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UNIVERSITY OF CALIFORNIA

Los Angeles

Music and Political Authority in Early China and Japan:

Pre- and Protohistory

A dissertation submitted in partial satisfaction

of the requirements for the degree

Doctor of Philosophy in Archaeology

by

Kirie P. Stromberg

2023

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## ABSTRACT OF THE DISSERTATION

Music and Political Authority in Early China and Japan:

Pre- and Protohistory

by

Kirie P. Stromberg

Doctor of Philosophy in Archaeology

University of California, Los Angeles, 2023

Professor Lothar von Falkenhausen, Chair

This dissertation traces the foundations of East Asian music in the archaeological record, presenting a macroscopic survey of excavated musical instruments from Jiahu through the Taosi cultures in China (ca. 7000–1800 BC) and from the second half of the Late Jōmon through the Kofun period in Japan (ca. 1500 BC–600 AD). Primary sources of knowledge are the instruments themselves, as well as some depictions of musicians in the Japanese case. The musical material culture of such early periods tends to reflect the music of the elite, often preserved under special circumstances (such as tombs or intentional burials) or made from materials (such as bone, then bronze) likely prized in part for their durability.

I organize chapters based on the materials from which instruments were made, a choice that evokes the organological framework of the *ba yin* (“eight sonorous substances”) from Late Warring States and early imperial texts (Chapter 1). Curiously bone, not one of the sonorous

substances, is central to the musical mortuary assemblages of the Chinese Neolithic across cultures of both the Yellow and Yangzi river valleys but was no longer used to make instruments thereafter (Chapter 2). This is likely because by the Longshan period (ca. 2300–1800 BC), ensembles consisting of stone chimes as well as alligator-skin and pottery drums had already become closely associated with authority at the major proto-urban center of Taosi (Chapter 3). Similarly, bronze dōtaku bells enabled social cohesion across groups during the middle Yayoi of Western Japan (ca. 200 BC, Chapter 4), although dōtaku production ended after the Yayoi. Zithers became definitive of elite culture by the beginning of the Kofun period (ca. 300 AD, Chapter 5). Juxtaposing the musical material culture of China and Japan at parallel stages of social development allows for the preliminary observation of three flexible phases in the relationship between music and the formation of East Asian society: I. Physio-musical phase, II. Visio-musical/spectacle phase, and III. Performer-audience phase (Chapter 6, Conclusions). This framework suggests that anthropological questions fundamental to the archaeology of human prehistory can be integrated productively with the study of ancient music.

This dissertation of Kirie P. Stromberg is approved.

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University of California, Los Angeles

2023

In memory of my grandmother, Jiang Zhimin 江之敏

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## Introduction

Prehistoric music archaeology requires recognition and interpretation of motifs in the material record, but it is not a science. Due to both the ephemerality of music and the fragmented nature of the prehistoric record, all studies of such early episodes in humanity's systematization of sound should acknowledge the necessity of creativity from the outset. That said, as we study excavated instruments, depictions of musicians, and other pre-textual sources of knowledge about ancient music within a framework established by the archaeological sciences and social sciences, researching the music of prehistory is more like – to borrow a metaphor from Western opera history – composing music based on a libretto than it is writing a symphony. W.H. Auden believed that the words of a libretto, traditionally conceived by a librettist before a composer writes the music, should serve to inspire the score, that “the verses which the librettist writes are not addressed to the public but are really a private letter to the composer. They have their moment of glory, the moment in which they suggest to him a certain melody; when that is over, [...] they must efface themselves” (1948, 473). In other words, narrative enables song, the structural supporting the ineffable. Although music archaeologists would never dare suggest that social theorists or stable isotopes efface themselves, it seems reasonable to propose that narratives of the archaeological sciences and social sciences should serve as frameworks for, rather than restricting the aims of, the archaeological humanities in the study of prehistoric music.

This is a dissertation about musical instruments, but it is more importantly an attempt to hear echoes of the humanity of the cultures of East Asian prehistory. I challenge misconceptions that prehistoric music consists of primal emotional expression before the advent of writing, which, in the Chinese case, appears on oracle bones (ca. 1250 BC) many millennia after the first

bone musical instruments appear in Neolithic Jiahu tombs (ca. 7000 BC). Fortunately, the concept of the *ba yin* (the “eight sonorous substances” or “eight timbres”) present in Chinese texts from the late first millennium BC forward provides a material lens through which to reflect on the musical instruments and perhaps even musical thought of much earlier episodes in East Asian prehistory (as will be explained in detail in Chapter 1). Using a late Bronze Age concept to organize Chinese materials millennia removed in time, not to mention instruments of pre- and protohistoric Japanese civilization geographically separated by the Korean Peninsula and its cultures, is a choice that will likely raise a few historiographic eyebrows. If the goals of the present account were purely social-scientific, evoking a conceptual framework from later texts would be unnecessary. Lothar von Falkenhausen has demonstrated that in the historical context of Late Bronze Age China, the fundamentals of social organization can be successfully reconstructed based on excavated data alone (2006). As my aim is not to discuss social organization itself but the relationship of social organization to musical poetics – “poetics” (*poieo*: to make, to produce, to create) in the most literal sense, as the physical, material, embodied making of music – an additional interpretive layer proves necessary. The theoretical stratigraphy of this experiment in the archaeological humanities therefore consists of excavated data at the bottom, followed by core concepts of the archaeological social sciences, encompassed by an organizing principle of Chinese musical thought. I will emphasize here and elsewhere that I have chosen this structure not because I think eight distinct categories of musical instruments made from eight types of materials existed in all or even any of the cultures discussed, but because it provides an apt framework through which to approach the data that may also reveal some overarching trends in the development of musical traditions across East Asia.

This dissertation is also non-traditional in that it is comparative, covering cultures from both Chinese and Japanese prehistory. Although this choice was initially necessitated by historical circumstance,<sup>1</sup> the expansion of the project from one to two culture areas has allowed for a clearer picture of the formation processes of musical traditions alongside social complexity in both contexts, shifting the goal away from granularity to the identification of trends. In other words, I do not present a comprehensive analysis of the prehistoric musical record of either China or Japan. Most of the musical material record of East Asian prehistory (what I suspect was a high proportion of bamboo instruments, for example) does not survive, and it would be misleading to present any account as comprehensive. What remains of elite musical instruments was often interred under special, protected circumstances, and as a result, an emergent theme is also the formation of complex society.

When K.C. Chang<sup>2</sup> outlined China's unique "path to political authority," he did so from a comparative perspective, pointing out both China's distinctiveness vis-à-vis the rise of Western civilization and similarities to Mesoamerica (1983; 1984). His claims about the nature of the development of Chinese civilization were formed with the intention of creating a basis for cross-cultural dialogue. With that in mind, by juxtaposing the earliest known musical instruments of

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<sup>1</sup> On July 14, 2020, as the COVID-19 pandemic spread across the world, Trump issued an Executive Order titled "The President's Executive Order on Hong Kong Normalization" (EO 13936) halting the Fulbright program in China and Hong Kong. Alongside the Hong Kong Autonomy Act (HR 7440) signed into law on the same day, this Executive Order was a response to the Law of the People's Republic of China on Safeguarding National Security in the Hong Kong Administrative Region (the National Security Law), which outlined China's increased jurisdiction over Hong Kong. All those who had received either the State Department Fulbright fellowship or the Department of Education Fulbright-Hays fellowship for research in China or Hong Kong were given "the option of reassignment to an alternate host country" or to forfeit the award. Many fellows chose to adjust their research plans for Taiwan, but, I chose Japan and waited for two years until pandemic border restrictions loosened. During those years, many Fulbright China fellows waited in hopes that the Biden administration would overturn EO 13936. It is still in effect.

<sup>2</sup> K.C. Chang (1931-2001) was one of the earliest scholars to introduce Chinese archaeology to western audiences. For a summary of his life and achievements, see the obituary written by Robert Murowchick, Lothar von Falkenhausen, and Cheng-hwa Tsang (Murowchick, von Falkenhausen, and Tsang 2003).

China and Japan I show that patterns emerge – patterns that, I hope, prehistorians might find useful, and that all those who love music might find beautiful.

## Chapter 1: Before the *Ba Yin*

### Introduction

The archaeological record of East Asian prehistory reveals that music played an important role in the formation of complex society in both China and Japan. This may be true across other cultures of the world as well,<sup>3</sup> although the systematic inclusion of musical instruments in tombs from the Neolithic through the Bronze Age appears to be a unique feature of early Chinese cultures. Musical instruments are never found in early Japanese tombs, but those that have been discovered in other pre- and protohistoric contexts throughout the archipelago are both remarkable and under-reported outside of Japan. Because of the absence of figural depictions of musicians before the late Bronze Age, excavated musical instruments are the main extant sources of knowledge about musical traditions in these early periods in East Asia.

Because I mainly address musical instruments, this dissertation can be considered a study in music archaeology. However, unlike most traditional music archaeological research, I spend little time on organology (i.e., the classification of musical instruments) and instead prioritize reconstruction of shifts in embodied musical performance reflected by the forms of and contextual details about excavated instruments. In doing so, I juxtapose the archaeology of ancient music and narratives about the origins of human civilization, with an eye towards isolating what might be cross-culturally applicable. I do not directly discuss the transmission of traditions from China to Japan through the cultures of the Korean Peninsula – although I suspect

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<sup>3</sup> For an account of the origins of music with cross-cultural implications, see Morley 2013.

many of the findings here could be enriched by observations from our colleagues in Korean archaeology, who I hope will not hesitate to “chime in” in the future.

Few would disagree with Giorgio Buccellati that the uniqueness of archaeology as a discipline lies in both (1) the irreproducibility of experiments, since something can only be excavated once, and (2) in the case of prehistory, the challenge of recovering “broken traditions,” or traditions for which archaeologists cannot either access contemporary documentation or a living human displaying native competence (2017). Reconstruction of ephemeral cultural practices such as music and dance before the reorientation of the human relationship with sound brought on by audiovisual recording technologies (Sterne 2003) presents an additional set of concerns: first, what special considerations should be made in analyzing an act that left no material traces? At least one answer is that we must rely even more heavily on ethnographic analogy than we would normally. Second, do musical traditions “break” in the same way others do? Some music archaeologists, such as Wang Zichu, would go so far as to argue for continuity in musical practice over millennia:

An old folksong can be passed down generation after generation for several thousands of years. From its basic tune to the more complex layers of its temperamental structure, from its inherent mode and tonality to its melodic form and style and beyond, a song can long remain essentially unchanged once composed. This astonishing level of stability characteristic of the musical arts, brought forth by the highest levels of human creative thought, might seem to make material, physical art objects pale in comparison. One could say that in the process of constructing the grand scholarly hall of the history of mankind, music archaeology and archaeology have each been making their unique contributions. (2003, 25)

Whether or not one agrees with Wang, an archaeology of music that seeks to go beyond description of musical instruments alone requires a unique set of methods. I do not necessarily believe that the musical material culture of East Asian pre- and protohistory reflects an



“astonishing level of stability,” but it does reveal some astonishingly recurrent motifs. I lay the groundwork to describe these motifs below.

## Interlude

From September 20<sup>th</sup> to 23<sup>rd</sup> of 2019, an international conference was held in the city of Shenmu in the northeastern reaches of Shaanxi province, situated in a transitional zone between China’s loess plateau to the south and the vast Ordos steppe to the north. The main industries of the region are coal and oil, which have brought some economic prosperity to an otherwise marginal part of the country. The bracing cold of late fall winds and steaming, mildly alcoholic rice porridge served at the hotel breakfast intimated a culture of harsh winters, contrasting the bright bouquets and red banners adorning the auditorium. The conference, titled “International Research Symposium on New Archaeological Discoveries from the Shimao Palatial Terrace and Jaw Harps” (*Shimao Huangchengtai kaogu xinfaxian ji kouhuang guoji yantaohui*), was no doubt the most cosmopolitan event ever held in the city, with hundreds of invited scholars, musicians, and journalists invited from across the world, as well as local officials and members of the public in attendance (fig. 1). Archaeologists presented on a variety of issues concerning Shimao, a massive stone walled site nearby enclosing a total area of over 4km<sup>2</sup>, a hub of political and economic activity during the late Longshan period (ca. 2000 BC). The main event, however, was celebration of 23 small, bone musical instruments discovered there.



**Figure 1: Archaeologists in attendance at the “International Research Symposium on New Archaeological Discoveries from the Shimao Palatial Terrace and Jaw Harps” in Shenmu, Shaanxi**  
(author is in the back row, third from the left)

Jaw harps (*kouxianqin* 口弦琴 or *kouhuang* 口簧 in Chinese, *mukkuri* ムックリ from the Ainu in Japanese), also called “Jew’s harps” in English, are a common instrument across the folk music traditions of the modern world, emitting a rhythmic, EDM-like hum when played by a skilled musician who manipulates the mouth to form a resonance chamber. Twenty-one of the Shimao bone jaw harps, each about 8-9 cm in length, were found along with other bone objects and debitage along the eastern support walls of the palatial terrace, likely the discard pile of a production center; two more were excavated to the north of the gate of what has been interpreted as the site’s palatial terrace (Z. Sun 2020). On the second day of the conference, an evening of performances by musicians hailing from across China and as far away as Finland was held in the instruments’ honor, complete with dance interludes and speeches from local politicians. Such pomp and circumstance likely had something to do with the fact that Shimao was then

contending for UNESCO World Heritage site status. Unfortunately for Shaanxi province, that year Shimao would lose its place to Liangzhu, a slightly earlier Neolithic center (ca. 3000 BC) in the coastal region of Zhejiang, the jades of which are emblematic of the birth of Chinese visual culture.

To attendees, it was immediately evident that ancient musical instruments have a part to play in the story of a modern, globalized China as it presents itself to the world. What the Shimao jaw harps and other musical instruments once represented to the people who created them, on the other hand, has yet to be fully understood. Their discovery is important not just because they are the oldest surviving examples of the instrument in the world, but for the purposes of this dissertation, because they are an example of a category of musical instrument not recognized in the East Asian material record until recently, omitted from classic accounts of Chinese music archaeology (C. Li 1996; Z. Wang 2006). Shimao lies within the modern borders of the People's Republic of China and yet is distinct from the classically Chinese sites of the central plains – a major urban node in the Northern Zone, a region now seen as an arena of cultural transmission (Jaang et al. 2018) along a steppe network that eventually reached through the Korean peninsula and into the Japanese archipelago.

In sum, the Shimao jaw harps do not fit neatly into narratives of East Asian music archaeology or history. As I aim to show in the chapters that follow, they are also not outliers; they represent one example of excavated musical instruments echoing the diversity of sound that existed at the dawn of East Asian civilization. The origin story of East Asian music begins in China but travels far beyond it, and therefore this dissertation will do so as well, untangling the origins of music in China and Japan from a comparative perspective.

## Framework I: Music Archeology and Ethnomusicology (vs. Archaeoacoustics)

The chronological scope of materials discussed ranges from the date of the earliest excavated objects interpreted as musical instruments in East Asia to the advent of local historical records (until ca. 1250 BC in China, and ca. 700 AD in Japan). This “cutoff point” is useful for methodological reasons. The absence of text in the prehistoric periods I discuss implies the necessity of theoretical bolstering through ethnographic analogy – particularly since my goal is not to reconstruct musical theory, scales, or acoustic environments, which proves nearly impossible to do responsibly in most prehistoric contexts. In Japan, Kofun period (ca. 300–600) *haniwa* musician figurines help illustrate how some instruments may have been played (Chapter 5), and towards the end of the third century, Jin dynasty historian Chen Shou (233–297) writes that the Wa people of the mountainous islands amidst the ocean sang and danced at funerals – but that is unfortunately all he had to say on Japanese music.<sup>4</sup>

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<sup>4</sup> See the first volume of compiled official Chinese historical accounts of Japan edited by Ishihara Michihiro (1985, revised ed). The information described above comes from a section on the *Weizhi* 魏志 section of the *Sanguozhi* 三國志 (Records of the Three Kingdoms: Records of Wei) summarizing the funerary customs of the people of Japan: “When a person dies, they prepare a single coffin, without an outer one. They cover the graves with earth to make a mound. When death occurs, mourning is observed for more than ten days, during which period they do not eat meat. The head mourners wail and lament, while friends sing, dance and drink liquor. When the funeral is over, all members of the family go into the water to cleanse themselves in a bath of purification” (trans. Tsunoda 1951, 6). It perhaps says as much about Chinese musical practices as it does about Japanese ones that Chen Shou sees it fit to highlight music in the context of funerary ritual. Later, the *Suishu* (compiled by Wei Zheng, 629-636) reveals that an envoy sent by the King of Wa to China during the Kaihuang era (581-600), equivalent to the very end of the Kofun period, related that Japanese “music consists of the five string (zither?), zithers, and flutes” (樂有五弦琴笛). Tsunoda translates this as “five-stringed lyres and flutes,” but considering the fact that in *Nanman* (“southern barbarians”) section of the *Suishu*, the *wuxian* also appears in a list of instruments without the character *qin* afterwards (樂有琴笛琵琶五絃，頗與中國同), and Mesopotamian style “lyres” probably had not yet reached Japan from across the steppe at this point, the term more likely refers to a five-stringed zither that was not considered a *qin* (see *Suishu* 82.47) – one of a diversity of early Japanese zithers that the material record of early Japan has yielded, as discussed in Chapter 5.

A wealth of musicological information can be gleaned from suspended instruments and other components of the ritual orchestra found in Zhou assemblages, especially from the 5<sup>th</sup> century BC forward (Rossing et al. 1988; von Falkenhausen 1988; 1993b). However, it is also now clear that many components of these late Bronze Age traditions once held to be quintessentially Chinese, from *qin* zither iconography to overarching musico-cosmological schema, were likely derived from non-indigenous traditions that came from across the Eurasian steppe (Lawergren 2003b; De Rose 2021). Some aspects of the musical thought and practice of Chinese prehistory likely lingered on, exerting influence on later traditions in both China and Japan. This may be especially true of the *materiality* of instruments. But the formation of East Asian musical traditions does not reveal a simple teleology; the ritual orchestra of the Shang and Zhou did not evolve directly from what existed locally in prehistory, nor were the fundamentals of Zhou musical ideas imported to Japan until about a millennium after the Warring States.

Finding a word to describe archaeological approaches to a non-material phenomenon is predictably challenging, and various terms that have been used reflect significant methodological differences. “Music archaeology” and “archaeomusicology” generally describe close interpretation of the forms of instruments themselves, or interdisciplinary study also involving art historical and philological research (see Hickmann 2011). Currently, popular archaeological methods of analyzing ancient music fall under the umbrella term “archaeoacoustics,” or what has come to include (1) reconstruction of the acoustics of natural and built environments (often but not exclusively used for musical activity), and (2) measuring pitches produced by ancient musical instruments (see Kolar 2018).

Lya Dams first pointed out the presence of natural stalactite lithophones or what she calls “organs,” often decorated, in Paleolithic cave sites throughout Western Europe. She includes

some pitch measurements and addresses iconographic evidence (1984; 1985). Acoustician David Lubman pioneered a more explicitly acoustical approach in his study of the Mayan pyramid Chichén Itzá. He suggests that the external acoustic features of the pyramid's architecture were intentionally designed to create a "chirped echo," imitating the call of the sacred bird, the "resplendent quetzal" (1998). Archaeoacoustical studies through the early 2000s are summarized by Paul Devereux; he points towards psychoacoustics as a major subset of the field (2006). Psychoacoustic analyses have negotiated lack of textual or iconographic support through gauging modern human responses to acoustic phenomena, inferring how humans may have also reacted to those phenomena in the past. Rupert Till's research on the acoustics of Stonehenge, for example, has led him to conclude that Stonehenge was a center of ritual music, as the acoustics of the space best suit amplified, participative, rhythmic activity; in his opinion, this was conducive to rituals involving trance-like states, and specific frequencies produced by the environment may have assisted participants in achieving altered states of consciousness (2009; 2014; 2019). Ian Cook of UCLA's Brain Research Institute and others have explored the use of EEG monitoring to assess the power that ancient acoustic spaces might have had to manipulate the human brain (Cook, Pajot, and Leuchter 2008; Debertolis and Gullà 2014). Miriam Kolar and collaborators reveal details about the acoustics of engraved, playable *pututus* (shell horn wind instruments made from *Strombus galeatus*), excavated and then used to test the acoustics of the Andean Formative Period ceremonial center at Chavin de Huantar in Peru (ca. 1200–500 BC). She provides suggestions of not only how the instruments would have been played, but also how their sounds may have been perceived (Kolar et al. 2012). Steve Mills engages related ideas in a book-length treatment, focusing on the Teleorman River Valley in Romania, Çatalhöyük in Turkey, and West Penwith, in the UK, highlighting the importance of musical and sensory

dimensions of the human-animal relationship (2014). A discussion of the acoustics of a non-bounded sonic space that also incorporates visual evidence is Nicole Boivin's study of dolerite boulders at Kupgal, which emit tones when struck in particular places, indicated by impressions on the rocks (2003). In my opinion, research on ancient architectural acoustics tends to be most convincing in historical periods when conducted within bounded, constructed spaces where there is evidence of past musical performance, such as mosques and cathedrals (Ergin 2008; Howard and Moretti 2009; Pentcheva 2011; Antonopoulos et al. 2017). Some realities of perception may be cross-cultural or even biological, but the more contemporaneous texts and other sources of information about mental frameworks of members of the culture in question to which the archaeoacoustician has access, the higher the chance that analogies made to modern perception will not be off base.

An indigenous East Asian tradition of musical instrument analysis less concerned with phenomenological or cognitive factors was established long before the development of "archaeoacoustics" as a field. Beginning with musicologist Tanabe Hisao (1883-1983), Japanese and Chinese scholars had been taking pitch measurements of bronze bells, stone chimes, and some other instruments since the 1920s, with most studies published since the later 1970s.<sup>5</sup> In recent years, international collaboration enabled by ISGMA (the International Study Group on Music Archaeology)<sup>6</sup> has helped close the gap between regional approaches, and some East Asian scholars researching excavated instruments have started using "archaeoacoustics" to

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<sup>5</sup> For a detailed account of the early history of pitch measurement approaches in China and Japan through the late 1980s and the contributions of such scholars as Tanabe Hisao, Yang Yinliu, Li Chunyi, Huang Xiangpeng, see von Falkenhausen 1988, 721-728.

