



Research on the Relationship Between Pre-Qin Chime-bell Culture and the Origins of Chinese Civilization

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Abstract

Background and Aims: Cantonese music, as a vital part of Lingnan culture, is facing challenges in inheritance and dissemination in the digital age. This study aims to explore effective digital communication paths for Cantonese music culture under the influence of new media, enhancing its public visibility and cultural impact. This study investigates the profound relationship between pre-Qin chime-bell culture and the origins, formation, and evolution of Chinese civilization. Addressing a gap in the current research on the "Chinese Civilization Exploration Project," the study emphasizes the cultural, artistic, and philosophical significance of chime-bell traditions from a multidisciplinary perspective, particularly through the lens of musicology and music archaeology.

Methodology: The research employs qualitative methods, including literature review, case analysis, and field investigation. It focuses on platforms such as short videos, livestreaming, and online communities to assess how Cantonese music is currently presented and received.

Results: New media platforms have significantly broadened the audience base for Cantonese music. However, problems such as a lack of content innovation, weak audience engagement, and insufficient localization strategies remain. Integrating digital tools with traditional culture can foster greater participation and appreciation. The study finds that pre-Qin chime-bell culture had a substantial impact on both the developmental stages and the defining characteristics of Chinese civilization. Specifically, it contributed to the civilization's continuity, innovation, unity, inclusiveness, and peaceful ethos. These influences are evident in the bells' cultural origins, ritual and musical functions, casting technologies, artistic achievements, and rich philosophical connotations such as "harmony without uniformity" and "unity of man and heaven."

Conclusion: To revitalize Cantonese music, it is essential to develop creative content, strengthen platform strategies, and promote youth involvement. A multi-dimensional communication model combining tradition and technology is key to sustainable cultural transmission.

Keywords: Digital Communication; Cultural Inheritance; Lingnan Culture; Pre-Qin Chime Bell





Introduction

Chinese civilization, which boasts more than 5,000 years of unbroken cultural development, is one of the world's oldest and most continuous civilizations. It is a multifaceted cultural tradition that encompasses the collective memory, aesthetic values, and intellectual heritage that have shaped the Chinese people's national identity and historical consciousness (Xinhua News Agency, 2022). It is one of the world's richest and most complex civilizations, not only in terms of duration, but also in terms of cultural richness and contributions to human history. As the spiritual foundation of modern Chinese society, Chinese civilization will continue to shape the world's understanding of East Asian culture in the future (Wang, 2023).

The Chinese government launched the Chinese Civilization Exploration Project in 2001 to better understand the source and inner logic of Chinese civilization. The Chinese Civilization Exploration Project, a large-scale interdisciplinary project that has reached its fifth stage, attempts to pinpoint the chronology, spatial logic, and unique characteristics of early Chinese civilization (Wang, 2023). To better comprehend the ancient Chinese cultural system, the Project currently spans the disciplines of archaeology, history, and anthropology. Despite its broad thematic scope, the project has paid insufficient attention to the artistic expression of early culture, particularly to the ritual and social value of ancient music.

Especially in its ritual and ceremonial context, music has played a major role in shaping early China's ethical order and cosmological imagination. Scholars have long recognized the primacy of music in ancient society as an instrument of statecraft, spiritual communication, and cultural identity (Cook, 1998; Stock, 1996). Pre-Qin chime-bell tradition, in particular, is a significant cultural tradition that represents a distinct fusion of technology, aesthetics, and ritual symbolism. The function of the pre-Qin chime-bell culture in the origin and consolidation of Chinese civilization, on the other hand, is underexamined in both the mainstream historical narrative and in national-level research.

This study aims to fill in this blank by studying how the pre-Qin chime-bell culture was related to the origin, formation, and unique characteristics of Chinese civilization. The research attempts to make a comprehensive and multidisciplinary analysis of the pre-Qin chime-bell culture by drawing on insights from musicology, archaeology, and historical inquiry to enhance the theoretical and methodological foundations of Chinese civilization research. In particular, this work demonstrates that chime-bell culture was not simply an artistic form, but also a symbolic and material representation of the civilizational values of harmony, continuity, and innovation.





