organisations in this process cannot be ignored. Through cooperation with creators, they have delivered the traditional cultural content of Hunan to different groups in a more creative and attractive way. It not only brings traditional culture closer to modern audiences, but also attracts the attention of a large number of young viewers. At the same time, it can also accurately push relevant content through sentiment analysis and user profiling technology. This kind of personalised push based on data not only increases the exposure of traditional cultural content, but also makes cultural communication more targeted and broad. In addition, the digital exhibitions of Hunan Provincial Museum use digital forms of exhibitions to break the geographical constraints and make a breakthrough in the expression of Hunan culture on a global scale. It allows more audiences who are unable to come to the scene in person to deeply feel the artistic charm of Hunan culture. This innovative communication method adds new impetus to the international influence of traditional culture and highlights the unique value of Chinese outstanding traditional culture. It allows the global audience to experience the artistic charm of Hunan culture in an immersive way. This mode of communication enhances the international influence of culture and highlights the unique value of the excellent traditional Chinese culture.

CONCLUSION AND PROSPECT

Digital intelligence technology has enabled the transformation of the ancient music and dance culture of Hunan from 'archival preservation' to 'creative revitalisation'. At the same time, AIGC (Artificial Intelligence Generated Content) technology will open up a new dimension of cultural interpretation, restoring ancient music and dance forms such as Yunmen and Dashao,

which have been lost in the canonical books, by means of intelligent arranging and motion capture systems, so as to make the Digital Twin Theatre a testing ground for the innovative expression of traditional culture. Establish a genetic association map of Hunan culture, and use knowledge mapping technology to reveal the implicit associations between music and dance symbols and imagery of Chu Rhetoric and bronze ornaments, so as to provide semantic network support for cultural and creative IP development. At the dissemination level, an XR cultural touring platform based on spatial computing can be developed, combined with geo-big data to intelligently match the cognitive habits of overseas audiences, and realise the contextualised translation of cultural content.

Finally, it is necessary to establish a digital ethical assessment mechanism, so as to maintain the authenticity of culture in the application of technology and avoid the fragmentation of cultural symbols in algorithmic pushing. Through the establishment of a 'digital culture hub' ecosystem, a sustainable development model is formed in which cultural resources can be traced, creative achievements can be iterated, and communication effects can be quantified. By building a synergistic ecosystem of 'technology-culture-industry', Hunan culture will demonstrate its unique value in the process of global digital civilisation.

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