<sup>6</sup> Formerly the ICTM (International Council for Traditional Music) Study Group on Music Archaeology. Publications from ISGMA include the "Studien zur Musikarchäologie" series (1996-2020) and the recently established Journal of Music Archaeology (2021).

describe their own work. The term has been translated as *kaogushengxue* 考古声学 in Chinese, *onkyō kōkogaku* 音響考古学 in Japanese (Arayama 2011; Z. Wang and Yang 2023; X. Fang 2019; 2022). Pitch measurements of China’s earliest surviving musical instruments, the Jiahu bone flutes (ca. 7000 BC), have received some attention in international publications (J. Zhang et al. 1999; J. Zhang, Xiao, and Lee 2004). However, simple wind instruments such as bone flutes and pottery ocarinas yield unreliable measurements due of the variable nature of musicians’ embouchures and techniques. Instruments that date to the periods discussed here, even bells and chimes, are not particularly suitable for archaeoacoustic analysis. The earliest known Chinese bronze bells and stone chimes (ca. 2000 BC) were found singly (Chapter 3). Measuring their sounds may yield disparate quantitative data, but as it stands, no means of effectively coordinating that information into conclusions about musical systems has been proposed. Japanese Yayoi period bronze bells are sometimes found in sets (from the middle through late Yayoi, ca. 200 BC–250AD), but these sets were not created with any melodic intention.

### Ethnoarchaeology and Sound

Unfortunately, the melodic structures of the musics of East Asian cultures that existed before the late Bronze Age are not likely recoverable, based on what remains in the material record as it stands. That said, melody is far from the only important component of music, and ethnographic analogs that can help elucidate what does remain in the material record can be found. Those who wish to “hear” something of the array of now-lost musical instruments and practices of Neolithic and Early Bronze Age East Asian cultures should seek inspiration not in pitch measurements, but in the fieldwork of colleagues in ethnomusicology working in diverse



global contexts. Calls for an ethnoarchaeological approach to ancient music have been made periodically since the founding of the ICTM's Study Group on Music Archaeology (see Schneider 1986).<sup>7</sup> As Arnd Adje Both writes, “the ethnoarchaeological approach may represent a bridge between music archaeology and ethnomusicology, but little experience has been gained so far in exploring the existing intersect” (2009, 6). Fortunately, exploring this intersect through existing ethnomusicological archives and online resources becomes ever-easier. One example of an accessible archive is the work of Palmer Keen and the Aural Archipelago project, a free online repository of traditions including vocal music, bamboo instruments, and wood instruments from across the Indonesian archipelago (2023). Listening to even one of Keen's recordings hints that a wide variety of instruments made of wood, bamboo, and other perishable materials were likely integral to the soundscapes of regions with similar natural resources, especially before the introduction of metallurgy. What archaeologists find in the musical material record before the Late Bronze Age in East Asia is comparably scant, so much so that some may wonder if “music” is even the most appropriate term to describe the role certain objects could once have had; some may prefer “noise maker” or “sound artefact” (Both 2009, 1). However, as one goal of the following analysis is to show how social institutions that developed alongside incipient states conditioned and continue to condition what we perceive as musical and non-musical, I adopt an inclusive definition, encompassing any sound interpreted at the intersecting semantic systems of a culture's politics, metaphysics, and poetics – the last of which cannot be accessed directly in the periods at hand, although below I offer some suggestions as to how we might begin to

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<sup>7</sup> Ethnoarchaeology is the analysis of material remains by analogy to the practices of living communities. Although archaeological thinking is “pervasively analogical” and always has been (Wylie 1985), “ethnoarchaeology” as a field was first promulgated during the 1970s in during the New Archaeology movement in the United States, when archaeologists first sought to create testable hypotheses to better understand the material record.

imagine the musical poetics of East Asian prehistory. In other words, I understand “music” as a convenient, overarching designation for many types of aurally perceived phenomena. Within this broad formulation, music exists on a fluid spectrum alongside sound, speech, silence, and noise. Definitions of music limited to human-made melodic structures are too restrictive to encompass either what is reflected in the material record in East Asian prehistory, or what exists across many cultures of the world today.

One can also look to research in sensory archaeology (Hamilakis 2014; R. Price 2018; Tringham and Danis 2019) or sound studies, and especially the works of Jonathan Sterne (2003; 2012)<sup>8</sup> for more inclusive approaches to the auditory. I agree wholeheartedly with Hamilakis when he writes,

multi-sensorial experience [...] brings into existence humans as sensorial beings which are produced and continually reproduced through their embodied and corporeal interaction with other humans, with non-human animals, with other living organisms, and with things, with the atmosphere, the weather, and the cosmos. (2014, 104)

Yet to reiterate, I also believe that prehistorians must be cautious about projecting *too* far into ancient minds (and senses). I seek less to understand how prehistoric people in China and Japan

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<sup>8</sup> I will occasionally refer to the concept of “soundscape” throughout, although I do not employ the term as a centering methodological category. Tim Ingold has suggested that the term be eliminated from the conversation altogether, warning against the capacity of “soundscape” to objectify sound, arguing that it is unhelpful to section off categories of sensory experience within the totality of the more fluid concept of landscape (Ingold 2007a). Stefan Helmreich is still in favor of using the term, insisting that we listen “against” and “beyond” soundscape; a given soundscape is characterized somewhat paradoxically by “the arrival of listeners at a sense of being at once emplaced in space, and, at times with all its physical distance from agency and perception” (2010, 10). Steven Feld seeks to do away with the notion of landscape or any emplaced “-scape” whatsoever for fear that it creates too much “physical distance from agency and perception.” He has developed the idea of “acoustemology” or acoustic epistemology instead and employs it in his studies of the Papua New Guinea rainforests (2015).

“experienced” or “heard” than to discover what the musical material record reveals about how humans related to each other and the world around them.

An ethnography that has been particularly influential on my perspective is *Sound and Sentiment: Birds, Weeping, Poetics, and Song in Kaluli Expression* by ethnomusicologist Steven Feld (2012). He has shown that music, weeping, and birdsong are inextricably interlinked concepts for the Kaluli people of Papua New Guinea, who interpret birds as “spirit reflections” of the dead:

Bird sounds metaphorize Kaluli feelings and sentiments because of their intimate connection with the transition from visible to invisible in death, and invisible back to visible in spirit reflection. The four important fruitdoves, *muni*, *howen*, *iyeu*, and *kalo*, are all associated with the saddest sounds of grief and abandonment ... All have descending calls with falsettolike timbre, given in Kaluli representations as three- and four-note pitch sequences, which include intervals of the descending major second and descending minor third ... when Kaluli perform weeping or song, they become those very birds, and when others evaluate the moving nature of their performances, they compare the performers to them as well. (2012, 85)

This inspires the question: what were the fruitdoves of East Asian prehistory, the metaphors that served as frameworks for the meaning behind musical expression? We may never know for certain, but there must have been many, some evidence of which may remain. It seems unlikely that music emerges anywhere as a cordoned-off category of human activity, divorced from the animal and natural world. Given the presence of so many musical instruments in Chinese tombs, it is also hard not to wonder whether sounds that eventually became codified as funerary ritual also grew from gradually more structured forms of weeping for the ancestors. In sum, if in some cultures sounds made by non-human actors can come to define “music,” and if weeping can be “music,” it is prudent for the prehistoric music archaeologist to stay ethnomusicologically informed – and to adopt a more generous definition of what the ancient Greeks idiosyncratically

defined as a pure, autonomous category of sound that came as a gift from their Muses (Bonds 2014).

## Framework II: Music and the Formation of Complex Society

For the following analyses of diachronic changes in the forms and composition of musical instruments to make sense, the reader should be in accord with the basic facts of the archaeology of the Neolithic through the Bronze Age in East Asia, which indicate that Chinese and Japanese cultures become increasingly more “complex” or “stratified” – by which archaeologists mean more politically hierarchical and institutionally dense – over time (L. Liu and Chen 2003; 2012; M. Li 2018; Barnes 2007; 2015; Mizoguchi 2013) . Throughout, I attempt to strike a balance between providing necessary background information about culture change and focusing on musically relevant materials. In the final Conclusions section I synthesize some broad patterns that coalesce as useful categories for the purpose of cross-cultural comparison, but neither musical traditions nor human cultures “evolve” in easily predictable ways, nor is my analysis reliant on strict stages or models of sociocultural evolution. Like other technologies, musical traditions take shape in fits and starts. Even within the bounds of the Taosi culture alone (ca. 2300–1800 BC; Chapter 3), what one late phase tomb (M3296) reflects about musical practice appears less “complex” than what emerges in early phase tomb assemblages. The *dōtaku* bronze bells of the Yayoi period either fell out of favor or were outright rejected by the Kofun period, never developing into chimed sets as they did in China. By stating that a given culture may be more or less “complex,” I also do not imply that it should be considered more or less objectively advanced, which could carry the problematic implication that some cultures have more inherent value than others.

Given these conceptual and ethical quagmires, one could be tempted to do away with centuries of thought about the nature of social change altogether. For some time I searched earnestly for alternative frameworks that could encompass such a broad regional and chronological scope, reading those still convinced that archaeology has the unique potential to tell large-scale stories (Sherratt 1995; Harding 2005; Robb and Pauketat 2013; Pluciennik 1999; Lesure 2015). The more I learned, the clearer it became that this modest dissertation on musical instruments was not going to singlehandedly overturn core narratives of the archaeology of prehistory, particularly if we take the work of scholars within the academic institutions of China and Japan seriously. From summers 2022-2023 while based at Kyushu University, the theoretical study I saw most frequently on archaeology graduate students' desks was Timothy Earle's *How Chiefs Come to Power* (1997). Two years ago, a colleague working at the Chinese Academy of Social Sciences asked me to help translate the English abstract of an article titled "Main Objectives of an Archaeology with Chinese Characteristics" (*Zhongguo tese kaoguxue de zhuyao neirong*), a re-articulation of the commitments of archaeological institutions to Marxist ideology, published in a major state journal (Han 2021). Although these frameworks may seem distant from, even incompatible with, the revisionary priorities of the next generation of archaeologists in the United States, it would be unwise to summarily dismiss the continued embeddedness of various sociocultural evolutionary frameworks in East Asian archaeological thought as the result of our colleagues being either out of date or ideologically compromised, strictures of convention and censorship notwithstanding. It is beyond the scope of this chapter to provide an extended history of the role of evolutionary thought in East Asian archaeology, which could (and probably

should) be a dissertation unto itself.<sup>9</sup> Suffice it to say that if one is to work productively across theoretical paradigms, it is important to engage on shared terms. In mainstream subfields of archaeology, it is probably best to begin by asking how the material record contradicts prevailing methodological constructs – but as prehistoric musical instruments have not yet been integrated into questions of social complexity, this is a first step.

### Framework III: Sonorous Substances

Any study of musical instruments requires an underlying organology, or method by which the instruments discussed are categorized. For most archaeological purposes, the system devised by Erich Moritz von Hornbostel and Curt Sachs that defines musical instruments by their primary sounding component works well (1961 [1914]). The major categories of instruments in the Hornbostel-Sachs system include aerophones (wind instruments), membranophones (drums), idiophones (bells, chimes, and other self-sounding instruments), and chordophones (string instruments). However, the chapters that follow are organized based on the much older framework of the *ba yin* 八音 or “eight sonorous substances,” which comes from Chinese texts dating to the turn of the first millennium BC and defines musical instruments through the constituent material of their primary sounding component. This decision merits extended

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<sup>9</sup> Detailed, up-to-date accounts of this intellectual history can prove somewhat hard to find in that, as it has been expressed to me by young Chinese archaeologists, most work within the bounds of a mutually agreed-upon framework and find it more exciting to focus on the materials than re-hashing theoretical fundamentals, a privilege reserved for senior scholars in secure political positions (see Su 1999; Chang 2016; in English, von Falkenhausen 1993). For a helpful accounts regarding the Japanese case, see Ken’ichi Sasaki (2017) and Tsude Hiroshi (2005). Andrew Barshay provides an account of the influence of Marxian thought in the Japanese social sciences (2007).

explanation, especially for the benefit of non-Sinologist readers. As I aim to show below, *ba yin* thought has in fact been an archaeomusicological endeavor from its inception.

The concept of the *ba yin* 八音, variously translated as the “eight sonorous substances,” “eight timbres,” or “eight sounds,” first emerges in the textual record in the fourth century BC within the pages of the *Zuozhuan* (“Zuo Tradition”) historical narrative. A section that details a ceremony in the honor of the death of Zhong Zi, mother to the duke-apparent of the state of Lu, imagines a Spring and Autumn period precedent for funerary dance performance:

In the ninth month, we dedicated a temple for Zhong Zi, and the Wan dance was going to be performed there. Our lord asked Zhong Zhong about the number of feathered dancers to use. He responded, “The Son of Heaven employs eight rows, princes employ six, high officers four, and regular officers two. Dance is a means of regulating the **eight sounds** and making the eight winds circulate. That is why the number ranges from eight down.” Our lord followed this. Thereupon, for the first time, they offered six rows of feathered dancers. This was the beginning of using six rows.<sup>10</sup>

In the *Zuozhuan* and in other texts detailed below, the concept is invariably invoked in portrayals of ceremonial music of a past removed by at least several centuries, if not more. The “eight sounds” could easily be read as an imposition of an existing, Late Bronze Age musical system onto earlier history – but one might more accurately consider it a creative vision of the musical traditions of the authors’ own antiquity. This vision draws, as Lothar von Falkenhausen convincingly shows, from musical scenes in earlier texts such as the *Shijing*.<sup>11</sup> It is also

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<sup>10</sup> Translation from Durrant, Li, and Schaberg (2016, 39 emphasis added). See also Chunqiu zuozhuan, Yingong 5 (Taiwan kaiming shudian duanju 1991, 4).

<sup>11</sup> See von Falkenhausen 1998, 61-69 and Table 1, 1300-1303. As he also points out, although disparate examples of excavated instruments, epigraphic evidence, and instruments mentioned in transmitted texts can be matched to each of the eight categories specified in the *Zhouli*, as of the early ‘90s the archaeological record had yet to yield an

important to point out that portrayals of *ba yin* music become increasingly specific over time: the first gloss of the concept that presents specific material categories can be found in the *Zhouli*, a text that “emerged from mapping a unified bureaucratic order onto the imagined ideal of the Western Zhou” (Kern 2010, 89), written during either the late Warring States or early imperial times (third or second century BC), probably after the *Zuozhuan*. The text describes a court music master who harmonizes the sounds of *yin and yang* through the five notes and eight sonorous substances, which are specified as “metal, stone, earth, skin, silk, wood, gourd, and bamboo.”<sup>12</sup> However, not until the Eastern Han (25–220 AD) does the concept fully transform into anything resembling a fully-fledged organology. The *Baihutong*, or records of debates at the White Tiger Hall Conference (79–92 AD), for example, not only lists each of the eight *Zhouli* materials, but associates each of those materials with corresponding musical instruments:

What were the *ba yin*? The *Yueji* states: earth refers to ocarinas, bamboo to pipes, skin to drums, gourd to the *sheng* [free reed wind instrument], silk to strings, stone to chimes, metal to bells, wood to the *zhu* [struck and scraped wooden box].

Curiously, as commentator Chen Li (1809-1869) notes, no such line exists in extant versions of the *Yueji* (a section on music of the Warring States period text *Liji*, “Book of Rites”).<sup>13</sup> Shi Jian also elucidates that the complex textual formation process of the *Baihutong* culminated in a summary of what the Eastern Han court would have wished to distill from a wide array of opinions about classic texts after vigorous debates (2022). Given that this is the case, it is not

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assemblage that neatly reflects a ritual orchestra composed of instruments made of metal, stone, earth, skin, silk, wood, gourd, and bamboo (1993, 216). This is still true twenty years later.

<sup>12</sup> The *ba yin* concept appears three times in the *Zhouli*. The reference above comes from the *Dashi* section (Taiwan kaiming shudian duanju 1991b, 36), the other two from the *Dasiyue* section (Taiwan kaiming shudian duanju 1991b, 34-35).

<sup>13</sup> See the *Liyue* section (juan 3) of *Baihutong shuzheng* (Chen 1994, 121).



surprising that although the portion of the *Yueji* referenced does not actually exist, instruments the *Baihutong* mentions can be found in disparate sections of the text and other classics, through which the White Tiger Hall debaters combed to substantiate their vision of ancient music. Like us, Han scholars were curious to know what exactly the music of the past might have been like, although unlike us, they were under pressure to provide specific answers so that they could shape the ritual music of empire.

In sum, the “eight sonorous substances” concept was never a straightforward descriptor of an existing ritual musical system. The eight categories of musical instruments that came to define Confucian musical practice rather crystallized slowly through a musical-textual dialectic, imbedded in the correlative cosmology of the late Warring States (DeWoskin 1982; Graham 1989; Brindley 2012). If the eight sonorous substances were always in part archaeomusicological myth, what value might they have for understanding the music of earlier periods of prehistory? Rather than trying to match each material category with specific instruments as Han thinkers did, one might simply turn one’s attention to the marvelous suggestion that materials are musical. Substances, in this understanding, are not merely inert tools. They have a voice of their own, independent from form. In the early imaginings of the authors of the *Zuozhuan*, moreover, it is not a music master that “regulates” the eight sounds, but a group of dancers. This evokes a conception of embodied materiality more animistic than correlative, one that I suspect had roots long predating the Bronze Age. This suspicion, however, does not necessarily have to be correct for the idea of “sonorous substances” to provide an apt framework for approaching the material record of music in the prehistory of East Asia.

Taking inspiration from this vision of musico-materiality, I divide chapters based on the materials from which instruments are made. I do not think that prehistoric cultures in China or

Japan, even the late Yayoi and Kofun people who would have lived roughly contemporaneously with the dissemination of the texts described above in China, believed that their musical instruments corresponded directly to eight material categories any more than I think they would have called their bells “idiophones” or their drums “membranophones.” However, employing this framework positions music archaeology as a bridge between the material culture of prehistory and an emic, East Asian method of approaching ancient music. Millennia of philological and antiquarian thought show that something of value may be revealed, if sometimes obliquely, by the glossing and re-glossing of certain concepts over time. This analysis might therefore be considered one more commentary on the significance of the *ba yin* to East Asian poetics, albeit with different goals, and the luxury of much more information at my disposal than scholars had two millennia ago.

## Chapter Breakdown and Summaries

Chapters 2 and 3 cover a selection of the excavated musical instruments made by a wide range of prehistoric Chinese cultures; chapter 3 and 4 address two categories of excavated instruments dating to the late Jōmon through the Kofun in Japan. The final Conclusions section synthesizes findings across all contexts. To reiterate, I only analyze a portion of the excavated instruments of the periods covered, although I make efforts to point readers to other relevant categories of known musical materials throughout.<sup>14</sup> The totality of excavated instruments

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<sup>14</sup> The most noticeable omission here is probably *xun* or *ken* 埙 clay ocarinas, which have been excavated across both China (Lu 1978; Pan 1980; J. Fang 1988; DeWoskin 1988) and Japan (Arayama 2014). Despite early attempts to integrate these instruments via pitch measurements into narratives about the origins of Chinese ritual music, I suspect they were common, quotidian instruments not explicitly ritualized or incorporated into elite music until the

represents only a fraction of the musical instruments that once existed, with a bias towards objects belonging to elites, preserved under special circumstances or made of durable materials. To my knowledge neither gourd nor bamboo musical instruments, for example, remain from prehistory in any form.

I begin with bone instruments in Chapter 2 (Bone – Musical Mandibles in Chinese Prehistory) precisely because bone is not one of the sonorous substances named by Warring States and early imperial texts. In addition to the fact that bone musical instruments are a natural starting point as the earliest excavated instruments of East Asia, presenting them first emphasizes the fact that I am fully aware that the eight-part breakdown of the sonorous substances presented in the *Zhouli* did not exist as such in prehistory (if the absence of metal in during most of these periods was not already enough to make this fact clear). The chapter demonstrates that in addition to the flutes, jaw harps, and other types of bone musical instruments already recognized in the musical material record of China, pig and occasionally other animal mandibles included in mortuary assemblages had a multilayered set of functions that also may have involved music making. This argument is bound to be controversial. In addition to presenting ethnographic analogs, I point out that archaeological willingness to define an object as a “musical instrument” is highly dependent on the existence of that instrument or a close equivalent in the archaeologist’s own cultural context.<sup>15</sup> Chapter 3 (Skin, Stone, and Earth – The “Taosi Trio” and the Tomb as Stage in Central China) focuses straightforwardly on the emergence of ensemble

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Shang in China. That said, the decorated, zoomorphic examples of the Huoshaogou culture (ca. 1900-1500 BC) are notable (W. Liu 2013).

<sup>15</sup> Ultimately I am more concerned that readers be convinced of the latter point than the former.

music at the early Bronze Age (ca. 2000 BC) site of Taosi. I place Taosi music within narratives about the development of elite musical traditions in later periods.

In Chapter 4 (Metal – a “Sibling” Dōtaku Bronze Bell Soundscape in Western Japan), I discuss dōtaku bronze bells. I begin with a summary of the history of dōtaku scholarship, then map out a network of Middle Yayoi (ca. 300 BC–1AD) bells “meant to be heard” *kiku dōtaku*, which precede the large ornamental bells of the late Yayoi. All bells included within this Middle Yayoi network have at least one “sibling” bell cast from the same mold but discovered at another location. I suggest that these sibling dōtaku could have served as metaphors for kinship relationships across several centuries of the formation of Yayoi identity in western Japan, further establishing unity between groups through a shared soundscape. This is, admittedly, only a suggestion for their function, as the archaeological record has yet to reveal the precise nature of cross-regional social relationships during this period. In Chapter 5 (Silk – Zithers and the Formation of Complex Society in Japan), I present changes in wood zither forms over nearly two millennia (ca. 1500 BC–600 AD). Although what remains of these instruments is their wood frames, and the earliest Jōmon examples could not have had silk strings, these zithers are the starting point of a longstanding tradition of stringed instruments conventionally metonymized as the music of “silk” in East Asian music history. Finally, in Chapter 6 (Conclusions), I contend that juxtaposing the musical material culture of China and Japan at similar stages of social development allows for the observation of three, flexible phases in the relationship between music and the formation of East Asian society: I. a physio-musical phase, II. a visio-musical/spectacle phase, and III. a performer-audience phase. This framework shows that musical instruments may be used as indicators of social complexity across civilizational contexts

– and that anthropological questions fundamental to the archaeology of human prehistory can be integrated productively with the study of ancient music.

## Chapter 2: Bone – Musical Mandibles in Chinese Prehistory

### Introduction

Bone is not one of the eight sonorous substances of the Late Bronze Age according to the textual tradition of ancient China, and it was not the only material from which the Neolithic peoples of China made musical instruments (see Chapter 3). Bone musical instruments are, however, the only instruments that survive from the earliest cultures of the Chinese Neolithic. Examples with easily recognizable equivalents in modern Western music, such as the crane bone flutes from the cemetery at Jiahu in the Huai river valley (ca. 7000 BC), have been well reported (Henan 1999, 992-1020; Zhang et al. 1999; Zhang, Xiao, and Lee 2004). This chapter focuses on a more controversial case, demonstrating that prevailing interpretations of prehistoric musical traditions are implicitly conditioned by contemporary, Eurocentric understandings of music.