Objective

The main research goal of this thesis is to analyze and explain the relationship between pre-Qin chime culture and the source of Chinese civilization, and to fill in the lack of relevant artistic dimension in the study of "the source of Chinese civilization". The main research objectives are as follows:

1. Study and analyze the knowledge of bell culture before the Qin Dynasty from various sources. Study and analyze the knowledge of bell culture before the Qin Dynasty from various sources.
2. Analyze the relationship between bell culture and the formation process of Chinese civilization in various dimensions (e.g., rituals, governance, music). Analyze the relationship between bell culture and the formation process of Chinese civilization in various dimensions (e.g., rituals, governance, music).
3. Show the role of bell culture in creating the "Chinese cultural identity," emphasizing the artistic and archaeological dimensions of music.

Literature Review

The Pre-Qin Chime-bell Culture as a Source for the Study of Chinese Civilization Origins

Examining the pre-Qin chime-bell culture is an essential way to approach the origins of Chinese civilization. Dating from as early as the Western Zhou and the zenith during the Spring and Autumn and Warring States periods, sets of bronze chime bells (bianzhong) were among the most advanced musical instruments of their time (Bagley, 2009). These instruments required high precision in metallurgy and acoustics, signaling early Chinese civilization's technological and artistic sophistication. The discovery of massive bell sets, including the Zenghouyi tomb bells found in 1978, highlights their dual role as musical devices and indicators of social status (Falkenhausen, 1993).

The cultural significance of chime bells extends beyond their technological aspects. In the Zhou ritual system, music was not merely an art form but intertwined with governance and morality, serving to harmonize human and cosmic orders (Cook, 1998). The tonal systems inscribed on the bells were not just for music but represented broader philosophical ideas of balance, resonance, and harmony—values crucial to the Confucian vision of societal order (Li, 2016). In this sense, the pre-Qin bell music was both an artistic expression and a medium of political authority and moral cultivation, suggesting that music was integral to early Chinese statecraft.





Chime-bell culture also highlights the interplay between material culture and ideological constructs in early China. The sheer resources needed to cast and maintain large bell sets imply centralized political power and a stratified society (Bagley, 2009). Simultaneously, their function in ancestor worship underscores the intersection of religion, politics, and art in early Chinese civilization (Falkenhausen, 1993). This duality illustrates how symbolic artifacts can encapsulate a civilization's core values—linking governance, spirituality, and technology into a cohesive cultural system.

The chime bells also exemplify China's early cultural innovation and transmission. As instruments that could produce two distinct pitches per bell, they reveal a unique acoustic theory different from Western harmonic traditions (So, 2000). Their use in court rituals and diplomatic practices indicates their role in projecting cultural authority over regions, contributing to a shared civilizational identity. Such functions of music as both a unifying force within early China and a diplomatic tool in regional exchanges are critical aspects of how cultural frameworks evolve.

In conclusion, the pre-Qin chime-bell culture offers a vital perspective for understanding Chinese civilization's origins. Through its technological mastery, ritual functions, and cosmological symbolism, the chime bells crystallized essential values such as harmony, hierarchy, and cultural continuity, which continue to underpin Chinese identity. However, their role has been underappreciated in the grand narrative of China's history, which often focuses on textual or archaeological evidence of political and economic structures. Integrating musicological perspectives more fully into civilizational studies can deepen our understanding of China's past and highlight the art's power to shape enduring cultural frameworks.