During the roughly five millennia that spanned the early Neolithic into the beginnings of the Bronze Age across the Yellow and Yangzi Rivers of China (ca. 7000 BC–1800 BC), diverse prehistoric cultures included the lower mandibles of pigs, other animals, and occasionally even humans (Luosishan M8) in mortuary assemblages. Why so many early Chinese cultures chose mandibles as grave goods, or what purpose they may have served before entering tombs, remains uncertain. The unprecedented excavation of a Qujialing culture tomb (ca. 3000 BC) originally containing over 400 pig mandibles (M77) at the Huangshan site in the Nanyang basin, Henan province (Henansheng & Nanyangshi 2022; fig. 2), provides an opportunity to reassess prevailing understandings of their use. Excavated pig remains including mandibles, skulls, and teeth have conventionally been interpreted as visual markers of wealth and status, connected to feasting, funerary events, and pork as a ritual food (Harunari 1993; Kim et al. 1994; L. Liu 1996;

Luo 2017; D. Sun 2017; 2018). Building beyond previous conclusions, this chapter presents a macroscopic, up-to-date summary of prehistoric Chinese mortuary mandibles and offers a new hypothesis: these mandibles may have had a sonic function before entering tombs, used alongside other bone musical instruments as shakers and scrapers or, in later periods, suspended as sets from large drums, architectural features, or racks surrounding communal event spaces.



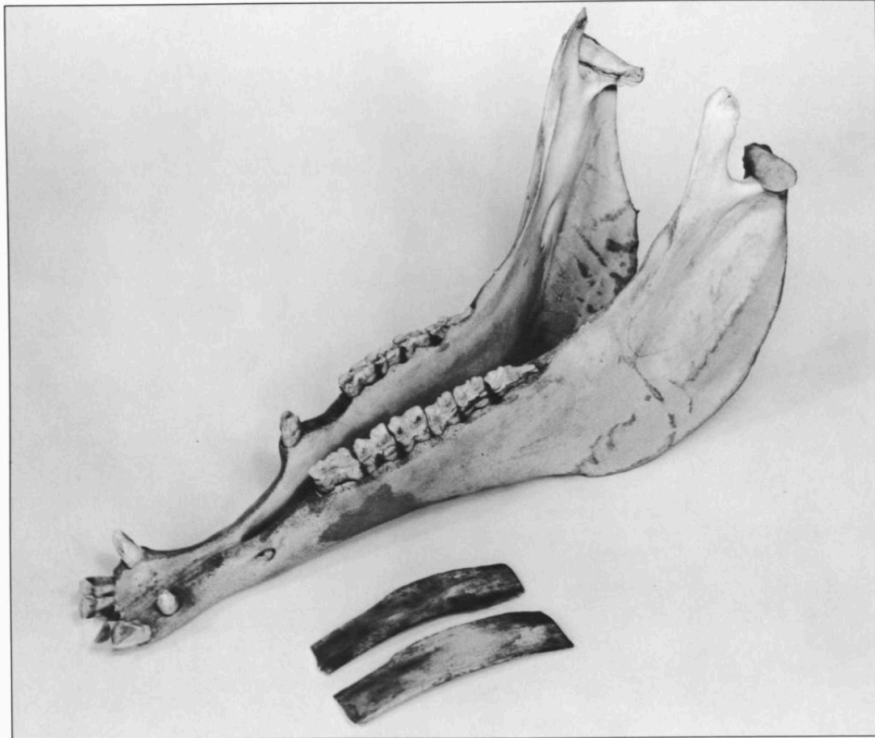
**Figure 2: M77, Huangshan, Nanyang, Henan**  
(Henansheng & Nanyangshi 2022, fig. 36)

Based on analogy to an extensive archive created by twentieth century anthropologists and ethnomusicologists working throughout the Americas and Oceania presented in the first half of this chapter, I argue for multi-sensory systems of meaning through which mortuary mandibles “spoke” across Chinese prehistory. Not musical instruments in the modern sense, mandible sets were most likely what might be called “incidental instruments” in the background of both quotidian and ritual life, functioning not only through making sound in the present but also by evoking soundscapes of animal sacrifice, thereafter entertaining spirits of the dead. Mandibles excavated from tombs serve as a reminder of the importance of ethnographic archival research in

the study of ancient music. They force us to ask: what other “sound artifacts” (Both 2009) are misunderstood in the material record due to an absence of modern analogs from classical traditions? And what, exactly, was “music” to members of cultures whose sensory realities may have been radically different from our own?

Key to building the present argument are the *quijada* jawbone instruments of Afro-Cuban, Latin American, and North American Antebellum traditions, as well as pig mandible strings hung from vertical wood slit drums by diverse cultures of the Vanuatu archipelago (fig. 3). While these examples cannot prove precisely how prehistoric mandibles were played across the multi-millennia expanse of the Chinese Neolithic and early Bronze Age, modern practices provide a basis for a more sensorially expansive understanding of ancient human-animal cycles of coexistence. This “acoustemological” perspective is inspired by the work of Stephen Feld, who has elucidated the relationship between birdsong and music for the Kaluli people of Papua New Guinea (Feld 2015). The present approach challenges archaeologists of prehistory to broaden typical methodological toolkits through interdisciplinary engagement with sound studies and ethnomusicology – and demonstrates that the study of ancient music is key to understanding the humanity of humans in prehistory.





**Figure 3: Musical mandible analogs**

Top: "Jawbone rattle and scraper" and "Pair of natural bone clappers," United States of America, late 19<sup>th</sup> century. In the Metropolitan Museum of Art collection of American musical instruments (Libin 1985, fig. 3);

Bottom: "Drums with images of ancestral spirits, with pig jaws and husks hanging from them." Vanuatu. Between 1919 and 1939. Sylvester M. Lambert Papers. MSS 682, Box 14. Special Collections & Archives, UC San Diego.

## Previous Research

Parallels between pig mandibles in the material culture of prehistoric East Asia and contemporary cultures of Asia and Oceania were first observed by Harunari Hideji (1993).<sup>16</sup> Harunari presents a survey of archaeologically excavated pig mandibles from prehistoric China and Japan, followed by instances of modern pig mandible use by non-Han peoples of Sichuan, Yunnan, Hainan island, and Taiwan; in Japan's Kagoshima (Amami Ōshima) and Oita (Ono, Notsu) prefectures; and even in Assam. In an addendum, Harunari includes a photograph of over 30 mandibles hung from a fence in domestic context of the Moni people of West Papua, the first instance of an archaeologist linking pig mandible use to an ethnographic case to my knowledge. He calls on this ethnographic evidence, as recorded in the works of Chinese and Japanese researchers, to support claims that prehistoric East Asian cultures would have 1) used mandibles for wealth and power display, and/or 2) hung them for apotropaic purposes, before either discarding them near settlements or including them in tombs. He also calls on two short studies to suggest that both the Naxi (Yunnan) and Hlai (also Li, Hainan) minorities included pig mandibles in funerary assemblages after sending of the spirits of the dead with a feast.<sup>17</sup>

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<sup>16</sup> As Harunari summarizes, pig mandibles with holes drilled into the flat portion of the bone have also been excavated across Yayoi sites in Japan. This suggests that ritualized mandible use may have come from China to Japan at some point, although curiously none have yet been found in the Korean peninsula. It is also possible that the practices were independently invented. By the Yayoi period, a large proportion of the Japanese pig population consisted of domesticated pigs brought over from the mainland, many of which were probably loosely managed then allowed to go feral by the subsequent Kofun period (Nishimoto 1991; M. Price and Hongo 2020). Important sites at which mandibles have been found include Nabatake in Kyushu and, in Honshu, Asahi in Aichi, and Aoya-Kamijiichi in Tottori, and Karako-Kagi in Nara. Sahara Makoto points out that these mandibles were sometimes carefully placed in pits (Sahara and Kanaseki 1987). At both Nabatake and Karako-Kagi, the wooden beams across which the perforated mandibles were suspended survive in the pits in which the mandibles were carefully placed.

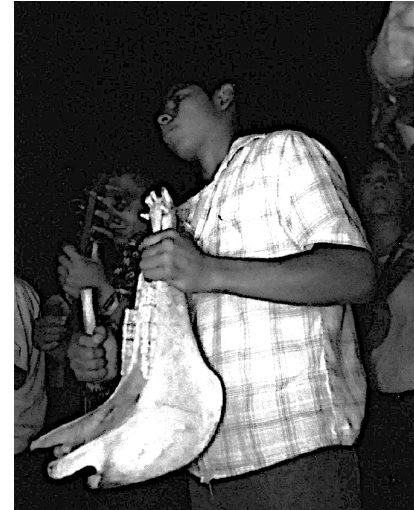
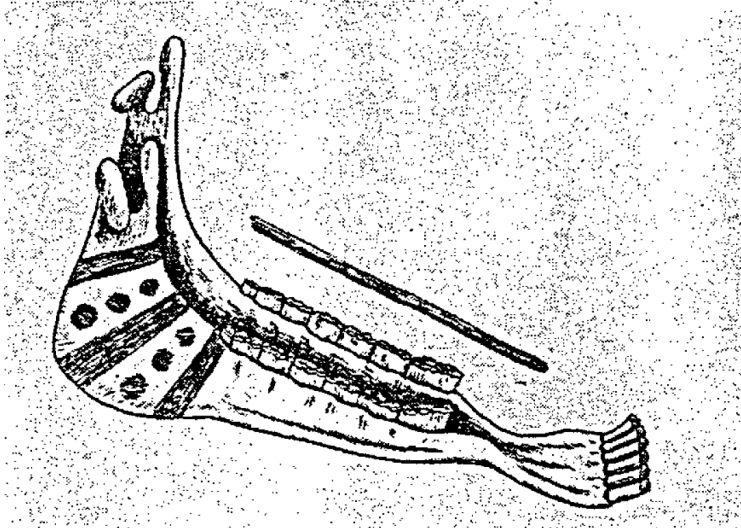
<sup>17</sup> As the two funerary accounts Harunari calls on are short studies published in Chinese archaeological journals from the 1950s and 1960s, the authors of which would have had a keen interest in drawing such a parallel, these examples should probably be regarded with some level of skepticism. I have not found other evidence of these funerary practices in Naxi or Hlai contexts. Harunari also includes contexts across China and Japan that do not involve mandibles specifically, which I omit here.

Although he curiously does not mention Harunari's study, Seung-Og Kim shortly thereafter published an article titled "Pigs, Burial, and Prestige," in which he focuses on pig remains in Neolithic Chinese mortuary contexts (1994). Drawing from Roy Rappaport's 1967 study of the Maring of Papua New Guinea (*Pigs for the Ancestors*), Kim broadly characterizes Neolithic China as a "big man society" or "early chiefdom," situating contemporary Southeast Asian, Melanesian, and Neolithic Chinese cultures within a classic socio-evolutionary framework. He argues that pigs may have been sacrificed for ancestor worship or used as a "medium of long-distance exchange" (112). Liu Li notes that contemporary southern Chinese funerary practices involving pork have "deep roots in the Chinese prehistoric period," and that "pig skulls may be seen to signify the status of the deceased from the perspective of the activities of the survivors honoring the deceased" (1996, 19). In his comprehensive treatment of ancient Chinese pig domestication and use, Luo Yunbin raises four possibilities, suggesting that mandibles could have been used as protective talismans (*hushenfu*), amulets (*tutengwu*), war trophies (*zhanlipin*), and/or in ritual feast events as offerings (*jipin*) for the spirits of the dead and deities (2017, 301). Sun Dan has also collated data on mandible burial in the Yellow and Yangzi river valleys respectively and interpreted pig mandibles as markers of wealth (D. Sun 2017; 2018). These studies have convincingly demonstrated the existence of a direct relationship between pigs and political power in Chinese prehistory. However, explanations for mandible use that have been offered so far – wealth display, funerary feasting, ritual offerings, long-distance exchange – are usually applicable to skulls, other pig parts, or whole pigs in general and do not address why mandibles themselves were valued, or how they may have been used before becoming grave goods. Below, I present two strains of ethnographic evidence that emphasize the unique material characteristics of mandibles and their potential role in auditory environments.

## Ethnographic Analogs

### Musical mandibles in the Americas

Horse, donkey, and mule mandibles are common percussive instruments in many folk traditions of Central and South America. Names for mandibles used for musical purposes include *quijada*, *carraca*, *carachacha*, *charrasca/charrasga*, *cumbamba*, or *aras napat* (Sheehy and Olsen 1998; Vargas-García 2016). To make the instrument, tissue is cooked off or otherwise removed. The mandible is then set to dry, teeth left in place. Used percussively, often in concert with other instruments and vocals, the *quijada* can be shaken and struck with the hand or an external implement, teeth rattling against one another within their sockets, producing a tambourine-like *sha-sha* sound (fig. 4). In Afro-Cuban traditions, the jawbone instrument has sometimes been decorated or enhanced with small bells (Ortíz 1952, 180; Slonimsky 1972, 317). The instrument is most common in regions with historically high populations of descendants of Black slaves and is thought to have derived from West African musical traditions (Gradante 1998; Romero 1994). Although it is no longer commonly seen in North America, the jawbone and bone clappers were also common musical instruments of Antebellum slave and minstrel performance, typically called the “jawbone” in English, a name that eventually also came to connote an accompanying dance (Libin 1985).



**Figure 4: *Quijada***

Left to right: *Quijada* (jawbone) rattle-scraper, Cuba, 20<sup>th</sup> century (Ortíz 1952); *Quijada* player in a *fandango* dedicated to the Virgin of Guadalupe, el Hato de Santa Isabel, Santiago Tuxtla, Veracruz (photo by Marisol Cortez, 2011 in Vargas-García 2016, fig. 7)

#### Musical mandibles in Asia, Oceania

Suspended pig mandibles have been widely documented in regions of the Austronesian diaspora, throughout diverse cultures of Southeast Asia, Papua New Guinea, the Solomon Islands, and most notably Vanuatu, where circular tusks of prized “tusker” pigs have “transformed into Vanuatu’s most recognizable national symbol” (Bedford 2018, 132-133). These mandibles are usually interpreted by anthropologists of these regions as “trophies” or visual symbols of power. As P. Bion Griffon writes, “In Southeast Asia, trophying of mandibles or skulls of wild and domestic animals is a custom often observed. [...] For example, Agta and Ilongot hunters kept pig mandibles on roof rafters or on rattan straps beside houses, while Ifugao are famous for keeping mandibles and crania of assorted mammals as trophies” (1998, 36; fig. 5). Anthropologists have photographed pig mandibles displayed in multiples across poles and cordylines in the ancestral shrines of the Maring people of Papua new Guinea (fig. 6), strung

along tree branches by the Kwai of the Solomon Islands (fig. 7), hung in clusters in doorways of the Longana of Vanuatu (fig. 8).



**Figure 5: Pig mandibles, Philippines**  
(Griffin 1998, 34)



**Figure 6: Pig mandibles, Papua New Guinea**

“Pig festival, pig sacrifice, Tsembaga: display in ancestral shrine of jaws from sacrificed pigs.” Maring, Papua New Guinea. Roy Rappaport Collection. 1962. MSS 516, Archive negative 2, Roll 3, Envelope 13-18, Frame 18. Special Collections & Archives, UC San Diego



**Figure 7: Pig mandibles, Solomon Islands**

“Pig jaws displayed on a tree branch.” Kwai, Solomon Islands. Robert M. Keesing. Between 1935-1993. MSS 427., Roll 58, Item 1. Special Collections & Archives, UC San Diego





**Figure 8: Pig mandibles, Vanuatu**  
“Dried Boars' Jaws.” 1970. Longana, Vanuatu. William Rodman and Margaret Critchlow Photographs. Shared Shelf: 24355545. 1970-Series2/File: 70 BT 2. Special Collections & Archives, UC San Diego

Although it can be difficult to perceive through photographs alone, ethnomusicological studies of Vanuatu show that beyond acting as visual symbols, tusks and suspended mandibles also function through auditory cultural systems. In the listening notes for recordings compiled



from 1997-2010 across the Vanuatu archipelago (*Musiques du Vanuatu: Fêtes et mystères*), Alexandre François and Monika Stern translate a praise song commissioned by a Motolavan man:

There you stand hearkening  
clanking your power  
clanking your armlets  
clanking the stones of your platform  
Your voice has found its way to me  
the crowd is gathered around you  
my singing will bring you to the sacred money

The ethnomusicologists elaborate that the “armlets of curved pig tusks [serve as] symbol of great prestige and wealth, so numerous that they clank together” (2013, 93). The lyrics of the song are a crucial reminder that objects interpreted first as visual “ornament” often function through multiple, overlapping sensory systems.

In many parts of Vanuatu, pig mandibles, sometimes with tusks and sometimes without, were once hung from standing slit drums 6-7 meters high (fig. 9). The most extensive photographic collection of Vanuatan slit drums comes from the archives of British anthropologist John Layard’s 1914-1915 fieldwork in Atchin, an island near Malakula. During the early 20<sup>th</sup> century, many musical traditions now rare or gone were still practiced. In the 1930s, rank-taking ceremonies conducted through pig slaughter were discontinued in some islands due to pressure from missions and land shortages after the introduction of copra cash-cropping (Crowe 1994, 21). Slit drums are still one of the definitive instruments of the archipelago, varying considerably across the islands in decoration, size, form, and function. According to Raymond Ammann, standing (as opposed to horizontal) slit drums are popular on the Shepherd Islands, Efate, Malakula, Ambrym, and Paama (2012, 160); interestingly, Peter Crowe has also noted that the drums’ distribution “correlate(s) with the presence of “other-Melanesian” (but Austronesian)

languages, suggesting a distinct prehistoric wave of migration by comparison with the “eastern Oceanic” language areas” (1994, 22). These drums are often personified, carved to represent ancestors, played polyrhythmically in both rank taking events and for the sake of sending messages. Mandibles of pigs that were sacrificed when the drums were consecrated, as well as at various other social events, have been hung from drums or on nearby racks surrounding the area where events take place, sometimes in large numbers (fig. 10, fig. 11). Examples with circular tusks are chosen to be visually impressive, and when the drums are struck, they rattle both against each other and the body of the drum.



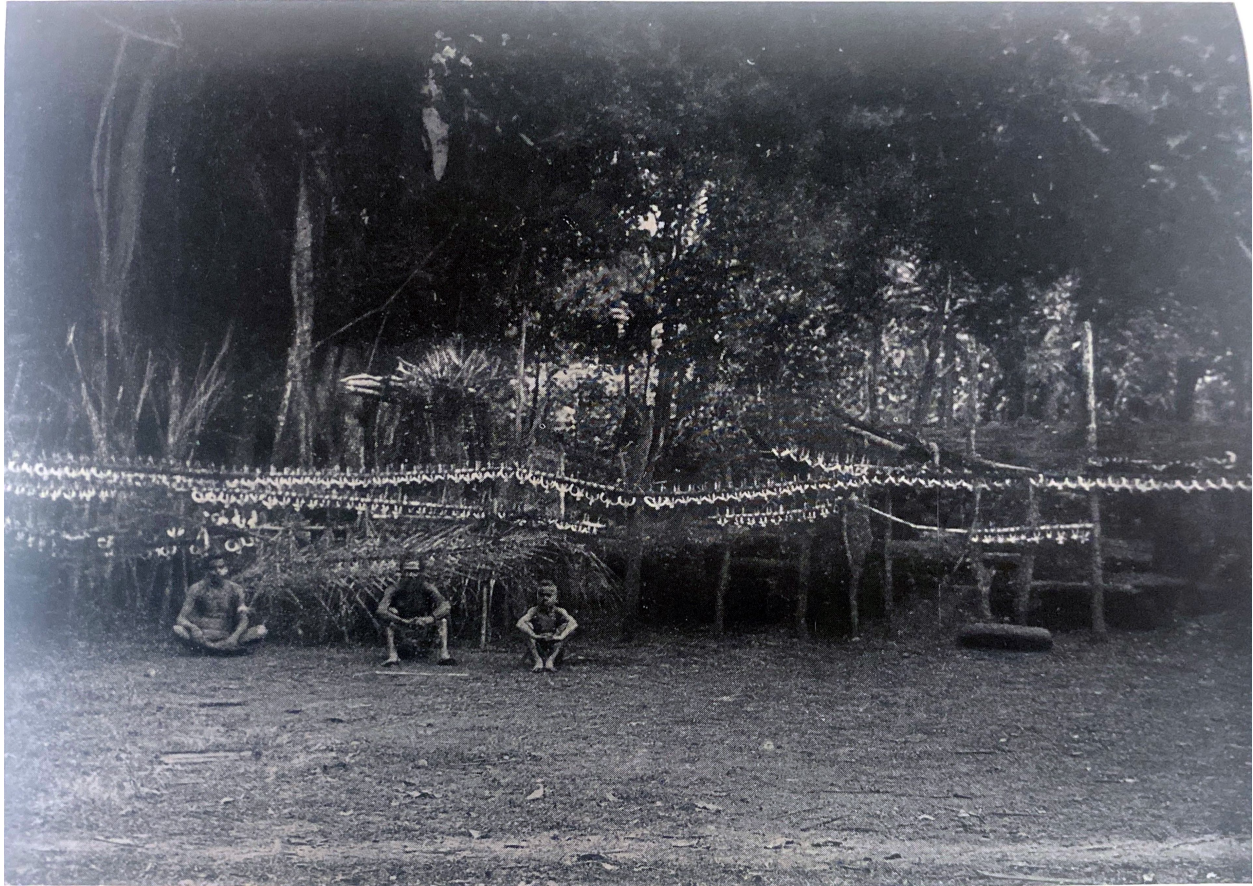
**Figure 9: Slit drum with mandibles, Vanuatu**

"Another slit drum with two faces sharing one eye. Hanging from its head are the jaw-bones of five tusked boars which were sacrificed when the drum was set up. Projecting from the top is the thigh bone of a bullock which natives have acquired from a white man and sacrificed during the Maki in place of the traditional tusked boar." Malekula, Vanuatu. John Layard. 1914-1915. Accession Number P.3622.ACH1. Cambridge Museum of Archaeology and Anthropology.



**Figure 10: Pig mandibles and tusks displayed near dancing ground, Vanuatu**  
“Tusked pigs are an essential and very valuable part of the Hunggwe. This collection is displayed on a tree at the edge of the dancing ground. Sometimes a jawbone like this is shattered as part of the ceremony.” Eastern Aoba, Vanuatu. (Cameron 1975, 382)





**Figure 11: Suspended pig mandibles and tusks, Vanuatu**  
“Racks displaying the tusked jaws of boars sacrificed during a recent Maki at Togh-vanu.” Malekula, Vanuatu.  
John Layard. 1914-1915. (Layard, 1942, pl. 17)

## Methods and Ethical Considerations

Before proceeding to the archaeological data, it is crucial to articulate the methodological and ethical considerations inherent in performing ethnoarchaeological analysis. Ethnographic analogy, the primary method employed to support claims made below in this chapter, is an essential means of mediating between the archaeological record and questions unanswerable by science alone. Criticisms of analogy and ethnoarchaeology arise perennially, but most anthropological archaeologists acknowledge that our discipline is “pervasively analogical” (Wylie 1985, 93). By definition, archaeology confronts what Giorgio Buccellati has called

“broken traditions” or a “break in hermeneutic support” (2017, 22-23, 301) between the material record of past practices and current knowledge. Archaeologists of prehistoric music are tasked with building an especially wide bridge of inference between meaning and the material record. Methodological advances in the archaeological sciences have allowed for higher resolution in our understanding of foodways, migration, exchange, and other large-scale categories of human activity, but the gap between prehistoric material culture and music remains wide enough that some may prefer to either abandon such humanistic analysis altogether – or relegate speculation to a few sentences at the end of a Conclusions section. Comparison between contemporary practices and the material record can help fill the gap, allowing for a more resonant portrayal of prehistory than would otherwise be possible.

But analogy must be used with care. Absent an explicitly decolonial commitment, ethnoarchaeological approaches to prehistory forge a double-edged sword: first, the archaeologist risks implying that the culture by which the analogy is inspired is primitive, static, and technologically unadvanced. Second, she risks viewing prehistoric cultures in question through the colonial lens of early anthropologists. In the case of Vanuatan slit drums, one must point out that the later writings of John Layard are problematic. The ethnography he published decades after living on Atchin, as Haidy Geismar has written, has proven “both a primary cultural resource and a highly contentious source of knowledge” on Vanuatu (2009).

I seek to interpret prehistory by drawing from a flawed ethnographic record without reproducing its interpretations. Ultimately, analogs raised are meant not to limit, but rather to “expand the range of possible explanations” of unfamiliar phenomena that manifest in the material record (Wendrich 2013). As this range of possible explanations expands, so too must the theoretical adeptness of archaeologists engaged in ethnographic and archival research. Adopting

an acoustemological perspective allows a marginal sensory category to emerge as a dominant voice over the preoccupations of the colonial gaze. Precisely because scholars like Layard photographed but did not typically interpret pig mandibles as having musical significance, listening to – rather than merely observing – them proves one means of subverting the interpretive authority of the 20<sup>th</sup> century anthropological mindset.

### Archaeological Data: Paleolithic Origins of Bone Musical Instruments Across Cultures

Across the world, animal byproducts – bone, horn, ivory, antler, shell, carapace – consistently remain as the primary constituent materials of not only the oldest surviving musical instruments, but also the earliest grave goods. The occupant of one of the earliest intentional burials, one of ten at the Skuhl Cave cemetery near Haifa in Israel dating to ca. 120,000 years ago (Skuhl V), was found with a large wild boar mandible enclosed in his arms (Bate and Garrod 1937). Flutes, rasps, and other bone and ivory percussive objects survive from Upper Paleolithic cave sites throughout Europe (ca. 40,000 years ago), as old as *Homo sapiens* occupation of the continent itself and at an advanced enough level of artisanship that some suggest that instrumental accompaniment of vocal music and dance must have first been an invention of anatomically modern humans in Africa, if not of even earlier hominids (Morley 2013, 32-98). Modified, playable conch horns survive from the European Paleolithic (Fritz et al. 2021), demonstrating that for at least tens of thousands of years, human beings have taken advantage of a variety of land and marine animal byproducts not only for food and clothing, but also for making music.

Animal bone may have been used to make musical instruments during the Paleolithic in East Asia, but no examples surviving from such an early period have been found. Bone

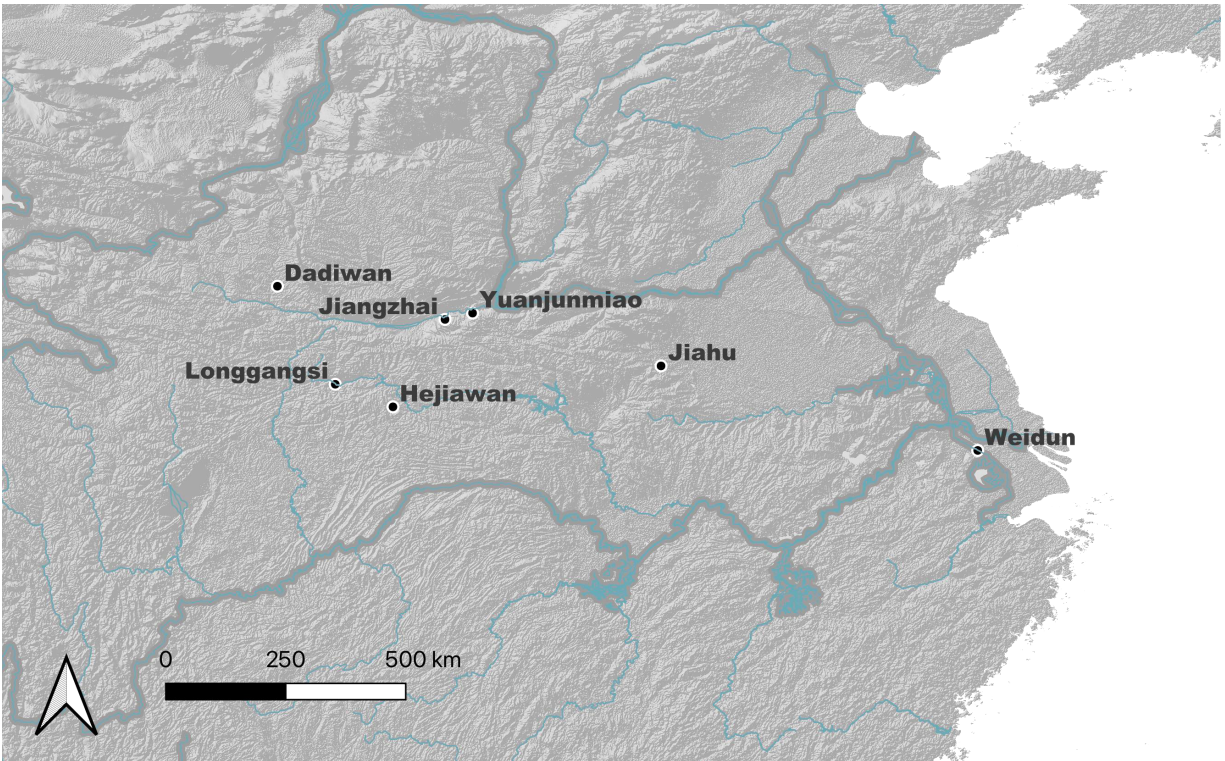
instruments do not emerge in the material record until the Neolithic in China. Although bone musical instruments long predate the Neolithic elsewhere, Chinese cultures appear to have been the earliest – and perhaps only – to *systematically* incorporate bone musical instruments into mortuary ritual in prehistory. Mandibles are one type of excavated bone instruments that, I argue, existed on a flexible spectrum from the practical to the ritual, from the visual to the sonic. An inclusive, if less intuitive, definition of musical instrument proves necessary to interpret them below.

In her analyses of pig mandibles as prestige grave goods, Sun Dan suggests five chronological phases and two geographical centers, the Yellow and Yangzi river valley regions respectively (2017, 2018). I generally follow her framework but find it helpful to divide the practice into four stages and to discuss cultural contexts in tandem. Emphasizing the cross-regional nature of mandible burial proves apt in consideration of the aforementioned discoveries at Huangshan (ca. 3000 BC), which was a key center of exchange between north and south. In addition, since the ethnographic evidence presented above indicates that mandibles of a wide variety of mammal species have been used in musical contexts, I include some relevant examples of mortuary mandibles of other animal species as well. Finally, I also discuss excavated bone flutes, rattles, and jaw harps throughout, highlighting the ubiquitous use of animal bone as a musical material up until the proliferation of metallurgy, after the end of the Longshan Period (ca. 1800 BC).



## Archaeological Evidence: Bone Music in Chinese Prehistory (ca. 7000–1800 BC)

Mandible burial, Early to Early Middle Neolithic, ca. 7000–4300 BC (fig. 12, table 1)



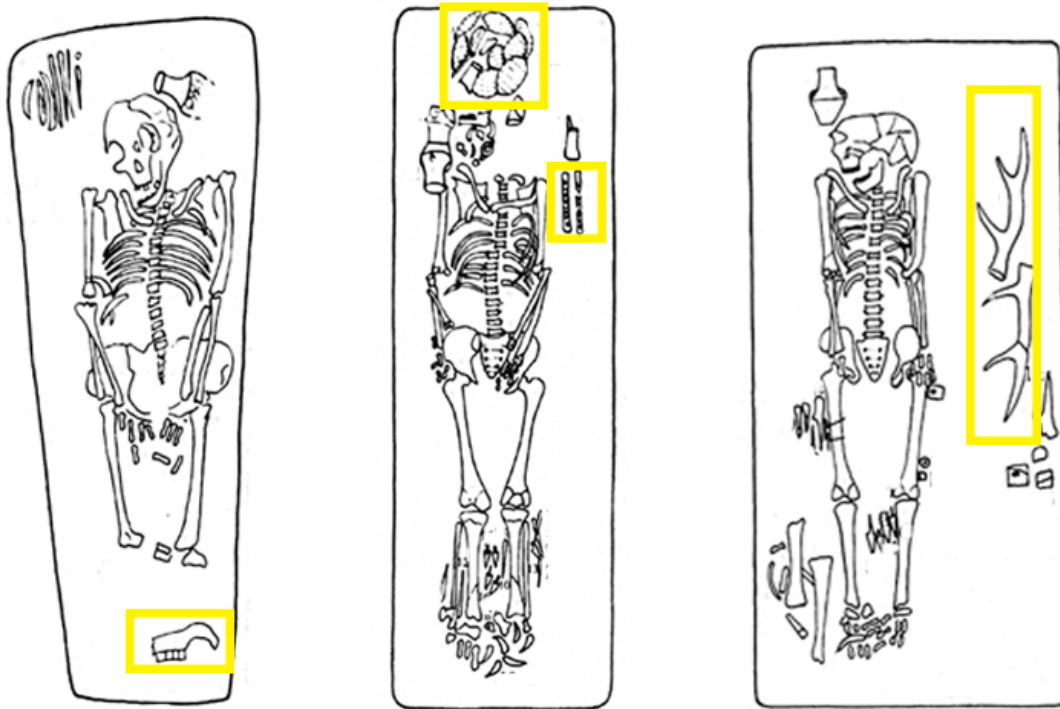
**Figure 12: Map of mortuary mandibles, Early to Early-Middle Neolithic, ca. 7000–4300 BC**

The practice of interring mandibles in graves is approximately as old as animal domestication itself in China, although interred mandibles seem to include both wild and domesticated examples. The earliest instance of mandible burial comes from the cemetery of the Jiahu culture, also the site at which the earliest known domesticated pig (*Sus domesticus*) remains have been recovered. These remains date to 6600 BC (Henansheng 1999; Cucchi et al. 2011). Jiahu, located in Wuyang county in the province of Henan, sits between the Yellow and Yangzi rivers in the fertile Huai river valley region. It is surrounded by contemporaneous sites of the broader Peiligang tradition in one of China’s most important early Neolithic regional centers.



The site was occupied from about 7000 BC to 5500 BC and excavation has been conducted there continuously from the beginning of the 1980s forward. Domesticated animal and rice remains, as well as harvesting tools, secured the site's identity as a crucial locus of agricultural innovation (Henansheng 1999; Henansheng 2015). Variance in grave size and goods, as well as division of labor in craft production and settlement structure, also point toward incipient social stratification (Zhang and Cui 2013, 202-204).

In the Jiahu cemetery, mandibles are one out of several types of bone instruments included in mortuary assemblages, including flutes and rattles (fig. 13). To researchers of East Asian music archaeology, "Jiahu" has become synonymous with the 32 crane bone flutes predominately excavated from the cemetery, interpreted by many as the oldest surviving East Asian musical instruments. Beginning with the publication of the initial report, Chinese archaeologists have attempted to reconstruct the scales the flutes may once have emitted (Henan 1999, 992-1020; Zhang et al. 1999; Zhang, Xiao, and Lee 2004). Although the flutes have received considerable attention, other bone instruments in the assemblage merit evaluation as musical instruments. There were over 90 turtle shell rattles found in 25 of 349 excavated tombs; deer antlers that could have been used as rasps or mallets were also present (M335). Three pig mandibles were excavated from three relatively large, high-status tombs (M113, M119, M278) that also yielded pottery, stone implements, and other bone objects, the tombs from the first and second phases of the site (ca. 6600–5500 BC). An ox mandible was found alongside pottery and small bone objects in M109, from phase one (ca. 7000–6600 BC). A set of 7 raccoon dog mandibles was present in M94. Interestingly, none of these mandibles are found in assemblages with flutes, perhaps suggesting that the two types of objects occupied a parallel conceptual niche.



**Figure 13: Examples of tombs containing bone musical instruments at Jiahu**  
 Left to right: M113 (pig jaw), M344 (crane bone flutes, turtle shell rattles), M335 (deer antlers) (Henansheng 1999)

Jiahu is not the only site at which mandibles are excavated from graves of this early stage in Chinese prehistory, making it difficult to say for certain where the practice originated. Three pig mandibles were also excavated from three tombs (M14, M15, M208) of the first phase of the Dadiwan site in the upper reaches of the Yellow River valley in Qin'an, Gansu, another important Neolithic hub notable for early evidence of dog domestication and millet agriculture. At Dadiwan, mandible burial appears to either slightly predate or coincide with local pig domestication (Gansusheng 2006). Not long thereafter (ca. 6<sup>th</sup> century BC), the practice spread relatively widely across prehistoric China, documented in both the central Yellow River and

Yangzi River valleys: at Jiangzhai in Lintong (M27), Yuanjunmiao in Huaxian (M439, a secondary burial of 8 individuals), Hejiawan in Xixiang (1 mandible), Longgangsi in Nanzheng (M4), all in Shaanxi, and even as far as the Yangzi river delta at Weidun at Changzhou, Jiangsu (M7A, M11).

Site	Date	# Mandibles	Tomb(s) with Mandibles
Jiahu, Wuyang, Henan	7 <sup>th</sup> -6 <sup>th</sup> mil. BC	11 (1 ox; 3 pig; 7 raccoon dog)	M109; M113, M119, M278; M94
Dadiwan, Qin'an, Gansu (Phases I, II)	7 <sup>th</sup> -5 <sup>th</sup> mil. BC	6	M14, M15, M208 (7 <sup>th</sup> c); M219, M220 (deer), M222
Jiangzhai, Lintong, Shaanxi	6 <sup>th</sup> mil. BC	2	M27
Yuanjunmiao, Hua, Shaanxi	5 <sup>th</sup> mil. BC	1	M439 (lower right mandible)
Hejiawan, Xixiang, Shaanxi	5 <sup>th</sup> mil. BC	1	M?
Longgangsi, Nanzheng, Shaanxi	5 <sup>th</sup> mil. BC	1	M4
Weidun, Changzhou, Jiangsu	5 <sup>th</sup> mil. BC	3	M7A (2), M11
Dawenkou, Tai'an, Shandong (Beixin Phase)	5 <sup>th</sup> -4 <sup>th</sup> mil. BC	1	M1032

**Table 1: Mortuary mandibles, Early to Early-Middle Neolithic, ca. 7000–4300 BC**

Mandible burial, Middle Neolithic, ca. 4300–3500 BC (fig. 14, table 2)

The next major center of animal byproduct use in musical mortuary assemblages is the Dawenkou cultural sphere (ca. 4300–2600 BC), successor to the Beixin culture. Turtle shells, drums, and mandibles are present in cemeteries of the major Dawenkou sites, which spread from the Huai river basin up through Shandong, extending into modern day Jiangsu, Anhui, and eastern Henan as well. Social distinction takes on a new level throughout the Dawenkou universe, indicated by what Li Min calls the “funerary syntax of Dawenkou elite burials” (2018,

61). Before detailing excavated mandibles, it is helpful to briefly summarize other musical materials found in Dawenkou contexts: wood-frame drums with alligator-skins, evidenced by remaining skin plates and scutes, are probably the most well-known musical innovation of the Dawenkou period, but such drumskins were a highly exceptional grave good at the time (Shandong and Jinan 1974, 22-25) and did not become commonly incorporated into elite assemblages until the subsequent Longshan period at Taosi, as will be shown in the subsequent section. Moreover, although turtle shells are buried as many as 8 at a time in earlier tombs at Jiahu, they are generally found singly or in pairs throughout Dawenkou cemeteries (at Liulin, Dadunzi, Wangyin, Yedian etc.). Chen Xingcan and Li Runquan observe that a correlation between turtle shell burial and other factors indicating elite social status weakens in the Dawenkou culture; they also show that shells were likely used as rattles based on analogy to ethnographic evidence from various indigenous North American cultures (2004, 77).

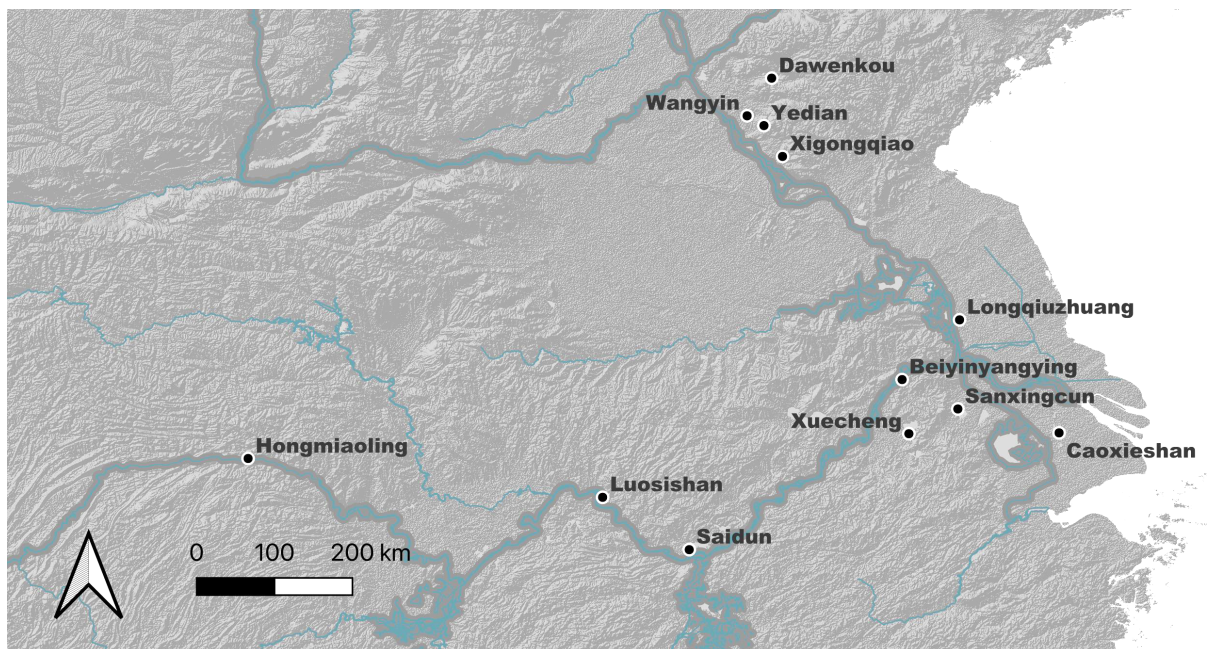
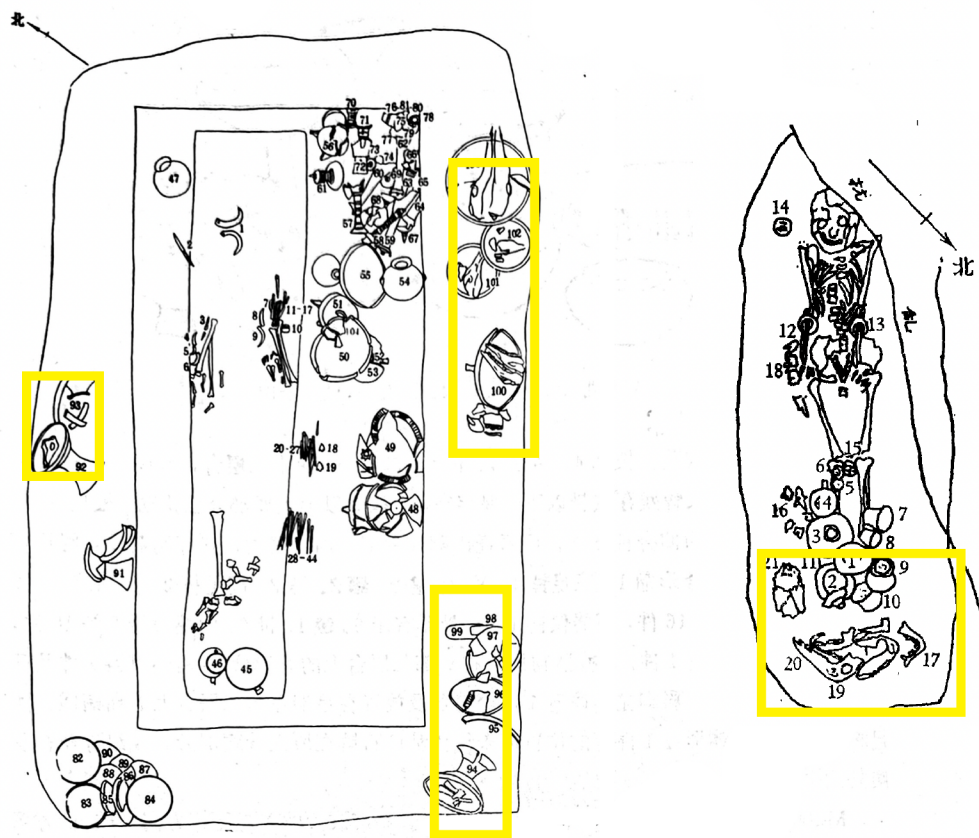


Figure 14: Map of mortuary mandibles, Middle Neolithic, ca. 4300–3500 BC

Pig mandibles and skulls are present in high status graves of the Dawenkou culture from the early phase of the site forward. Only one mandible was found in a Beixin period tomb at the main Dawenkou cemetery in Tai'an, Shandong (M1032), but by the beginnings of the early Dawenkou phase, mandibles were excavated not only at that site but also at several other cemeteries in Shandong: Yedian in Zou county, Xigongqiao in Tengzhou, and Wangyin at Yanzhou. Amongst these Dawenkou contexts, M2005 contained over 10 pig mandibles, as well as many other grave goods, comprising the earliest example of what might be thought of as an assemblage with a pig mandible “set” of various sizes excavated in northern China. The mandibles were found in vessels in different parts of the tomb, so it is unclear whether they were used together (Shandongsheng and Jinanshi 1974; fig. 12).