Conceptual framework

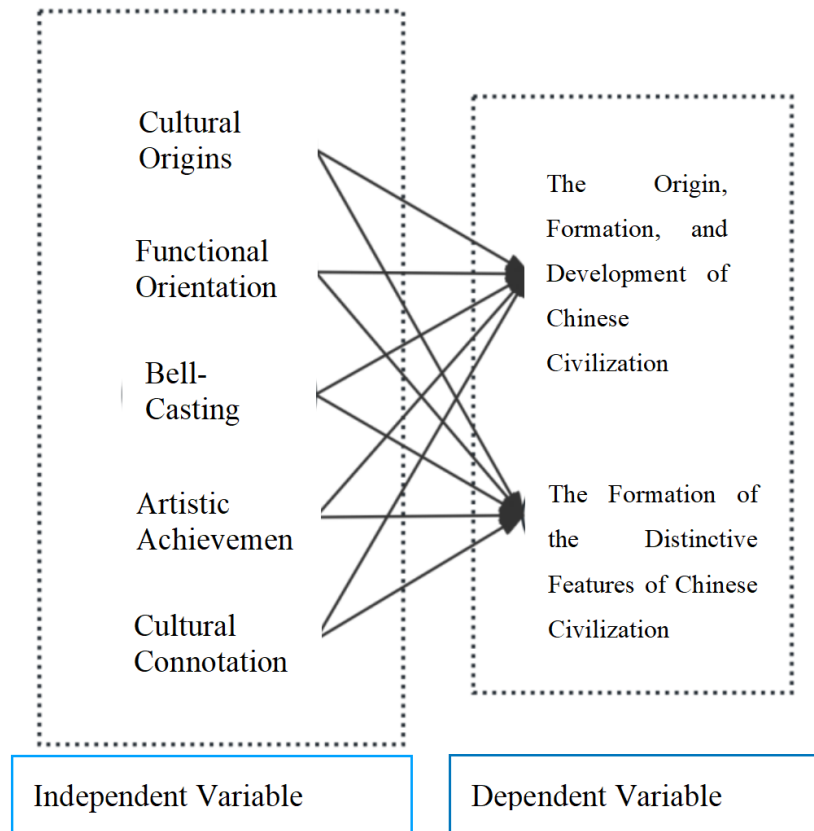


Figure 1 Conceptual framework

Methodology

The research object of this study is "the relationship between pre-Qin chime culture and Chinese civilization", which is mainly carried out qualitatively. The main research methods are as follows.

Literature research method: Literature research method mainly refers to the collection, identification, and sorting of literature, and through the study of literature to form a scientific understanding of the facts. The literature research method mainly carries out literature research on the pre-Qin chime culture and Chinese civilization exploration, to analyze and summarize the respective connotation and mutual relationship between the pre-Qin chime culture and Chinese civilization exploration.

Historical research method: Historical research method refers to the use of historical data, according to the order of historical development of the study of past events. The use of historical research methods can not only make the research conclusions more authentic but also give this



research a clearer and systematic time context, to obtain more objective, real, and orderly research results.

Interdisciplinary research method: Interdisciplinary research method, also known as interdisciplinary research method, refers to the use of multidisciplinary theories, methods and results, from the whole to conduct comprehensive research on a topic. By adopting the interdisciplinary research method, the knowledge of related disciplines can be applied from multiple angles and in all directions to conduct multidimensional and integrated research, thus ensuring the richness, integration, and novelty of the research results.

Results

The pre-Qin chime culture can be traced back to the late Yangshao culture (Wang Zichou, 2003) about 6000 years ago. It is not only closely related to the origin, formation, and development of Chinese civilization, but also closely and mutually reinforcing with the formation of prominent characteristics of Chinese civilization. As an important component and element of Chinese culture, pre-Qin chime culture has shown its strong vitality without fault or division in the development course of thousands of years. Although the pre-Qin chime culture weakened slightly after the Qin Dynasty, its overall evolution process can be described as endless, continuous, and long-standing. Even in the 21st century, we can still see, touch, and feel the existence of the pre-Qin chime culture.

As a part of the "root" of Chinese traditional culture, the pre-Qin chime culture not only revealed the basic mode of social operation and the basic picture of human life in the pre-Qin period, but also further explained and demonstrated the 5000 years of Chinese civilization history from the dimensions of art, especially musicology and music archaeology. The pre-Qin chime culture is the crystallization of the wisdom of the Chinese pre-Qin people, an important carrier of the Chinese pre-Qin civilization, and an important embodiment of the Chinese pre-Qin civilization. The "civilization elements" contained in it had a profound impact on the origin, formation, development, and formation of the prominent characteristics of the Chinese civilization.

Influence of pre-Qin chime culture on the origin, formation, and development of Chinese civilization. Pré-qin chime culture is an important component of Chinese excellent traditional culture, an important carrier of Chinese civilization, and a concentrated embodiment of Chinese civilization. It has a positive impact on the origin, formation, and development of Chinese civilization, which is mainly reflected in the following five aspects.