**Figure 15: Examples of Middle Neolithic mortuary mandibles**  
 Left to right: Dawenkou M2005 (Shandongsheng and Jinanshi 1974, 122) and Luosishan M8 (Hubeisheng 1987, 341)

By the early Dawenkou period (late fifth century BC), mandible burial was already becoming widespread in cemeteries of cultures along the Yangzi river valley, serving as a common denominator of both northern and southern burial assemblages, foreshadowing the explosion of mandible burial in the Qujialing culture in following centuries. One cluster of mandible use is evident in the Beiyinyangying culture near the lower reaches of the Yangzi river and in the Yangzi river delta. According to Luo Yunbin, mandibles were found in 45 of the 1001 tombs at Sanxincun in Jiangsu, making Sanxingcun the site with the highest number of tombs with mandibles in mortuary assemblages at this stage (2017, 282). Cemeteries of both the Luosishan and Saidun sites in the middle Yangzi river valley also contained cemeteries with around 30 total mandibles (Zhongguo 2010; Hubeisheng 1987). Luosishan M8, the largest tomb at the site, is particularly notable: the tomb contained a total of 27 grave goods including three pig mandibles, a large fish maw, and even a human jaw excavated at the foot of the approximately 38-year-old female occupant (fig. 15). M8 also contained a tortoise shell, suggesting some level of continuity between musical mortuary practices originating in Jiahu-Dawenkou contexts and those of elites of the middle Yangzi river valley. A single, spherical clay rattle was also excavated from the tomb, a practice unique to the region (Hubeisheng Huanggang Diqu Bowuguan 1987, 341).

Site	Date	# Mandible(s)	# Tomb(s) with Mandibles
Dawenkou, Tai'an, Shandong (Early Phase)	Late 5th-early 4 <sup>th</sup> mil. BC	15	6
Wangyin, Yanzhou, Shandong	Late 5th-early 4 <sup>th</sup> mil. BC	12	10
Yedian, Zouxian, Shandong (Early Dawenkou)	Late 5th-early 4 <sup>th</sup> mil. BC	1	1
Xigongqiao, Tengzhou, Shandong (Early Dawenkou)	Late 5th-early 4 <sup>th</sup> mil. BC	2	1
Hongmiaoling, Badong, Hubei	Late 5th-early 4 <sup>th</sup> mil. BC	1	2
Luosishan, Huanggang, Hubei (Daxi, Qujialing)	Late 5th-early 4 <sup>th</sup> mil. BC	36 (pig, deer, human)	4 (M4, M5, M7, M8)
Saidun, Huangmei, Hubei	Late 5th-early 4 <sup>th</sup> mil. BC	28	6
Beiyinyangying, Nanjing, Jiangsu	Late 5th-early 4 <sup>th</sup> mil. BC	9	7
Xuecheng, Gaochun, Jiangsu	Late 5th-early 4 <sup>th</sup> mil. BC	?	<23 (report lists 23 tombs with either pig teeth or mandibles)
Sanxingcun, Jintan, Jiangsu	Late 5th-early 4 <sup>th</sup> mil. BC	?	45
Longqiuzhuang, Gaoyou, Jiangsu	Late 5th-early 4 <sup>th</sup> mil. BC	1	1
Caoxieshan, Wuxian, Jiangsu	Late 5th-early 4 <sup>th</sup> mil. BC	2	1

**Table 2: Mortuary mandibles, Middle Neolithic, ca. 4300–3500 BC**

Mandible mortuary culture in the Yangzi River Valley and beyond, ca. 3500–2300 BC (fig. 16, table 3)

The density and geographic distribution of mortuary mandible use increases dramatically across the Chinese prehistoric interaction sphere by the middle of the fourth millennium BC, but the Nanyang basin emerges as its clear geographic center. Although hydrologically speaking the basin is connected to the Middle Yangzi through a system that drains into the Han River, the material culture of the region also indicates Yangshao connections. Some archaeologists suggest treating the basin as a distinct cultural zone (Ehrich 2017; Fan 2000). Throughout this stage in the Nanyang basin and other Yangzi river valley contexts – and in contrast to Jiahu-Dawenkou traditions – pig mandibles are often the most common and sometimes even the only grave good present in tombs. As will be discussed below in the conclusions to this chapter, the presence of



massive quantities of mandibles in single tombs indicates that during the Late Middle Neolithic, mandibles may have been collected and used throughout and even beyond occupants' lifetimes.

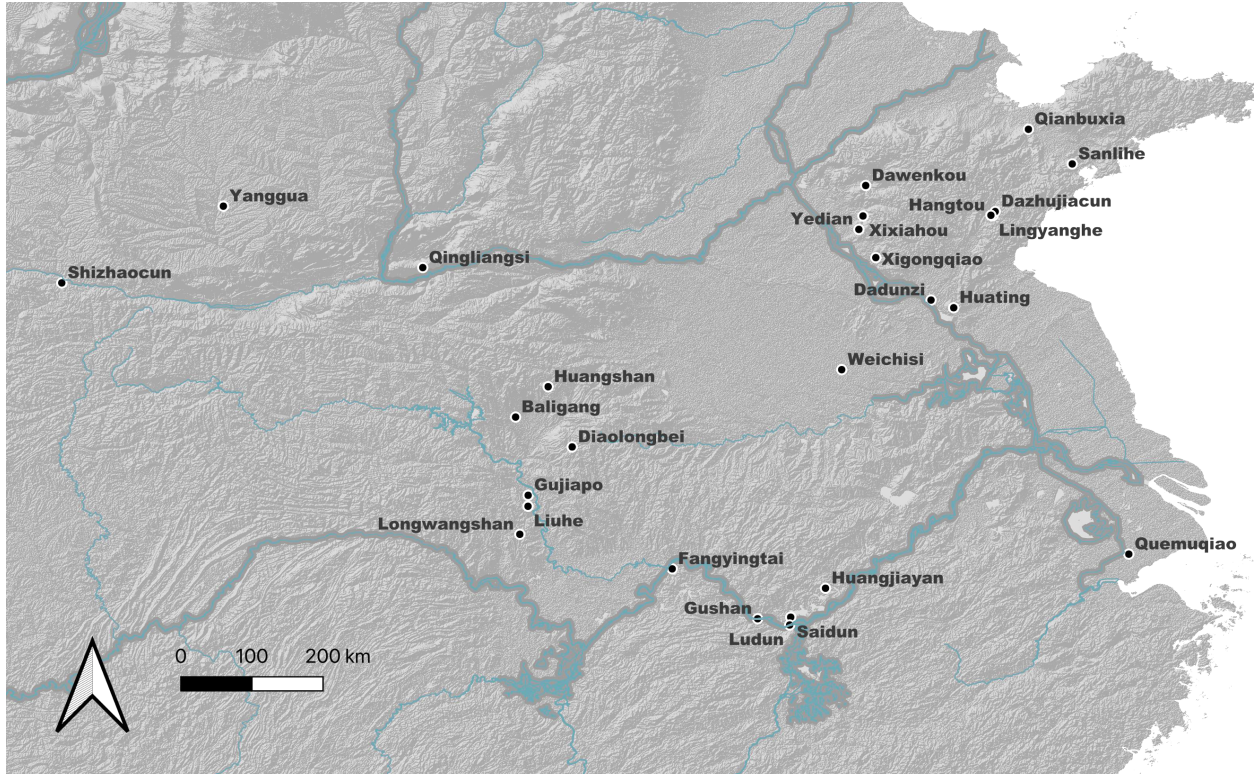


Figure 16: Map of mortuary mandibles, Late Neolithic, ca. 3500–2300 BC

Sites within the Nanyang basin where mandibles have been found include Diaolongbei (Yangshao/Qujialing), Baligang (Yangshao), and Huangshan (Qujialing). In the third phase of the Diaolongbei site, at least 423 pig mandibles were found in 32 tombs, as many as 72 in M16, the tomb of a 4-5 year old child (Zhongguo 2006, 200, 338). At Baligang M13, 138 mandibles were the only grave goods present other than six pieces of pottery, excavated along an inner, second-level platform of a single tomb consisting of the secondary burial of 126 individuals. Carbon-14 dating has demonstrated that while the individuals in this tomb died across at least 200 years, the mandibles, representing both domesticated pigs and wild boars, died across an over 400 year



span (C. Zhang et al. 2018; fig. 17). At the recently excavated Huangshan lapidary production center site, over 1600 pig mandibles have been excavated from 87 Qujialing culture tombs, making mandibles by far the most common grave good. The largest tomb, M77, was occupied by a male age 40-50. The tomb contained pottery vessels, a jade bracelet, two jade axes with bone inlay, an ivory bow grip and three bundles of bone arrowheads, and animal bone implements including over 200 pig mandibles placed in three layers below the foot of the occupant. A sacrificial pit dedicated to M77 was disturbed by a later tomb but also likely originally contained 200 more, meaning that this individual was originally interred with over 400 mandibles (Henansheng & Nanyangshi 2022; fig. 18). Ma Juncai has noted that (1) the excellent preservation of mandibles in comparison to occupants' skeletons, alongside (2) their tight organization and careful placement usually below the feet of occupants, in addition to (3) marks on the mandibles themselves, all strongly indicate that they were defleshed and dried (CCTV10 2021).

Moving further south along the Han river, mandibles were also excavated from over half of Qujialing culture tombs at the Gujiapo cemetery (131 of 237). Excavators do not provide exact quantities of mandibles in each tomb but note that M57 contained the most, with more than 40-50. Tombs with more mandibles contained more goods in general. Beyond the cemetery, one jar burial in the settlement was also found with about 10 suckling pig mandibles (Jia 2004). At Saidun in Hubei, 376 mandibles were present in 27 of the Xuejiagang culture graves (Zhongguo 2010).

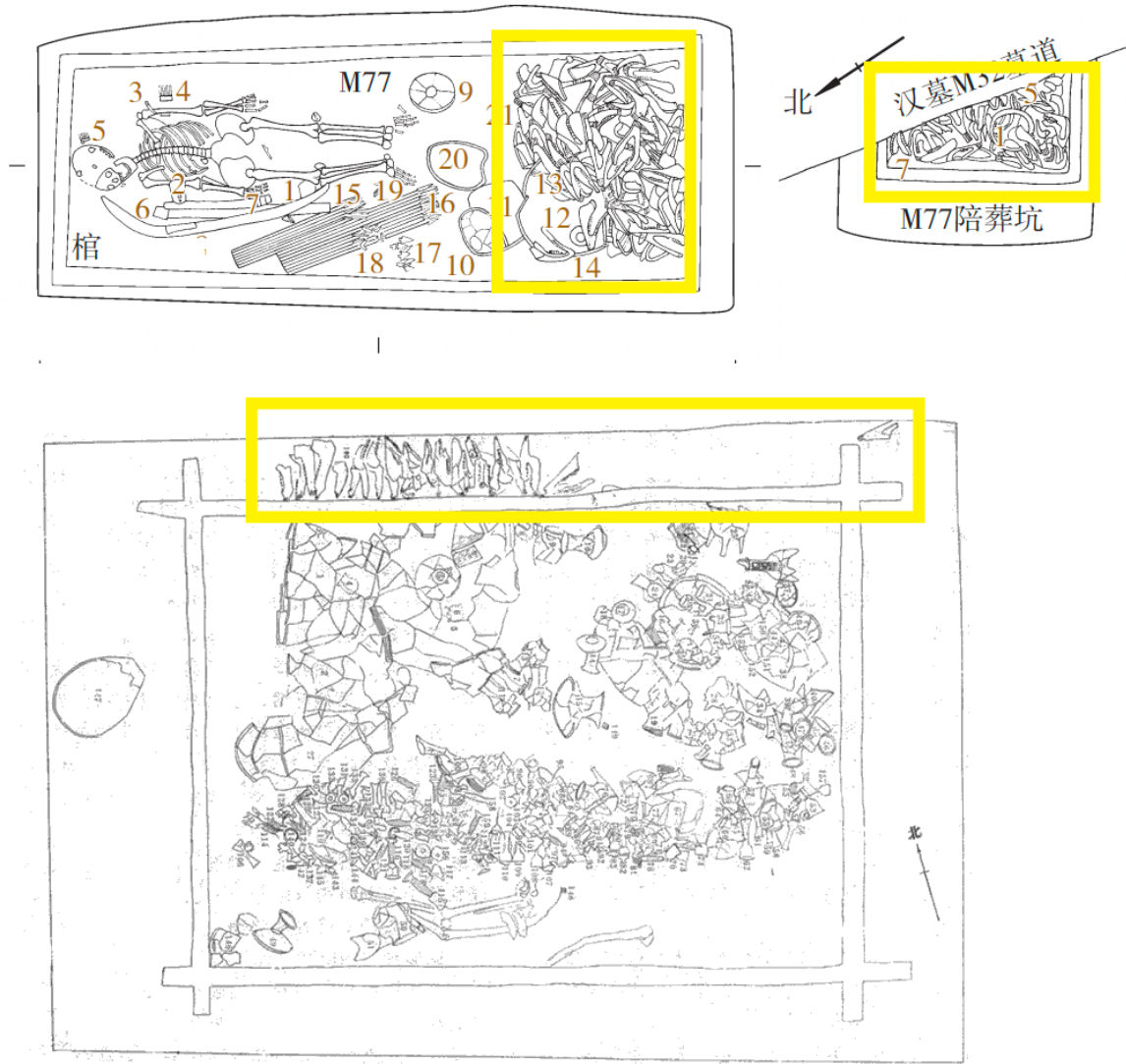


**Figure 17: Baligang M13**  
(C. Zhang et al. 2018, fig. 1). Mandibles on the upper platform.

Mandible burial also continued at sites in the Yellow River valley in Late Dawenkou and surrounding cultural zones, if not at the same scale as it did in the south. Pig mandibles are a common grave good at Dazhujiaocun, where as few as one and as many as 10 mandibles were excavated from nearly half of the tombs at the cemetery (Shandongsheng 1991). Thirty-three were placed on top of the coffin of M17 at the Lingyanghe cemetery (fig. 18), where 174 mandibles were excavated in total (Shandongsheng et al. 1987). By this period in both the Yellow and Yangzi river valleys, there seems to be little diversity in animal mandible type use, indicating the preeminence of domesticated pigs in both agriculture and ritual.

Site	Date	# Mandibles	#Tomb(s) with Mandibles
Huangshan, Nanyang, Henan	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	1600+	87
Diaolongbei, Zaoyang, Hubei	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	423+	34
Baligang, Dengzhou, Henan	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	138	1 (M13)
Gujiapo, Yicheng, Hubei	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	?	131
Longwangshan, Jingmen, Hubei	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	11	1
Liuhe, Zhongxiang, Hubei	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	5	3
Gushan, Wuxue, Hubei	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	?	7
Huangjiayan, Wangjiang, Anhui	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	?	?
Fangyingtai, Wuhan, Hubei	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	11	1
Saidun, Huangmei, Hubei	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	376	27
Ludun, Huangmei, Hubei	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	13	4
Quemuqiao, Jiaxing, Zhejiang	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	1	1
Lingyanghe, Juxian, Shandong	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	174	29
Sanlihe, Jiaoxian, Shandong (late Dawenkou)	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	145	20
Dazhujiaocun, Juxian, Shandong	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	79	17
Huating, Xinyi, Jiangsu	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	70	18
Zouxian, Yedian, Shandong (middle, late Dawenkou)	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	42	4
Hangtuo, Juxian, Shandong	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	19	4
Qianbuxia, Weifang, Shandong	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	9	2
Weichisi, Mengcheng, Anhui	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	7	7
Dawenkou, Tai'an, Shandong (middle, late Dawenkou)	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	6	3
Xigongqiao, Tengzhou, Shandong	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	2	2
Dadunzi, Pixian, Jiangsu	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	2	1
Xixiahou, Qufu, Shandong	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	1	1
Qingliangsi, Ruicheng, Shanxi	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	1	1
Dawenkou, Tai'an, Shandong (middle, late Dawenkou)	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	3	6
Shizhaocun, Tianshui, Gansu	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	2	1
Dadiwan, Qin'an, Gansu (Phase IV)	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	2	2
Yanggua, Ningxian, Gansu	Mid. 4 <sup>th</sup> -early 3 <sup>rd</sup> mil. BC	2	2

**Table 3: Mortuary mandibles, Late Neolithic, ca. 3500–2300 BC**

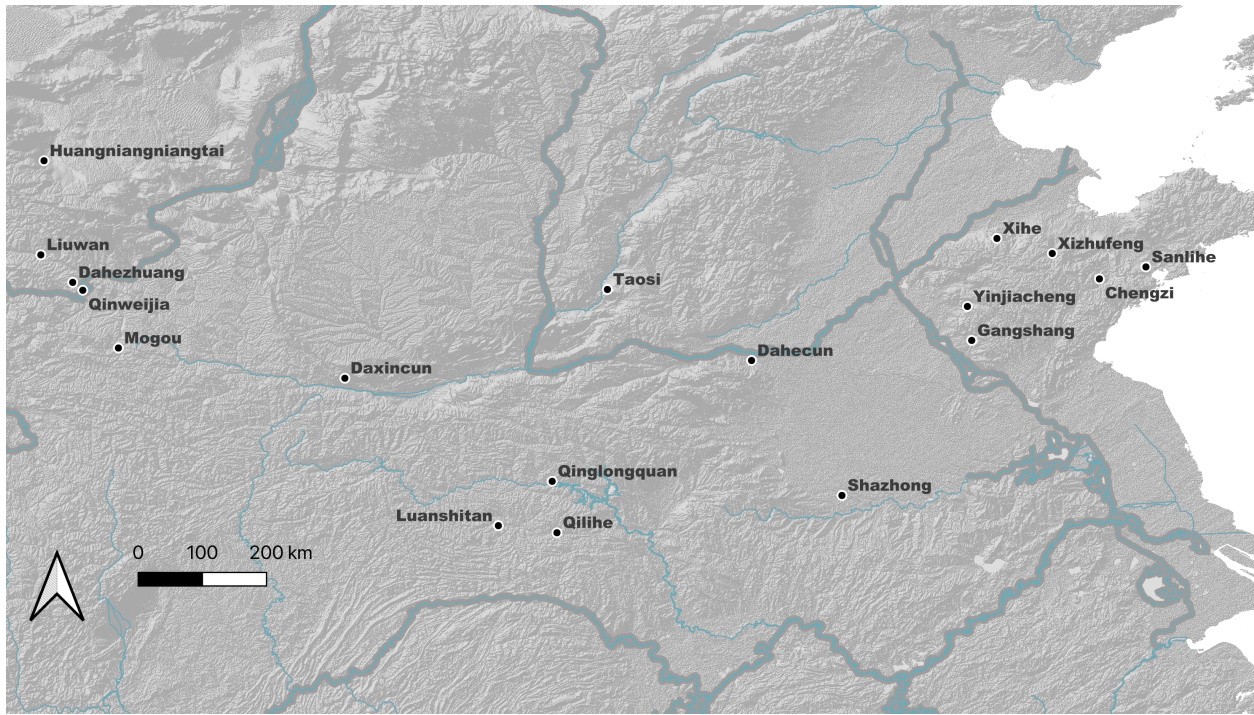


**Figure 18: Examples of Late Neolithic mortuary mandibles**  
 Top to bottom: Huangshan M77 and connected pit (Henansheng & Nanyangshi 2022, 18), Lingyanghe M17 (Shandongsheng et al. 1987, 78)

Mandibles and bone music through the Longshan period, ca. 2300–1800 BC (fig. 19, table 4)

During the end of the third through the beginning of the second millennium BC (the Longshan/late Qijia period), the geographic center of mortuary mandibles shifts back north towards the middle and upper reaches of the Yellow River valley. In stark contrast with the previous flourishing of the practice in the Qujialing culture, and probably due to collapse of major cultural zones along Yangzi (C. Zhang 1997), mandible burial is only observable at a few sites along the Han river in Hubei. A new cluster emerges in the cemeteries of the Qijia culture at Dahezhuang and Qinweijia (Zhongguo 1974; 1975), extending as far north as Huangniangniangtai, also in Gansu (Gansusheng 1978). In addition to early metal objects such as knives, axes, and bodily ornaments, these highland sites have yielded early zooarchaeological evidence of domesticated sheep, cows, and horses, brought into China from the steppe. At Dahezhuang-Qinweijia, both pig and sheep mandibles were included in tombs, as many as 68 (Qinweijia M6) and as few as 1 per tomb. M34 at Qinweijia contained 36 half mandibles; sheep mandibles were present in M14 (set of 6) and M27 (set of 8) at Dahezhuang, demonstrating the diversity and flexibility of mandible use, especially beyond the central plains throughout Chinese prehistory. As Li Min notes regarding the presence of both pigs and sheep mandibles, “no burials at the cemetery contained both animals. The mutually exclusive distribution of sheep and pig mandibles in the Dahezhuang-Qinweijia cemetery seems to indicate the maintenance of a cultural boundary, at least in mortuary syntax, within the agropastoral community” (2018, 101).





**Figure 19: Map of mortuary mandibles, Longshan Period, ca. 2300–1800 BC**

Although mandibles are the only extant objects potentially connected to Chinese prehistoric musical traditions in the mortuary assemblages of Qijia highland sites, the musical innovations of the Shimao and Taosi Longshan culture – evidenced both within tombs and beyond – are more complex. As a summary of other relevant bone musical instruments in the region: mandibles have not been excavated at Shimao to my knowledge, but the bone jaw harps found at the palatial terrace indicate that bone was employed as an elite musical material. Longshan bone jaw harps have all been found in contexts of discard, none in cemeteries of the major proto-urban centers of the period so far.<sup>18</sup> Examples of bone jaw harps from the Longshan

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<sup>18</sup> One bone jaw harp has been found in the grave of a young woman (M14) in a later, Upper Xiajiadian cemetery in Chifeng, initially misinterpreted as a weaving shuttle (Zhongguo 1974). See plate 4 of the report for a picture of the instrument. For detailed summaries of excavated East Asian jaw harps (in Japanese), see the “Excavated Asian jaw harp checklists” compiled by Leo Tadagawa (Tadagawa 2016; 2017; 2018; 2020; 2021; 2022a; 2022b).

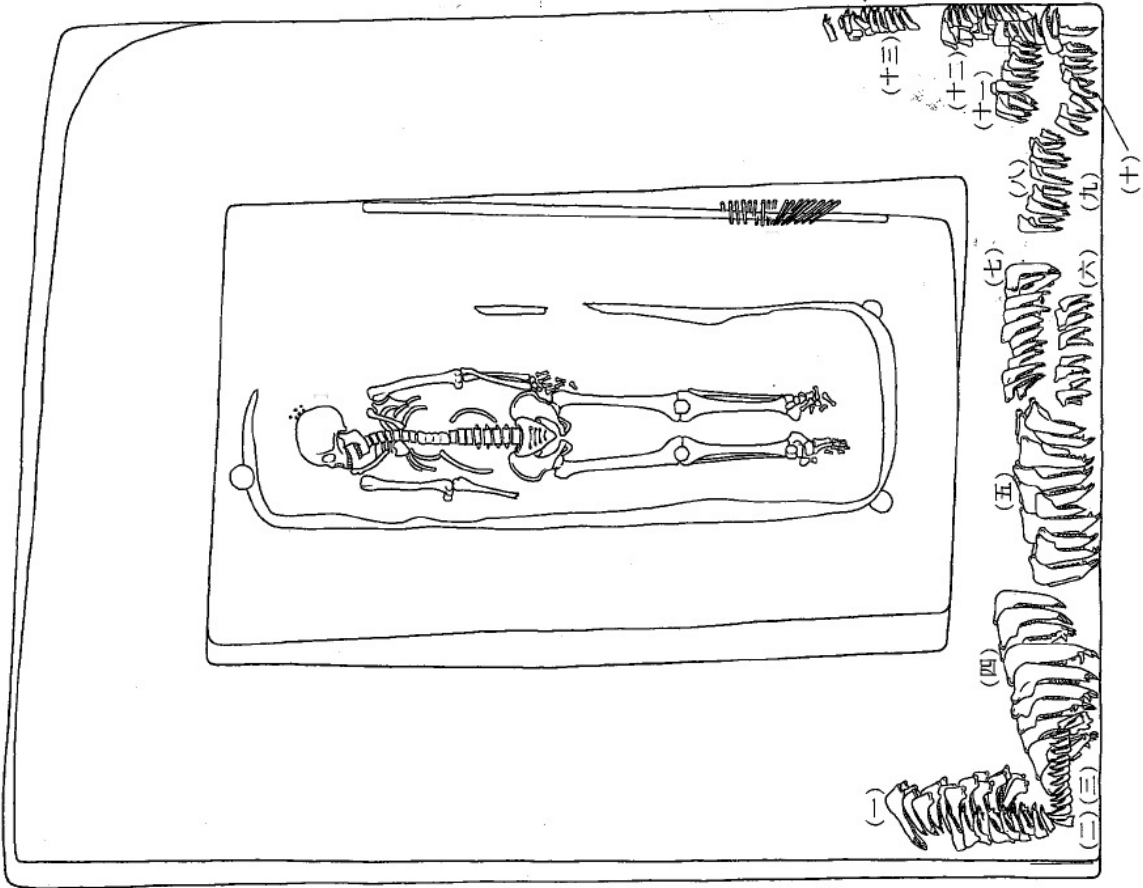
period all date to approximately 2000 BC: at Taosi, one bone jaw harp was excavated from a well (Zhongguo 2018, 232); at Shimao, 19 jaw harps were excavated from a discard pile along the supporting walls and gate of the palatial terrace and 2 from the north side of the palatial terrace gate, all probably made from cow rib or femur (Z. Sun 2020).<sup>19</sup>

As will be discussed in Chapter 3, the spread of metallurgy and stone quarrying would transform Chinese musical practice and replace the sounds of bone, which gradually disappeared from the elite ritual soundscape. At Taosi (ca. 2300-1800 BC), although 562 pig mandibles are found throughout 34 graves, all are mid- or lower tier tombs. Mandibles are never associated with the highest status burials containing musical instruments such as stone chimes and alligator-skin drums (Zhongguo 2015; Sun 2017, 85). M2200 does deserve special mention, however; considered mid-tier, it has the largest area of all Taosi tombs. While M2200 contained no pottery, excavators found signs of a decomposed wood coffin, a pole with bone arrowheads, and 132 pig mandibles, grouped in 13 distinct sets on a raised *ercengtai* platform (Zhongguo & Shanxisheng 2015; fig. 20). It appears that at Taosi, pig mandible burial may either have been seen as a foreign practice or a secondary indicator of status. This shift did not occur uniformly throughout the Longshan world, however. In Shandong Longshan sites like Yinjiacheng, pig mandibles are still found in high-level tombs containing many other burial goods, implying that during the

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<sup>19</sup> In *Jew's Harps in European Archaeology*, Gjermund Kolltveit provides the following definition: "The jew's harp is a mouth-resonated musical instrument consisting of an elastic lamella (tongue, spring) which is either joined to, or part of, a frame. The sound is produced by the vibration of the lamella between the two parallel arms of the frame. . . . The articulation and the amplifying of tones are complicated processes that involve the player's oral cavity, tongue, cranium, throat, and stomach. The lamella has one fundamental, and only the corresponding overtones (partials) can be used to play melodies. This is analogous to other overtone instruments, such as the mouth bow. With the jew's harp the fundamental serves as a drone" (2006, 3).

Longshan period in Shandong, associations between bone and power may have remained strong for some time (Shandong 1990).



**Figure 20: Longshan mandible burial: Taosi M2200**  
(Zhongguo & Shanxisheng 2015, 486)



Site	Date	# Mortuary Mandibles	Tomb(s)
Dahezhuang-Qinweijia, Yongjing, Gansu	Late 3rd – early 2 <sup>nd</sup> mil. BC	579+ (pig, sheep)	58
Taosi, Xiangfen, Shanxi	Late 3rd – early 2 <sup>nd</sup> mil. BC	562	34
Daxincun, Fengxiang, Shaanxi	Late 3rd – early 2 <sup>nd</sup> mil. BC	10	1
Mogou, Lintan, Gansu	Late 3rd – early 2 <sup>nd</sup> mil. BC	?	?
Huangniangniangtai, Wuwei, Gansu	Late 3rd – early 2 <sup>nd</sup> mil. BC	34	15
Liuwan, Ledu, Gansu	Late 3rd – early 2 <sup>nd</sup> mil. BC	1	1
Yinjiacheng, Sishui, Shandong	Late 3rd – early 2 <sup>nd</sup> mil. BC	236	7
Sanlihe, Jiaoxian, Shandong	Late 3rd – early 2 <sup>nd</sup> mil. BC	67	19
Chengzi, Zhucheng, Shandong	Late 3rd – early 2 <sup>nd</sup> mil. BC	37	9
Shazhong, Huaibin, Henan	Late 3rd – early 2 <sup>nd</sup> mil. BC	10	1
Gangshang, Tengxian, Shandong	Late 3rd – early 2 <sup>nd</sup> mil. BC	3	3
Xizhufeng, Linqiu, Shandong	Late 3rd – early 2 <sup>nd</sup> mil. BC	2	1
Xihe, Zhangqiu, Shandong	Late 3rd – early 2 <sup>nd</sup> mil. BC	1	1
Dahecun, Zhengzhou, Henan	Late 3rd – early 2 <sup>nd</sup> mil. BC	1	1
Qinglongquan, Yunxian, Hubei	Late 3rd – early 2 <sup>nd</sup> mil. BC	44	4
Qilihe, Fangxian, Hubei	Late 3rd – early 2 <sup>nd</sup> mil. BC	18	11
Luanshitan, Junxian, Hubei	Late 3rd – early 2 <sup>nd</sup> mil. BC	7	2

**Table 4: Mortuary mandibles, Longshan period, ca. 2300–1800 BC**

## Conclusions

Mandibles were not likely viewed by the diverse prehistoric Chinese cultures that used them as “musical instruments” in the highly specific sense by which we now might define, say, a violin. The purpose of interpreting mandibles as participants in soundscapes of life and death across Chinese prehistory is, rather, to reorient discussion towards aurality. It is natural enough for Western and even modern East Asian anthropologists and archeologists to recognize flutes, panpipes, and drums due to the presence of similar instruments in more familiar traditions. Objects without clear analogs in the context of the anthropologist – and those the equivalents of which are considered lowbrow – are generally less well understood and implied to have

functioned through a visual system of meaning.<sup>20</sup> Allowing mandibles to speak for themselves through re-interpretation of ethnographic evidence opens a realm of sensory possibilities that may shed light on, or at least expand the range of interpretations of, prehistoric Chinese materials.

Reasons for burying mandibles with the dead no doubt shifted across the vast cultural, chronological, and geographic expanse of prehistoric China, developing within a broader umbrella of animal bone use and ritualization that eventually paved the way for China's earliest oracle bone logographic traditions (ca. 1250 BC). It is uncontroversial to state that bone musical instruments were an essential part of elite ritual practice and mortuary assemblages of Jiahu and Dawenkou; if mandibles are included in this statement, the chronological and geographic range of bone music expands considerably, creating a more direct connection between ritual use of bone in the Neolithic and later Bronze Age. Beginning in the Huai river valley at the early Neolithic site of Jiahu (ca. 7000 - 5500 BC) extending into the Beixin-Dawenkou culture (ca. 4300-2500), flourishing throughout the Qujialing culture of the Yangzi river valley (ca. 3400-2600), and finally waning through the highland sites of the Longshan (ca. 2300-1800), animal mandibles survive in the archaeological record as China's oldest known prestige grave goods and musical instruments.

The sonic dimension emphasized in this analysis is not mutually exclusive with previous interpretations, rather an elaboration of how mandibles may have signified wealth, status, and power beyond merely through "feasting." The data above, interpreted alongside ethnographic

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<sup>20</sup> One exception to this tendency in the Sinological case is Arthur C. Moule's detailed account of late Qing musical instruments, titled *A List of the Musical and Other Sound-Producing Instruments of the Chinese* (1908). Mandibles are not included, but (metal) jaw harps are (47).

evidence, suggests that mandibles served as mouthpieces of prestige through a complex set of sensory systems. Throughout the early Neolithic, mandibles are always interred singly or as pairs, placed relatively close to the bodies of occupants or directly at their feet, suggesting a certain level of intimacy – perhaps even that they were “played” by the occupant, as the *quijada* has been played throughout the modern history of the Americas. The hold and playing methods of the *quijada*, as with many folk instruments, are highly varied. One should acknowledge that these American donkey, horse, and mule jawbones are long and narrow, allowing for an easier hand hold with many large teeth, potentially making them more effective as directly struck and shaken percussion instruments. Pig mandibles are conversely lighter and easier to hang. These claims could also be tested through use-wear analysis to observe evidence of the instruments having been played as scrapers, although it is unlikely that use as rattles would leave visible marks.

By the Dawenkou period, the presence of large mandible sets in tombs indicates that they were collected in multiples during or even beyond an occupant’s lifetime, certainly too many to hold at once. Beginning as early as the late 5<sup>th</sup> millennium BC, mandibles may therefore have been strung up as a synesthetic architectural feature, not unlike windchimes in doorways, in public spaces, or even on drums as they have been throughout Southeast Asia and Oceania. Qujialing culture cemeteries present cases of mandible collection over hundreds of years (Baligang) and, potentially, mass pig sacrifice events. In the case of Huangshan M77, the 400 mandibles associated with the tomb may have been suspended laterally or vertically near a communal performance space before entering their final archaeological contexts, as seen in Layard’s fieldwork on Malekula (figs. 10, 11). The sounds of such a slaughter must have been harrowing indeed; in her ethnography of the Kaulong of New Britain in Papua New Guinea (*To*

*Sing with Pigs is Human*), Jane Goodale recalls “the agonizing human quality of the cry of a sacrificial pig being speared” at all-night *singsing* ceremonies (Goodale 1995, 5). Not exclusively a means by which individuals displayed wealth or power, pig mandibles may have conjured rich, multi-sensory associations, directly involved in or adjacent to musical arenas, serving as sensory triggers of the sounds of sacrifice. In this capacity, suspended pig mandibles may even have prefigured the suspension and interment of stone chimes and bells during subsequent millennia of the Chinese Bronze Age. Whether or not they directly prefigure the music of the Shang and Zhou, mandibles and mandible sets participated in cyclical soundscapes of nourishment and violence, permeating all aspects of life from eating to dying. If they were in fact used for music before entering tombs, pig mandible sets are by far the most common sound maker present across the cultures of both the Yellow and Yangzi River valleys in prehistoric China.

## Chapter 3: Skin, Stone, and Earth – The “Taosi Trio” and the Tomb as Stage in Central China

华山玫瑰燕山龙，  
大青山下罍与瓮。  
汾河湾旁磬与鼓，  
夏商周及晋文公

Mount Hua Roses, Yan Range Dragons  
Daqing Mountain Goblets, Jars  
Fen River Valley Drums and Chimes  
Xia Shang Zhou, Duke Wen of Jin

Su Bingqi, Ode to Jin Culture (*Jinwenhua song*), 1985<sup>21</sup>

### Introduction

The previous chapter shows that bone instruments were central to mortuary assemblages of cultures within the Chinese prehistoric interaction sphere from as early as the seventh century BC. Earthenware drums of the Majiayao (ca. 3300-2500 BC) in the upper Yellow River valley and an alligator-skin drum excavated from a late Dawenkou tomb (ca. 3000-2600 BC; Dawenkou M10) in costal Shandong serve as further examples of the cross-regional, systematic nature of elite musical instrument entombment across Chinese prehistory, as carried into the first half of the third century BC.<sup>22</sup> In addition to the fact that all these early instruments were

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<sup>21</sup> For an annotated translation:

The [Miaodigou painted pottery figural] roses of Mount Hua, The [Hongshan jade] dragons of Mount Yan  
The *jia* and *weng* [pottery vessels] at the foothills of Mount Daqing,  
The [Taosi grave good] chimes and drums of Fen River shores,  
[represent the material culture foundation of the] Xia, Shang, Zhou [dynasties], and Duke Wen of [the Spring and Autumn period state] Jin.

<sup>22</sup> There are many article-length studies of Neolithic drums in Chinese (Fei 2009; T. Gao 1991; Yi 2001; S. Zhao 1993; Zheng 2022; G. Chen 1991). Bo Lawergren provides a survey of in English (2006), as does Liu Li of alligator-skin drums in her study of Longshan mortuary ritual (L. Liu 1996).

excavated from cemeteries, a striking common denominator emerges across millennia: they are either closely associated with the body of the occupant or themselves made of animal body byproducts. This highlights the corporeality of musical performance leading up to the Bronze Age, suggesting that “music” first emanated from a body and its movements.<sup>23</sup> Not until the Longshan period (ca. 2300-1800 BC) do percussive ensembles consisting of multiple, large instruments made of diverse materials – instruments likely requiring several, stationary musicians to be played at once – appear in the highest-level tombs of the early phase of the cemetery at Taosi in Xiangfen, Shanxi. This suggests that major shifts had occurred in conceptions of music, materiality, physicality, and political authority during the formation of the early Taosi culture. The “Taosi trio” of 1) stone chimes, 2) wood-frame alligator-skin drums (evidenced by the discovery of osteoderms in and around the remains of the frames), and 3) earthenware drums, excavated as sets from multiple elite tombs, are the earliest surviving multi-material musical ensembles in Asia. A single copper bell found just below the pelvis of an occupant of a late phase tomb is also the earliest hollow-cast metal object excavated in China, one of four metal objects found at the site, although no evidence of local metallurgy has yet been discovered at Taosi (J. Gao and He 2014). Beyond serving as markers of occupant status, Taosi musical instruments also provide important information about the foundations of East Asian traditions of musical thought and performance.

A.C. Graham demonstrates that textual evidence of the correlative thinking undergirding the development of the *ba yin*, or “eight sonorous substances,” appears in the late first

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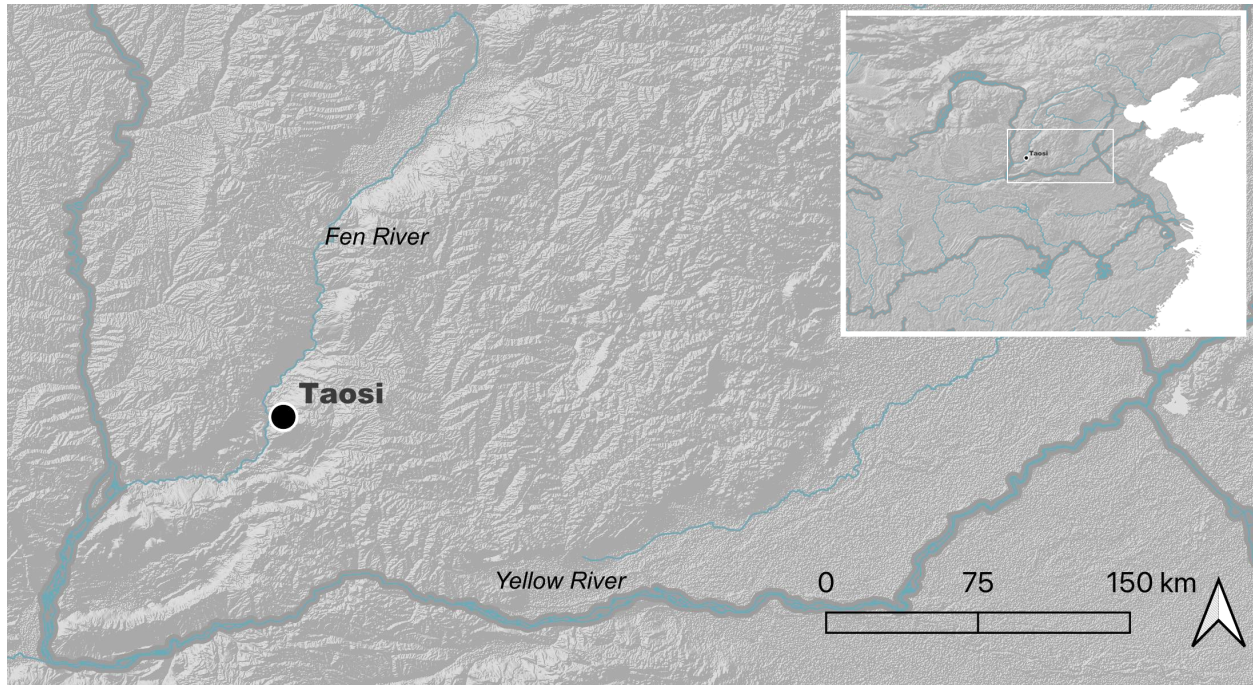
<sup>23</sup> See “Conclusions” to the dissertation for further discussion of what I call this “physiomusical” phase in the music of East Asian prehistory.

millennium BC (1989). As a case study in whether material culture might also be used to “excavate” prehistoric musical thought, in this chapter I hypothesize that:

- 1) One may interpret musical thought and practice by analyzing musical instrument assemblages without either contemporaneous text or measurable pitches. In the present case, foundations for a materiality-based framework of musical thought (Chapter 1) may be visible in the elite tombs of Taosi; and
- 2) The inclusion of multiple large musical instruments in an assemblage indicates the existence of ensemble music, likely played by a group of specialist musicians. Instruments’ positions may also reveal facts about the spatial realities of musical performance. At Taosi, the position of musical instruments at the foot of the tomb chamber, within the “sightline” of the occupant, may mirror the existence of a stage.

In Chinese contexts through the later Bronze Age and beyond (Lin 2012; Lai 2006; 2015; H. Wu 2015; von Falkenhausen 2004; Thote 2009; Hong 2017), the tomb serves as an elaborate theater for existence in the afterlife. The musical instrument sets at Taosi constitute an early reflection, even a continuation of performances coordinated by and for elite audiences during their earthly existences. Although I focus on individual instrument types diachronically in other chapters, the albeit heavily disturbed tombs of Taosi present a unique opportunity to analyze the origins of ensemble performance within the Chinese ritual-musical system. Below, I summarize all tombs containing musical instruments at Taosi, with some reference to their implications for later traditions at Erlitou.

## Background: Taosi and the Formation of the Chinese State or Proto-State

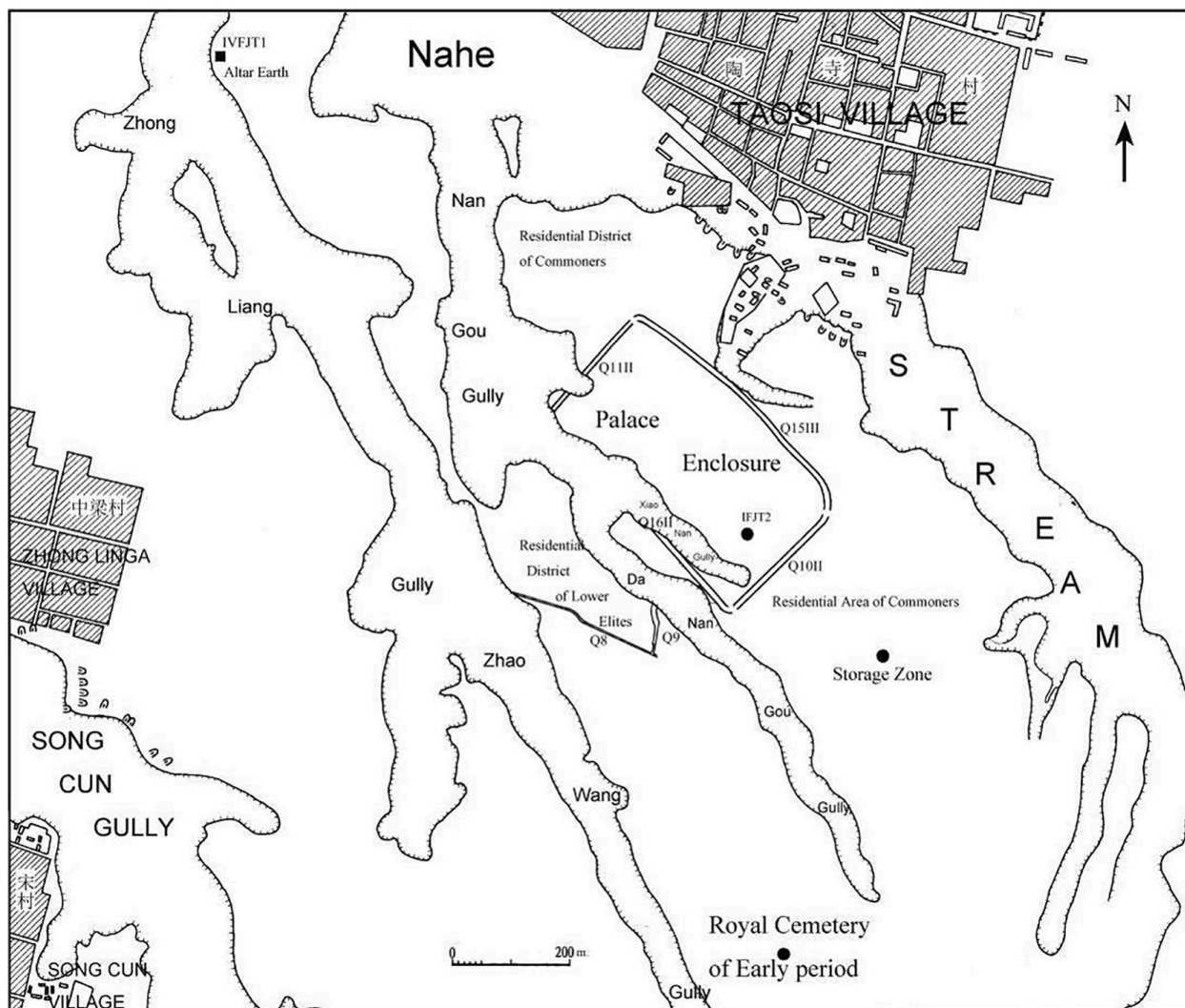


**Figure 21: Map of Taosi**

The major proto-urban center of Taosi is situated in southern Shanxi, in the upper reaches of the Jinnan Basin (fig. 21). Situated in the northern part of China's central plains, the over 300 hectare site served as a gateway into China's agricultural heartland from the steppe, connected to the northern bends of the Yellow River through the Fen river tributary. Foxtail millet was the main cultivar (Lai 2015; 2006; Hung 2015; Lin 2012), and domesticated pigs, sheep, and cattle were intensively exploited (Brunson, He, and Dai 2016). Alongside the more recently discovered, contemporaneous stone walled site of Shimao in the Ordos desert to the north, Taosi was a major hub of political and cultural activity during the Longshan period, around which the development of Chinese civilization cohered after the collapse of Liangzhu in the south (M. Li 2019; C. Zhang 1997).