The cultural origin of pre-Qin chime bells has a positive impact on the origin, formation, and development of Chinese civilization. The cultural origins of pre-Qin chime bells can be described as pluralism and integration, with a long history and inclusiveness, which has a positive impact on





the origin, formation and development of Chinese civilization, mainly reflected in the following three dimensions: First, from the perspective of time, the origin, formation and development time of pre-Qin chime culture is highly similar to that of Chinese civilization, so its positive impact on Chinese civilization is in line with objective facts; Second, from the perspective of space, the origin, formation and development region of pre-Qin chime culture is highly consistent with the origin region of Chinese civilization, so its positive impact on Chinese civilization is also in line with objective facts; Third, from the perspective of origin elements, as an important ritual instrument in the pre-Qin period, it is both a ritual instrument and a musical instrument, which can both govern the country and appease the people, so its positive impact on the Chinese civilization is also in line with objective facts.

The function orientation of pre-Qin chime bells has a positive impact on the origin, formation, and development of Chinese civilization. The function orientation of pre-Qin chime bells can be described as pluralistic, inclusive, and distinctive, which has a positive impact on the origin, formation, and development of Chinese civilization, mainly embodied in the function of giving orders, sacrificial functions, ritual functions, entertainment functions, and educational functions. (1) Command function: the bell was used in the ancient battlefield in China for the "order" use; the bell is the command. The bell is also the ancient sorcerer king's tool for ordering, that is, the sorcerer king's issuing tool (Zhang Fa, 2016). (2) Sacrificial function: The pre-Qin ancestors concluded the relationship between man and God, man and man, and man and nature through the way of "connecting God with music", and realized the function of governing the country, governing people, and living in harmony with the environment to a certain extent. (3) Rites and music function: It has the function of maintaining order, fixing the country and Anbang, and the function of guiding culture and pacifying people. (4) Entertainment function: With the acceleration of "Li collapse and music deterioration" and the emergence of bell (the best musical performance of chime bells), the entertainment function of chime bells has become more prominent, and it has been freed from the attachment of Li and used for the entertainment of princes and nobles (Zhang Huiyong, 2004). (5) Educational function: the music of pre-Qin chime bells can enable students to get the emotional experience of Chinese national music, and the decoration of pre-chime bells can enable students to get the emotional experience of Chinese national decoration (Chen Chuanchuan, 2022).

Pre-Qin chime bell casting technology has a positive impact on the origin, formation, and development of Chinese civilization.

The bell casting technology of pre-Qin chime bells can be described as advanced, exquisite, and innovative, which has a positive impact on the development of Chinese civilization, mainly reflected in the smelting technology, bell casting technology, and acoustic technology. (1)





Smelting technology: from 4300 to 3900 years ago, the "composite mold casting" method was used to make the Tao Temple copper bell. The copper bell is diamond-shaped, small, but the tone is crisp and pleasant (Jiang Dingsui, 1995); "Zhou Li · Kao Gong Ji" shows that the bronze used to make chime bells has a ratio of six to one between copper and tin (Wang Zichu, 2012). (2) Bell casting process: China's pre-Qin period has been used in casting, parting casting, tin welding, brazing, engraving, inlaying, riveting, and investment bell casting processes. Some of these processes, even in the 21st century, are very advanced. (3) Acoustic technology: the "one bell with two tones" technique of pre-Qin chime bells not only realized one bell with two tones and damped delay, but also reduced the volume and weight of the complete set of chime bells and expanded the vocal range (Yan Yanlai et al., 2004); The "aftersound damping technology" of pre-Qin chime bells can make the sound decay faster and shorten the aftersound, thus improving the sound effect of the bells (Liu Chang, 2017); They not only occupy an important position in the history of Chinese music, but also have a unique existence in the history of world music.

The artistic achievements of pre-Qin chime bells have a positive impact on the origin, formation and development of Chinese civilization, the artistic achievements of Qin Chime Zhong are colorful, unique and profound, which have a positive impact on the development of Chinese civilization, mainly embodied in music art, calligraphy technology and decorative art. (1) Music art: The music art of pre-Qin chime bells had developed to a very high level in the Pre-Qin period, which not only produced the concept of interval and harmony, but also formed the theory of twelve tones and rotating palace modulation, and could also play music of five, six and seven tones (Liu Yutang & Zhang Shuo, 2011). (2) Calligraphy art: the inscriptions on pre-Qin chime bells are not only narrow and long, with regular lines, but also a tight structure and sharp strokes; It is an orthodox seal script, which gives people a sense of solemnness and solemnness when read (Tan Weisi, 2005). (3) Decorative art: Pre-Qin chime bells used round carving, relief, engraving, painting, and other decorative techniques; the patterns and patterns produced are not only exquisite but also beautiful and generous.

The cultural connotation of pre-Qin chime bells has a positive impact on the origin, formation, and development of Chinese civilization. The cultural connotation of pre-Qin chime bells can be described as broad and profound, unique and rich, which has a positive impact on the development of Chinese civilization, mainly embodied in the thought of heaven and man's unity, people-oriented, harmony without difference, and harmonious coexistence. (1) Thought of the unity of heaven and man: the characteristics of "one bell and two tones" of pre-Qin chime bells imply the inner spirit of "unity of heaven and man"; The spirit of "unity of heaven and man" contained in "one bell and two tones" is still shocking today in the 21st century, fully reflecting the thought of "unity of heaven and man" in the pre-Qin period (Yuan Xinmeng, 2023). (2) People-





oriented thought: After the Western Zhou Dynasty, the function of rites and music began to change in the direction of entertaining people, that is, from "rites" to "people", "to "music" to "rites", which fully reflects the "people-oriented" thought in the pre-Qin period (Jin Xueying, 2020). (3) Harmony without diversity: Each chime bell of pre-Qin Dynasty could not only sound two "three degrees" apart, but also did not interfere with each other and co-existed harmoniously, which fully reflected the thought of "harmony without diversity" in pre-Qin period; Pre-qin chime bells and Western symphony orchestras played together, and the cooperation between them seemed to complement each other, not only respecting and tolerating the differences between Chinese and Western cultures, but also showing vividly the cultural connotation of "harmony but diversity" of chime bells, fully reflecting the thought of "harmony but diversity" in the pre-Qin period (Yuan Xinmeng, 2023). (4) Harmonious symbiosis thought: the decoration of pre-Qin chime bells not only created a free, romantic, free and easy, elegant, unrestrained, natural, and harmonious artistic conception, but also included dragons, birds, beasts, people, plants, and other things in its decoration, fully reflecting the "harmonious symbiosis" thought of the pre-Qin period.

Influence of pre-Qin chime culture on the formation of prominent characteristics of Chinese civilization. Pre-Qin chime culture is an important component of Chinese excellent traditional culture, an important carrier of Chinese civilization, and a concentrated embodiment of Chinese civilization. It has a positive impact on the formation of prominent characteristics of Chinese civilization, which is mainly reflected in the following five aspects.

The cultural origins of pre-Qin chime bells have a positive impact on the formation of prominent characteristics of Chinese civilization. The cultural origin of pre-Qin chime bells can be described as pluralism and integration, with a long history and inclusiveness, which has a positive impact on the formation of prominent characteristics of Chinese civilization, mainly reflected in the continuity of cultural origin, inclusiveness, and unity of cultural origin. (1) Continuity of cultural origins: from the bells in the Yu Xia period, to the cymbals, big cymbals and Bobs in the Yin and Shang periods, to the Bo-Yongbell-Newish bell system in the Western Zhou period, and to the large-scale combined chime bells in the Spring and Autumn and Warring States periods (Wang Zichu, 2007), although it weakened slightly after the Qin and Han Dynasties, it continues to this day, fully reflecting the continuity of Chinese civilization. (2) Inclusiveness of cultural origin and flow: In the complex and long development process, the pre-Qin chime culture was cultivated through continuous inclusion of chime culture and civilization factors in various regions of China and finally developed into a ritual and music instrument that can "secure the state and appease the people", fully reflecting the inclusiveness of Chinese civilization. (3) Unity of cultural origin and flow: The development process of pre-Qin chime culture was complicated and long, but in





general, it developed in the direction of "pluralism to monism" and "dispersion to unity", fully reflecting the unity of Chinese civilization.