The site has been continuously excavated by the Institute of Archaeology at the Chinese Academy of Social Sciences since 1978. From the beginning, many have interpreted Taosi as the capital of the Xia dynasty, led by geographic clues in historical texts. Although it remains uncertain whether Taosi in fact represents the ancient Xia capital, the Taosi culture clearly rose and fell from the end of the third to the beginnings of the second millennium BC, displaying all the characteristics of an important capital locus over the course of what has been interpreted as three distinct phases. Through the early phase (2300-2100 BC), residential areas for both elites and commoners were built, and a dense cemetery was established in the southeastern corner; a palace in the northeast portion of the city was protected by a rammed earth wall (fig. 22). By the middle phase (2100-2000), craft workshops, a palatial compound, and storage areas are evident, as well as what has been interpreted as an astronomical observatory. A rammed earth wall was built to enclose the site. In the final phase (2000-1800), residential areas dissipated, and large portions of the site were either abandoned or leveled, with evidence of violence in human remains. (Zhongguo and Linfen 1980; 1983; 1986; Zhongguo, Shanxisheng, and Linfenshi 2003; 2004; 2005; 2007; 2008; 2013; 2015b; 2015a; 2015c).



**Figure 22: Layout of Taosi, early phase**  
(He 2018, fig. 1)

Many Chinese archaeologists now consider the later site of Erlitou (ca. 1900-1600) in the Luoyang basin at Yanshi, Henan, to be China’s first state-level society (L. Liu and Chen 2003; 2012; L. Liu 1996). Director of Taosi excavations He Nu has argued that the Taosi culture and its features also present evidence of distinct levels of hierarchy characteristic of a state or “proto-state” (2009; 2011; 2013; 2015; 2018). While this tension is to some extent imbedded in the competitive consequences of what has been called the “regionalist paradigm” of Chinese archaeology (von Falkenhausen 1995), I aim to show below that from a music archaeological

perspective, one cannot ignore the fact that the high level tombs of the early phase of Taosi emphasize the role of occupant not as performer, but as elite audience – and this is not the case for what we know regarding either late phase Taosi tombs or the musical material culture of Erlitou (Zhongguo 2014). As I will discuss at the conclusion to this chapter, although bronze *ling* bells discovered singly in Taosi M3296 and several Erlitou tombs were precursors to the bells of Shang-Zhou tradition, they are found closely associated with occupants’ bodies, indicating personal use and different notions of elite musical physicality perhaps more closely related to traditions that accompanied the entrance of metallurgy from the steppe. Any indications of ensembles have not yet been found at Erlitou, making musical assemblages at Taosi a more compelling starting point for tracing the beginnings of the multiplayer theatricality undergirding the East Asian ritual orchestra.

### Existing Approaches to the Music of Taosi

In the poem quoted at the beginning of this chapter, Su Bingqi<sup>24</sup> positions the percussive ensembles of Taosi in a civilizational trajectory leading directly into the late Bronze Age. Su clarifies that he wrote these verses because he saw the emergence of stone chimes and alligator-skin drums *together* as evidence of the site’s crucial position in the development of Chinese civilization, resonant with notions of “harmony” also foundational to musical concepts of later millennia (cf. DeWoskin 1982; Brindley 2012):

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<sup>24</sup> Su Bingqi’s broad-minded thinking enabled the expansion of Montelian typology to archaeological subcultures and the outlining of a model of “regional systems and local cultural series” (*quxi leixing*) in Chinese prehistory.

Chimestones and alligator-skin drums were assembled as sets, and when performed they would have harmonized. One should not see these as everyday musical instruments but as high-level musical instruments lining ancestral halls, stately ritual implements. How could a simple village have boasted such treasures?” (Su 1994, 194 *trans.*; also see Gao and Zhang 2007).

Of course, instruments “harmonizing” generally also requires more than one musician harmonizing (or, say, playing polyphonically), but as texts describing and figural depictions of human musicians do not appear until much later in the Bronze Age in China (see also Chapter 4), we are left to imagine what Taosi performances could have looked like. Because of the discovery of China’s earliest metal bell and stone chimes at Taosi – both also instruments integral to Zhou ritual ensembles – there is general consensus that the music of Taosi was ancestral to that of the Zhou. Understandably, this consensus usually comes from comments such as Su Bingqi’s above, or from mentions of Taosi in studies of the musical systems of later periods (J. Fang 2007, 42-43; von Falkenhausen 1988, 79-82). In a discussion of Taosi musical elaboration, Li Min also ventures that “to the ears of a Zhou elite, the music played on this instrument set would seem archaic but not completely incomprehensible” (2018, 126). But dedicated treatments of either Neolithic or Longshan music focus by and large on individual instrument types (Shen 2012; Zhongguo, Shanxisheng, and Zhongguo Yishu Yanjiuyuan 2007; Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 3, 1329-1335), with an exception in a short study by Zhang Lei, in which she argues that alligator-skin drums and stone chimes became a fixed set during at Taosi and served as status markers for the occupant (2019). A section of the 2015 excavation report also lists pitch measurements of the stone chimes and a *xun* found in a settlement context (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 3, 1336-1344). Focus on instrument type and pitch measurements, rather than the broader contexts of performance or musical thought, perhaps derives from the fact that Taosi has been excavated from the late twentieth century into the twenty-first, throughout the decades of which most Chinese music archaeologists have been

enthusiastic about integrating East Asian musical instruments into Western organological frameworks. References to the *ba yin* or *jinshi zhi sheng* “sounds of metal and stone” notion from later texts are sometimes made in the studies referenced above, although metal and stone instruments are never actually found together at Taosi. In other words, there is nothing new about pointing out that the contents of Taosi tombs prefigure later musical instruments, or in connecting these instruments to respective categories as sonorous substances. We can now expand our assessment of the instruments to reconstructing the embodied realities of performance, and how such performance contexts may have shaped the development of Chinese musical thought and practice.

Detailed information about Taosi instruments is contained across different sections of the excavation reports and in diachronic studies of individual instruments or related objects: recently, Deng Lingling has created *ling* bell typologies, referencing both the copper Taosi bell and pottery “prototypes,” as well as analysis of subsequent Erlitou and even later bronze age examples (Deng 2018; 2019; 2020; 2021). Fang Xueyang has also recently published a monograph based on her dissertation about stone chimes, with some discussion of Taosi. Her archaeoacoustic approach predominantly consists of pitch measurements of later Zhou tuned sets (2019; 2022). Gao Jiangtao’s analysis of Longshan period alligator-skin osteoderm remains excavated in the Yellow River valley is an excellent resource for tracing the development of the alligator-skin drum, containing the important caveat that undisturbed contexts where fewer than 10 osteoderms have been discovered can also imply the presence of an alligator-skin that would have not have been large enough to be used as a drumskin (2020).

## Note on Interpretation of Taosi Musical Instruments as Musical Instruments

The “Taosi trio” consists of chimes and two kinds of drums, one of which is an earthenware drum that looks like a large vessel with an extended neck (see figs. 24, 25, 27, 30, 32). Chinese music archaeologist Fang Jianjun has expressed doubt that these earthenware “drums” were drums, raising the unwieldy size of some examples and lack of readily available ethnographic analogs (1989). In the report, excavators also vacillate between calling the earthenware drums “earthenware drums” (*taogu*) and “strange-form pottery objects” (*yixing taoqi*). They also express uncertainty over whether or not the small copper bell should be called a bell (*tongling*) or, more cautiously, a “bell-shaped object” (*lingxing qi*) (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 667). These doubts are warranted. Due to the absence of contemporaneous writing or figural depiction, however, it is equally impossible to know with certainty whether Taosi stone chimes were truly used as chimes, or if the alligator-skin drums were drums either. The latter two instruments have such strong equivalents in later Zhou tradition that their identification seems unimpugnable – but one wonders if their function would be so obvious if similar examples were not prevalent in much later tombs, or if the word “alligator-skin drum” (*tuogu* 鼉鼓) had not appeared in Zhou texts.

In the previous chapter, I examine ethnographic analogs for mortuary mandibles; this proves necessary in a scholarly context where no suggestion that an object could be a musical instrument has been made. In the present case I refrain from weighing down the analysis too heavily with ethnography, although it does seem relevant to at least point to the Igbo (Ibo) and Ibibio cultures’ *udu* clay pot drum as a potential analog for Taosi earthenware drums, although known examples of the *udu* are relatively small, closed on one end, and played in the lap (Blench 1987; Echezona 1963; Euba 1961; Nicklin 1973). Most importantly, the drum is played by

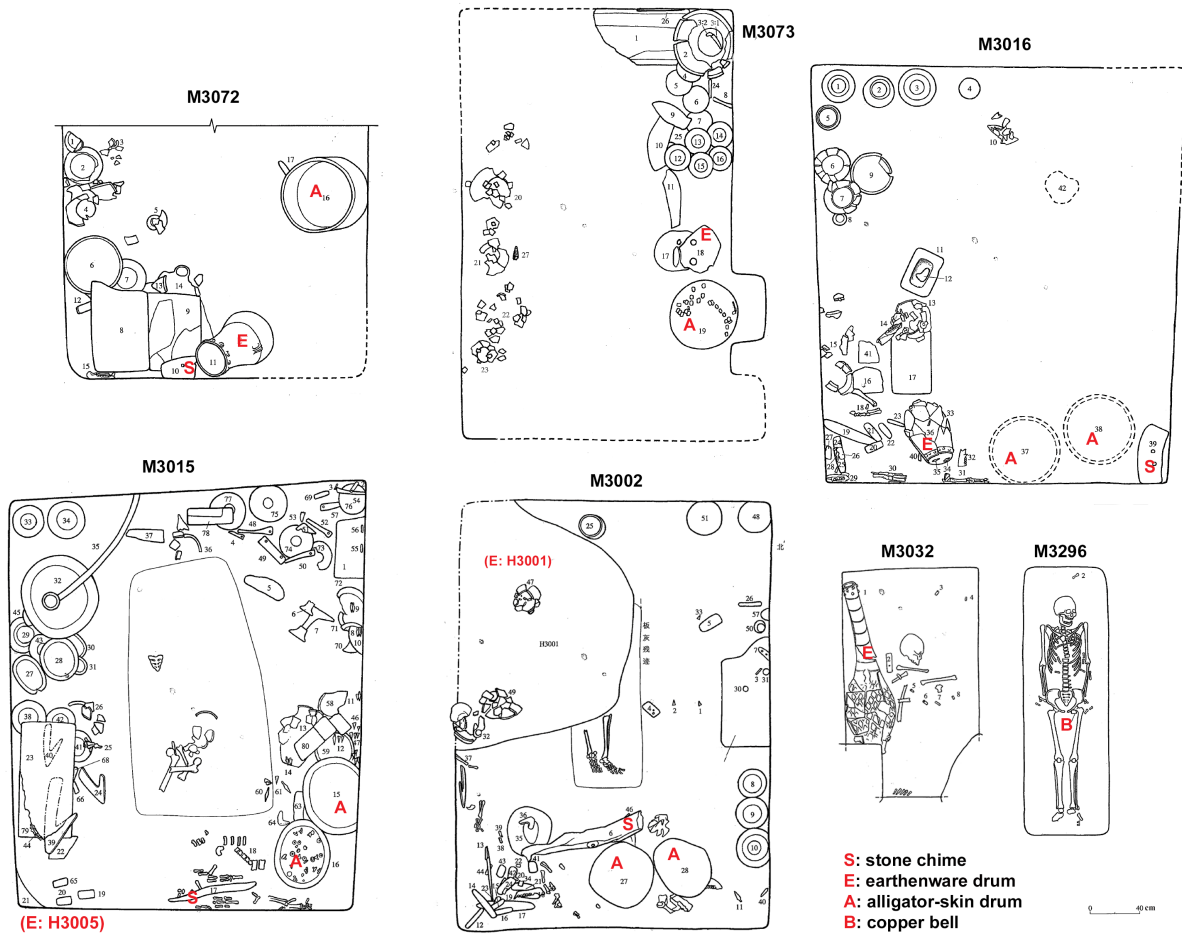
directly striking the body of the pot, often, although not always, without any additional vibrating membrane. The body of the *udu* also contains at least one hole, manipulated by the musician to alter pitch. As Damm also points out regarding the *udu* capacity for pitch variance, “The *udu* also is used for “talking” in the same manner as other drums in Africa. Udemgba [an informant] said, ‘The *udu* is always talking.’ The Ibo have a tonal language, so by playing the rhythms of speech with corresponding tonal relationships available on the instrument, the *udu* can be used to ‘talk’” (2003, 30).

Many doubts can be expressed as to any prehistoric musical instrument’s original function. However, here and elsewhere I make the conscious choice to honor the consensus of the interpretive traditions at hand for the sake of engaging with the subject not only ethnomusicologically and archaeologically, but also discursively. In doing so, one reveals information not only about the objects themselves, but also about importance placed on ancient music in the narrative of any civilization, especially of its beginnings.

### Taosi Tombs with Musical Instruments

The musical instruments excavated from 7 Taosi tombs are: 1) alligator-skin drums, 2) earthenware drums, and 3) stone chimes, in addition to 4) one copper bell, not found with other instruments, and 5) pig mandibles (identified as musical instruments and discussed extensively in the previous chapter, so omitted here). As mentioned, alligator-skin drums, earthenware drums, and stone chimes are often discovered together and adjacent to one another, in five of the site’s most important tombs. Earthenware *ling* bells, one earthenware *xun* ocarina, and one bone jaw harp were scattered throughout Taosi beyond the cemetery, reminders that the instruments found in elite graves represent but one kind of music made in the Taosi culture. As the focus of the

present analysis is the development of mortuary musical ensembles, below I present each tomb that contained musical material culture at the site in detail.



**Figure 23: Overview of Taosi tombs with alligator-skin drums, stone chimes, earthenware drums, and bell**

Tomb	Date	Instruments
M3072	Early Phase	1 alligator-skin drum, 1 stone chime, 1 earthenware drum
M3073	Early Phase	1 alligator-skin drum, 1 earthenware drum
M3016	Early Phase	2 alligator-skin drums, 1 stone chime, 1 earthenware drum
M3015	Early Phase	2 alligator-skin drums, 1 stone chime, 1 earthenware drum
M3002	Early Phase	2 alligator-skin drums, 1 stone chime, 1 earthenware drum
M3032	Early Phase	Earthenware drum
M3296	Late Phase	1 copper bell



**Table 5: Taosi tombs with alligator-skin drums, stone chimes, earthenware drums, and bell**

The cemetery was used continuously throughout Taosi's 500 years of occupation and most tombs at the site were disturbed by later tombs and other features. A total of 1379 tombs were identified, and 78.9% were found to be intersecting with at least one other tomb. Over 96% of tombs contained no pottery, also creating complications for the ways in which hierarchy was determined; excavators ultimately decided that the status of the occupant could only be determined in 770 cases (58.8%), separated into six major socio-hierarchical tiers (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 394). Despite these complications, to the extent that one accepts the argument that tomb area and assemblage size and quality are generally indicative of occupant status, significant disparity is evident: six large tombs at the top tier originally contained hundreds of grave goods each, but over 80% of tombs were small and had either very few or no grave goods at all. Aside from tombs containing pig mandibles, a total of 7 tombs contained musical instruments. Five of these tombs were at the top tier containing the Taosi trio or remnants of it; one relevant tomb was labeled second and another third tier, with a single instrument each. Since the instruments themselves were factors used by the excavators to determine tomb hierarchy, it would be a fallacy of circular logic to impress too much upon the association of certain instruments with tombs of a particular level.

All tombs containing instrument ensembles are from the early, most disturbed phase of the cemetery, above which tombs of later phases were stacked. As a result, the original depth and structure of the early tombs is often either difficult or impossible to determine. Excavators do note that some (especially M3015) could have had *ercengtai* raised platforms (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 441), and it is my suspicion that they did, and that their original assemblages may have been even more elaborate. In sum, what we find in Taosi

tombs can only be cautiously interpreted as representative of Taosi culture musical institutions, but a close reading of what remains reveals some important patterns.

### Taosi Trio Tombs

M3072: Stone chime (1), alligator-skin drum (1), earthenware drum (1) (fig. 24)

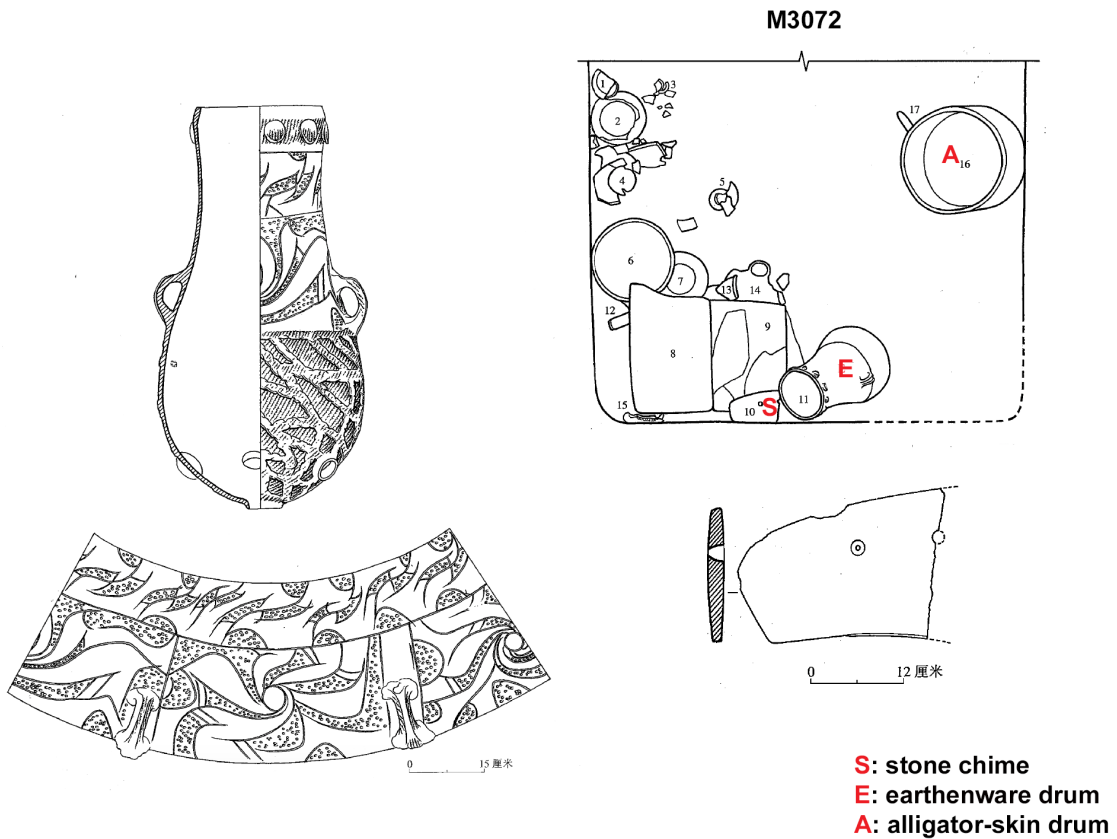


Figure 24: Taosi M3072

M3072 and M3073 (described below) were the most heavily disturbed of the Taosi tombs containing musical ensembles. The central portion of M3072 was cut away by a pit (H3073) and the body of the occupant does not remain. The floor of the tomb pit is 2.8 m. long on the right

side, 2.2 m. on the left, and 2.18 m. wide. Twenty-one objects were recovered, including a dragon-motif painted pottery basin, pottery vessels, stone objects, a pig mandible, and the Taosi trio: one alligator-skin drum, one earthenware drum, and one stone chime (figs. 24, 25).

The stone chime and earthenware drum were excavated directly next to one another, close to a mandible as well. That said, because this tomb was so heavily disturbed and many objects were moved from their original locations, placement of the ensemble is difficult to reconstruct with accuracy. (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 443-444)

The frame of the alligator-skin drum (M3072: 16) was unfortunately too deteriorated to be successfully removed from the tomb. It was 52 cm. high on one side, 32 cm. on the other. The diameter around the base was 50 cm., 54 cm. around at the 30 cm. high mark. Red paint decorated the exterior of the frame, which was 2 cm. thick. Four alligator-skin osteoderms were also present within the frame (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 636).

The earthenware drum (M3072: 11) remains well preserved. The relatively high-fired, grey pottery drum has a stout body, about 1 cm. thick, and a relatively short neck with two handles. The drum is 85.4 cm. high, the diameter of the top opening is 25.6 cm. and that of the belly is 41 cm. A band of 11 flat, circular nobs surrounds the top opening, and there are 4 total circular openings at the instrument's bottom, 3 along the belly and 1 at the base. The drum's belly is decorated with an overlapping rope-motif, the top half with a snake-scale pattern. The report notes that the angled position in which the drum was found may indicate that it could have been played from a suspended position (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 629).

Although only about half of the tomb's andesite stone chime (M3072: 10) remains, excavators note that it is the most finely polished, resonant stone chime at the site (Shen 2012,

201; Zhongguo, Shanxisheng, and Zhongguo Yishu Yanjiuyuan 2007; Zhongguo, Shanxisheng, and Linfenshi 2015c). The body, which was ground completely flat, is 26 cm. long and 12.5-7 cm. high, 1-2 cm. thick. One small hole was drilled through the remaining half, with part of another hole evident where the stone split (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 671).