The functional orientation of pre-Qin chime bells has a positive influence on the formation of the prominent characteristics of Chinese civilization, the functions orientation of pre-Qin chime bells can be described as pluralistic, inclusive and distinctive, which has a positive impact on the formation of the prominent characteristics of Chinese civilization, mainly reflected in the unity of ritual and music function, the innovation of music suspension function, the innovation of double tone function and the inclusiveness of performance function. (1) The unity of rites and music function: Pre-Qin chime bells are the physical reaction of the rites and music system, which not only has the function of rites, but also has the function of music, which is the unity of "rites and music", and fully reflects the unity of Chinese civilization. (2) Innovation of the Lehang function: Based on the Lehang system with chime bells as the core, it restricts and prescribes people through the "placement of the chime Musical Instruments", giving the political connotation of the "Lehang system", and finally realizing the purpose of stable rule and governing the country, fully reflecting the innovation of Chinese civilization. (3) Innovation of double-tone function: the "one-bell double-tone" function not only greatly improved the performance of pre-Qin chime bells, but also saved half of the precious bronze materials at that time, and reduced the playing space and placement space of pre-Qin chime bells. It can be described as a great invention that can achieve three things with one stone, fully reflecting the innovation of Chinese civilization. (4) Inclusiveness of performance function: Pre-Qin chime bells can be solo, ensemble with other instruments, accompaniment to the choir, and even symphonic collaboration with the symphony orchestra. Its diverse performance forms and comprehensive performance functions fully reflect the inclusiveness of Chinese civilization.

Pre-Qin chime bell casting technology has a positive impact on the formation of prominent characteristics of Chinese civilization. The bell casting technology of pre-Qin chime bells can be described as advanced, exquisite, and innovative, which has a positive impact on the formation of prominent characteristics of Chinese civilization, mainly reflected in the innovation of smelting technology, the unity of sound temperament, the continuity of shape structure, and the innovation of the shape structure. (1) Innovation of smelting technology: The smelting technology of pre-Qin chime bells represents the highest achievement of pre-Qin bronze civilization. Its innovative smelting method and alloy ratio not only ensure the beautiful tone of chime bells but also ensure the toughness and firmness of the chime bell body, fully reflecting the innovation of Chinese civilization (Liu Sha, 2020). (2) The unity of sound rhythm: the sound of pre-Qin chime bells, the high register is crisp, the middle register is bright, and the low register is thick, fully embodies the orthostichy and uniformity of pre-Qin music culture, and fully embodies the unity





of Chinese civilization; In addition, the rhythm of pre-Qin chime bells has the characteristics of steadiness, stability and systematic Ness, which also reflects the unity of the rhythm of pre-Qin chime bells to some extent. (3) Continuity of vessel structure: The "tile-shaped" vessel structure of pre-Qin chime bells can be traced back to Tao Ling of the "rhomboid" section in the Yangshao Culture period, which has lasted for about 6,000 years, not only reflecting the longevity of Chinese civilization, but also reflecting the continuity of Chinese civilization. (4) Innovation of instrumental structure: the unique "combined tile" shape of pre-Qin chime bells is unique to China, and the phenomenon of "one bell with two tones" produced by it can be described as a miracle in the history of world music, fully reflecting the innovation of Chinese civilization.

The artistic achievements of pre-Qin chime bells have a positive impact on the formation of the prominent characteristics of Chinese civilization. The artistic achievements of pre-Qin chime bells can be described as colorful, original, and profound, which have a positive impact on the formation of outstanding characteristics of Chinese civilization, mainly reflected in the unity of artistic form, the innovation of musical instrument performance, the inclusiveness of musical instrument performance, the peace of musical style, and the innovation of musical theory. (1) The unity of art form: First, the pre-Qin chime bells are arranged on the bell stand from large to small, which has the characteristics of unity of layout, fully reflecting the unity of Chinese civilization; Second, the shape of pre-Qin chime bells adopts the symmetrical shape of Chinese style, which has the characteristics of symmetrical unity, and fully embodies the unity of Chinese civilization; Third, the eight tone tunnels of pre-Qin chime bells are symmetrically distributed in the two drums on the front and back walls (generally three drums on the front and back walls and one on the two mills) (Lei Mingyue, 2023), which has the characteristics of unity of design and fully reflects the unity of Chinese civilization. (2) Innovation of musical instrument performance: Pre-Qin chime bells double tone performance, melody performance, ensemble performance, and concert performance can be described as the first in the world, fully reflecting the innovation of Chinese civilization. (3) Inclusiveness of musical instrument performance: Pre-Qin chime bells can be integrated with Western symphony orchestras and children's choirs, and their cooperation appears to complement each other and is recognized by audiences around the world (Yuan Xinmeng, 2023), which fully reflects the inclusiveness of Chinese civilization. (4) Peaceful music style: the music style of pre-Qin chime bells is stable and dignified, mysterious and solemn, stable and balanced, relaxed and moderate, which is known as "the sound of neutralization", fully reflecting the peace of Chinese civilization; In addition, the music style of pre-Qin chime bells better shows the aesthetic thoughts of "middle sound" and "neutralization" in Chinese traditional culture, and fully embodies the peace of Chinese civilization. (5) The innovation of rhythm theory: The pre-Qin chime bells innovatively used pentatonic scale, six-tone





scale, seven-tone scale, twelve chromatic system, and other rhythm theories (Liu Yutang & Zhang Shuo, 2006), which fully reflected the innovation of Chinese civilization.

The cultural connotation of pre-Qin chime bells has a positive impact on the formation of prominent characteristics of Chinese civilization. The cultural connotation of Qin Chime Bells can be described as broad and profound, unique and rich, which has a positive impact on the formation of the prominent characteristics of Chinese civilization, mainly reflected in the peace of political ideas, the peace of double tone ideas, the inclusiveness of double tone principles, the continuity of cultural matrix, the unity of cultural matrix and the inclusiveness of musical culture. (1) Peace of political concept: The pre-Qin chime culture is not only a representative of ritual and music culture, but also a symbol of the ancient Chinese music concept of "harmony", highlighting the political concept of harmony, cooperation, and win-win (Hu Yihua & Le Dai, 2018), which fully reflects the peace of Chinese civilization. (2) Peace of double tone concept: The design concept of "one bell with double tone" in pre-Qin chime bells not only symbolizes the philosophical concept of "harmony without diversity", but also symbolizes harmony and peace (Wei Minmin, 2021), which fully reflects the peace of Chinese civilization. (3) Inclusiveness of double tone principle: the sound principle of "one bell double tone" of pre-Qin chime bells can play two musical tones of "unity but difference", which fully reflects the inclusiveness of Chinese civilization. (4) The continuity of the cultural matrix: from the red copper bells unearthed at the site of Tao Temple in Shanxi, to the cultural sites of the Shang and Zhou dynasties, such as Yanshi Erlitou Site in Henan, Dadunzi site in Anhui, Guanghan Sanxingdui Site in Sichuan, many bronze bells have been unearthed. These bronze bells are closely related in form and function, which fully reflects the continuity of Chinese civilization. (5) Unity of cultural matrix: the pre-Qin chime culture changed from "pluralism" to "monism", from "dispersion" to "convergence", and from "convergence" to "accumulation", fully reflecting the unity of Chinese civilization. (6) Inclusiveness of music culture: The music culture contained in pre-Qin chime bells, inclusive in development, developed in inclusiveness, experienced nearly 6,000 years of inclusiveness, and eventually became an important model of Chinese music civilization, fully reflecting the inclusiveness of Chinese civilization.

Discussion

Grounded in the research framework of Chinese Civilization Exploration Project, based on the chime-bell culture as a new research object, and taking the connection between pre-Qin music and the exploration of Chinese civilization as a research focus, this study was conducted from the perspective of art history, musicology and music archaeology, and combined with the preliminary research on the origin and development of pre-Qin chime-bell, and music origin. The





overall approach of the study is interdisciplinary, and its main contribution is to enrich the theoretical system of pre-Qin chime-bell research by adding new angles and dimensions to the research on the origin of Chinese civilization (Wang, 2023), and to try to change the previous neglect of the artistic dimensions of civilization.

The first part of this study focuses on the evolution, origin, and civilizational elements of pre-Qin chime-bell culture. This study is based on the previous archaeological and historical research (Falkenhausen, 1993; Bagley, 2009) and places the cultural research of bells in the historical context of the origin of Chinese civilization. This study attempts to highlight the civilizational characteristics of chime-bell culture from the perspective of musicology and music archaeology. On the one hand, from the research on ritual sound, aesthetic form, and acoustic innovation, the study of the origin of Chinese civilization has been supplemented in some new directions. On the other hand, from the rational perspective of chime-bell music research, the original basic theoretical system is supplemented and reinforced in some aspects.

The second part of this study is the demonstration of the relationship between chime-bell culture and the origin, formation, and development of Chinese civilization. This study is focused on the origin, function, bell-making technology, art, and symbol of bells, and analyzes and proves that the ritual, music, symbolism, and technique of chime-bell culture all reflect the characteristics of Chinese civilization at an early stage. (Cook, 1998; Li, 2016).

The third part of this study interprets the embodiment of the excellent characteristics of Chinese civilization in pre-Qin chime-bell culture. The main features of chime-bell culture that show the characteristics of Chinese civilization at an early stage include its ritual origin, technological innovation, symbolic significance, and aesthetic achievement (So, 2000). From the research on these aspects, it can be concluded that the chime-bell culture is a good example to demonstrate the characteristics of Chinese civilization.

In conclusion, this study proves that the research on pre-Qin chime-bell culture is not only an artistic and musicological supplement to the Chinese Civilization Exploration Project, but also a theoretical exploration of how the formation of material culture and musical practice promotes the formation of the excellent characteristics of Chinese civilization.

Conclusion

This study explored the relationship between pre-Qin chime-bell culture and the origin, formation, and defining characteristics of Chinese civilization. Drawing upon literature analysis, historical comparison, and interdisciplinary synthesis, the research demonstrated that chime-bell culture was not merely a musical practice but a symbolic carrier of civilizational values, deeply embedded in ritual, politics, aesthetics, and philosophy.





The findings reveal that pre-Qin chime culture played a foundational and integrative role in shaping early Chinese civilization. It contributed to core civilizational traits such as continuity, innovation, unity, inclusiveness, and peacefulness. Through its sophisticated casting technology, symbolic ritual functions, and philosophical underpinnings, chime-bell culture reflects the intellectual depth and cultural coherence of the Chinese nation across millennia.

Academically, this study broadens the scope of the Chinese Civilization Exploration Project by incorporating perspectives from musicology and symbolic anthropology. It provides a new interpretive lens for understanding ancient cultural artifacts beyond their physical and musical properties. Socially, the study enhances public awareness of traditional culture and supports heritage preservation efforts. The symbolic, aesthetic, and ethical values embodied in chime-bell culture may also inform cultural education, museum curation, and digital heritage initiatives, offering a tangible connection between the past and the present.

Recommendations

To expand upon the current findings and address existing limitations in scope and disciplinary depth, future research on pre-Qin chime-bell culture is encouraged to advance in the following directions:

1. Period-Specific and Contextualized Studies

Future research should focus on specific historical periods, such as the Western Zhou or Spring and Autumn periods, by examining chime-bell sets unearthed from key archaeological sites like Marquis Yi of Zeng's tomb, Yin Ruins, or Erlitou. Employing contextual musical analysis, ritual reconstruction, and comparative material culture analysis will allow scholars to trace region-specific innovations and their correlation with the political and philosophical thought of the time.

2. Digital Reconstruction and Simulation

Interdisciplinary collaboration should be expanded, especially by incorporating information science, virtual reality (VR), and acoustic simulation. For instance: Develop virtual simulations of ancient ceremonial performances based on excavated bell arrangements and their acoustic properties. Use 3D modeling and digital twin technology to reconstruct lost instruments and recreate their sound through AI-based tone synthesis. Establish an open-access digital sound archive of authentic pre-Qin chime tones using modern digital recording and tuning technology, forming a scholarly "Ancient Sound Library".

3. Educational Integration and Public Engagement

Efforts should also be made to embed the knowledge of pre-Qin chime-bell culture into national music education curricula, especially in secondary and tertiary institutions. Suggested approaches include designing modular curriculum units on ritual music and chime bell history.





Collaborating with museums and cultural institutions to create interactive exhibits and augmented reality (AR) experiences for public learning. Encouraging community-based music archaeology projects that allow students to engage with reconstructed instruments and cultural narratives.

4. Policy and Cultural Preservation Initiatives

On a broader level, researchers and cultural policymakers should advocate for Official recognition of chime-bell craftsmanship and ritual music as intangible cultural heritage at the national and international levels (e.g., UNESCO). Funding and support for archaeoacoustic research centers specializing in ancient Chinese music. Institutional partnerships to preserve, digitize, and disseminate materials related to chime culture both domestically and globally.

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