**Figure 25: Taosi M3072, photo**  
(Zhongguo, Shanxisheng, and Linfenshi 2015c, pl. 154.1)

M3073: Alligator-skin drum (1), earthenware drum (1) (fig. 26)

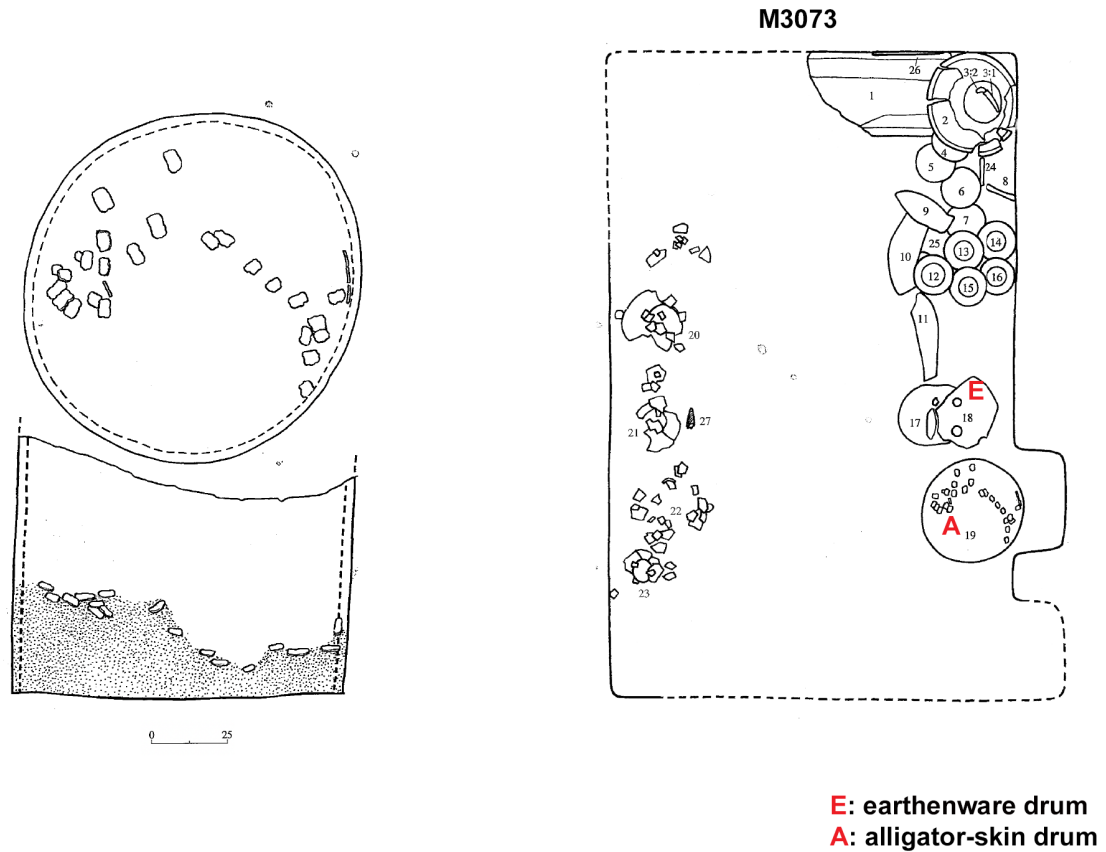


Figure 26: Taosi M3073

Located 2.2 meters from M3072, M3073 was also cut through by a later pit (H3013) in addition to late phase tombs (M3063, M3064). The body of the occupant was not recovered. The tomb pit was likely originally 3.1 meters long, 2 meters wide. Two niches were built into the right side of the foot of the tomb, one of which was destroyed. Thirty-four total grave goods were excavated, including a dragon-motif painted pottery basin and other painted pottery vessels, stone objects, the remains of at least four unidentifiable wood objects, as well as both an earthenware and alligator-skin drum. The alligator-skin drum was excavated from one of the two wall niches (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 445-447; fig. 26).

What remains of the frame of the alligator-skin drum (M3073: 19) is 60 cm. high on one side, 72 cm at its highest point. Wider at the top than at the bottom, the base diameter is 88 cm. but at 60 cm. high, the diameter is 95 cm. The exterior was decorated with bands of red paint and 32 osteoderms were found within the frame. Twelve osteoderms were also discovered in the intersecting pit, although it is difficult to say whether they belonged to the drum that was excavated or, potentially, one that was destroyed (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 636).

The surviving fragments of the green-grey pottery earthenware drum (M3073: 18) were too sparse for the object to be reconstructed, but the pieces were high-fired and indicate that the drum would have originally had the largest diameter of all the Taosi earthenware drums (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 632). The remaining fragments make a clear sound when struck (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 447).

M3016: Alligator-skin drums (2), earthenware drum (1), stone chime (1) (fig. 27)

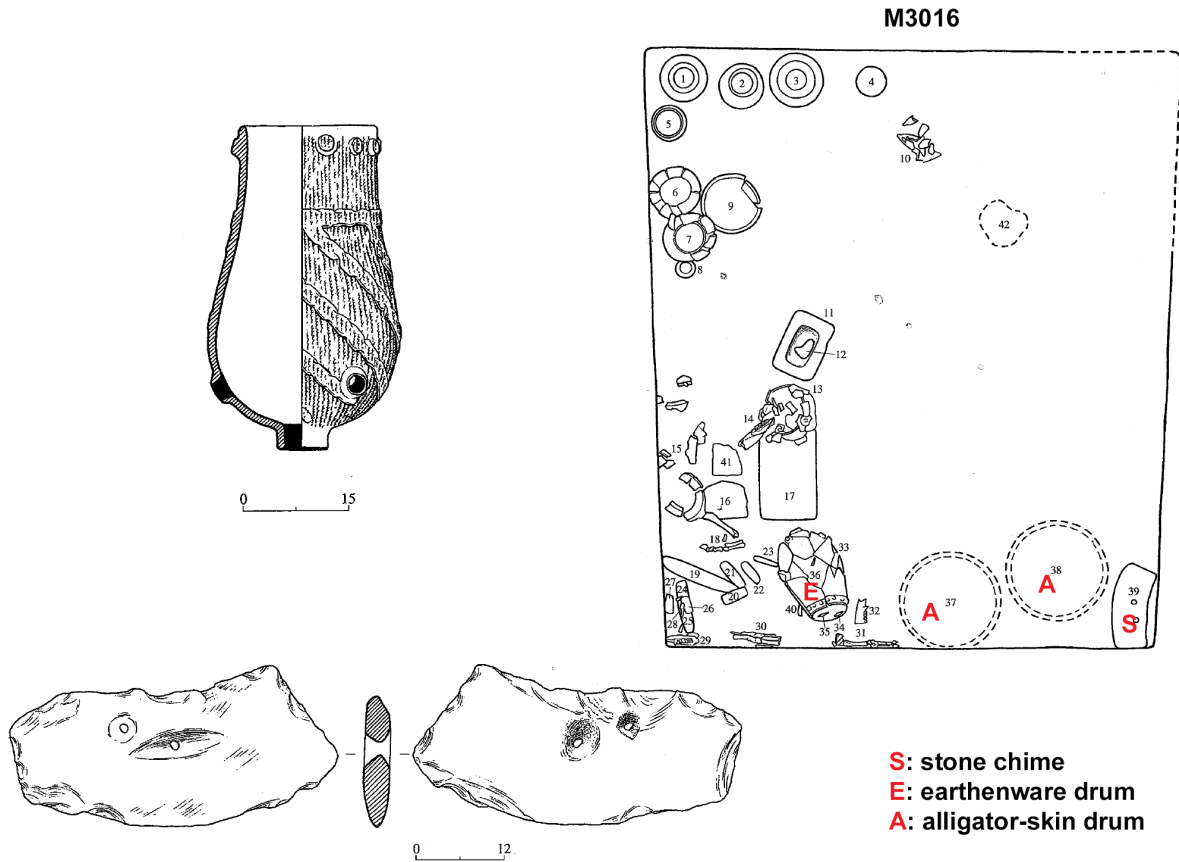


Figure 27: Taosi M3016

The head of a 40-45 year old male was excavated from one of three pits (H3011; also, H3004 and H3008) that cut through the center of M3016, presumably belonging to the occupant. The surviving tomb pit is 2.76 m. wide at the head, 2.52 m. at the bottom, and 3.1 m. long through the center. In addition to pig skeletal components, 35 objects remained in the tomb, including a dragon-motif basin, painted pottery vessels, wood, shell, and stone objects, in addition to the complete Taosi trio: a pair of alligator-skin drums, one earthenware drum, and one stone chime. Fortunately, the section of the tomb containing the musical assemblage was reasonably well preserved. All three drums and the stone chime (in addition to scattered pig bones, including a mandible) were found in proximity to one another at the foot of the chamber.

The chime was to the right of one of the alligator-skin drums (M3016: 38), the earthenware drum to the left (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 448-450; fig. 27).

The frames of the alligator-skin drums (M3016: 37, 38) were too deteriorated to be removed from the tomb. Only circular marks of one drum (M3016:37) survived, 5 cm. of one side of the frame of the other (M3016: 38), the remains of red paint surrounding the bases. The diameter of each was 52 cm. at the base, the walls of the frames about 2 cm. Thirteen osteoderms, presumably once part of the drumskins, were recovered from H3008 (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 636).

The earthenware drum (M3016: 33) is made from relatively low-fired, grey-brown and red pottery. It is short and squat at 45.6 cm. high with a diameter of 18.6 at its top opening, 28 cm. at its widest point. It is both the smallest and only Taosi earthenware drum without handles, decorated with a thick slanted rope motif. Twelve flat, circular nobs surround the top and three circular openings protrude from the bottom of the belly, another at the base (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 630).

The stone chime (M3016: 39) was made of volcanic conglomerate rock. Relatively roughly hewn, the chime is 44 cm. long, 10-19 cm high, and 3.5 cm. thick at the center. Two holes perforate the chime's body. The chime was polished but still shows breakage (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 671).



M3015: Alligator-skin drums (2), earthenware drum (1), stone chime (1) (fig. 28)

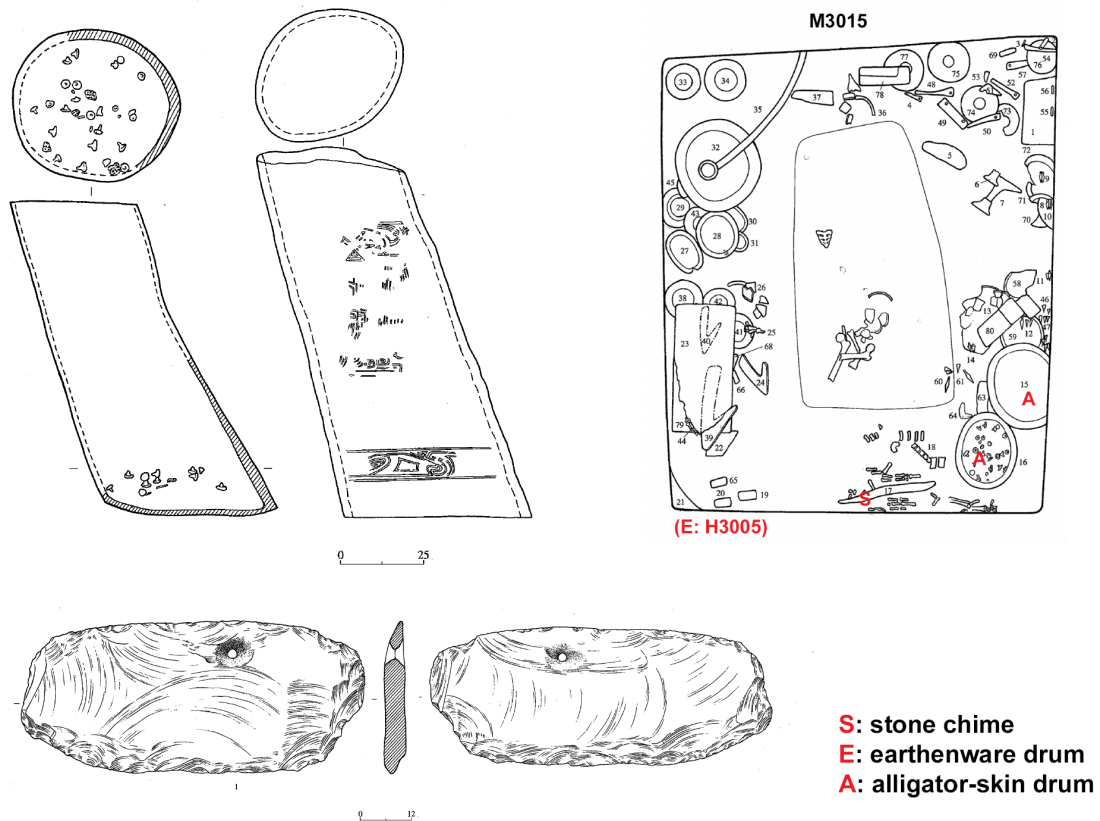


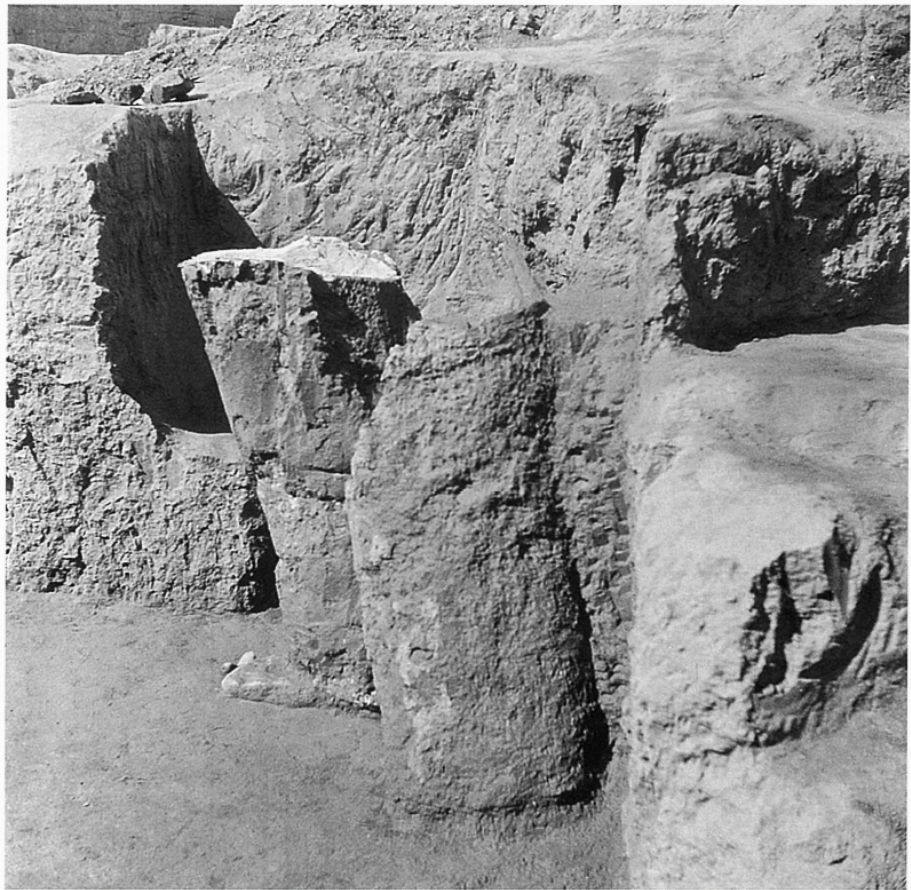
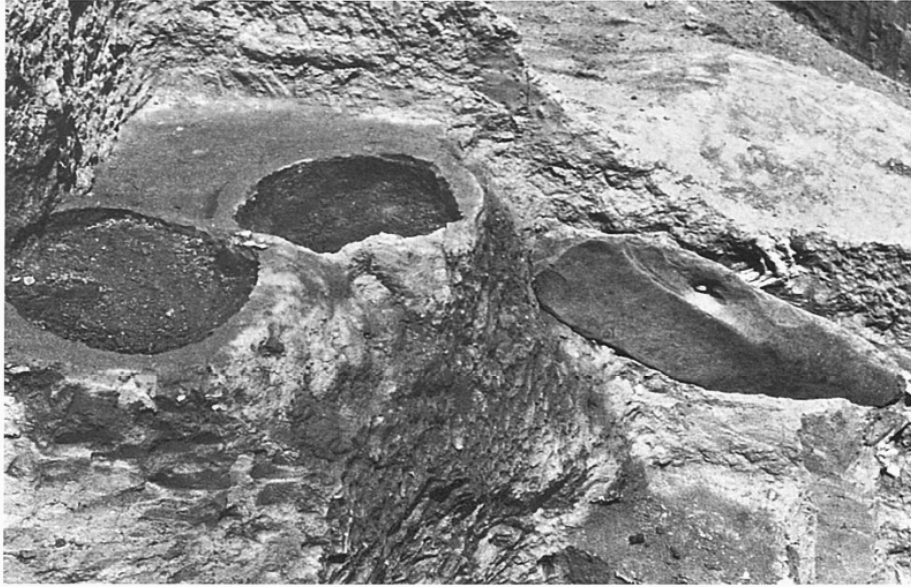
Figure 28: Taosi M3015

Only 1.8 meters away from M3016, M3015 was disturbed by one later tomb (M3001) and two pits (H3005, 3017), but fortunately none of the later features reached the bottom of the pit, and many areas were left relatively well preserved. 2.68 m. wide at its head and 2.5 m. at the foot, the tomb is 3.2 m. long through the center and 2.1 m. deep at its highest wall. The portion of the tomb that would originally have contained the coffin was disturbed by H3005. Most of the body of the occupant does not survive, although a section of the tomb containing remains of a wooden board did yield a cinnabar-covered pelvis, femur, and rib bones, indicating that the occupant was a male approximately 40 years old. Over 200 total objects were excavated: painted pottery, jade, turquoise lacquer, bone, and stone objects were present, as well as the complete

Taosi trio: a pair of alligator-skin drums, one earthenware drum, and one stone chime. The alligator-skin drums and chime were located, as with M3016, in the bottom left-hand corner of the tomb, the chime directly next to one of the drums (M3015: 16), pig bones scattered nearby (figs. 28, 29).

The M3015 alligator-skin drums (M3015: 15, 16) are the most well-preserved examples from the site, although when excavated their original forms were distorted, slanted to one side from pressure. M3015: 15 is 110 cm. high and 56 cm. in diameter at the base, 43 cm. at the top. The walls are 2-3 cm. thick., and the exterior is richly ornamented with abstract designs in red and white paint. Three osteoderms were excavated from inside the frame, 8 from the tomb floor surrounding the drum. M3016:16, which pressed up against M3016:15 and destroyed when M3015 was being removed, was 93 cm. high, with a base diameter of 46-50 cm. and a diameter of 43-49 at the top. The walls ranged in thickness from 1-6 cm. at different points. Twenty-four osteoderms and 29 small black cones, presumed to have been used to help tune the drums, which fell into the frame after the drumskins disintegrated, were excavated from within the frame. M3016:16 originally had a wood base, indicating that the alligator-skin drums at Taosi would only have been covered with membranes on one side. Unlike the alligator-skin drums excavated from other tombs, M3015: 15, 16 and are narrower at the top than at the base (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 637).

Pieces of the brown-pottery earthenware drum from M3015 were recovered from H3005, but there were too few for the object to be reconstructed. The grey hornstone chime (M3015: 17) is 79 cm. long, 32 cm. high, 1-5.5 cm. thick with a single hole. The chime was polished on both sides but shows breakage (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 671).



**Figure 29: Taosi M3019, photo**  
(Zhongguo, Shanxisheng, and Linfenshi 2015c, pl. 159.1-2)

M3002: Alligator-skin drums (2), earthenware drum (1), stone chime (1) (fig. 30)

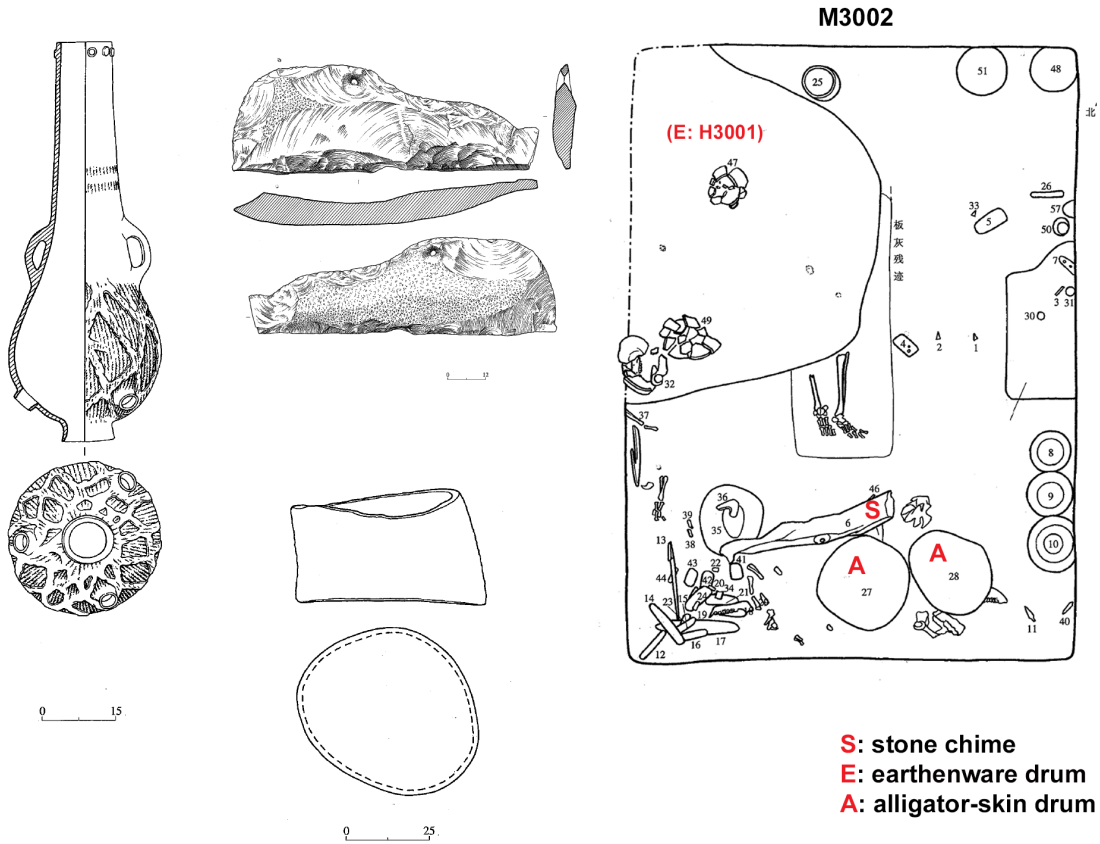


Figure 30: Taosi M3002

M3002 was the earliest excavated of all the Taosi “royal” tombs, discovered in the winter of 1979. The report notes that some objects may have been lost before excavators had gained enough experience to preserve or record them. Located only 1.3 m. from M3015, M3002 was lightly cut at the bottom by M3001 but more severely disturbed by a pit over 10 m. in diameter (H3001), which scooped through the top of the coffin chamber and the head of the tomb. The tomb floor is 3.3 m. long and 2.44 m. wide, 1.5 m. deep. Disintegrated remnants of the coffin board indicate that the chamber was 1.5 m. long, 0.58 m. wide, and covered in a large quantity of cinnabar. The legs and feet of the occupant were preserved in extended supine position, a male



22-24 years old. His remains crucially indicate the general position of other elite occupants. Scattered pig bones and a set of 8 mandibles (the only remaining mandible set of all the elite tombs), in addition to 57 other objects, were excavated, including painted pottery, jade, bone, and stone, and the complete Taosi trio: a pair of alligator-skin drums, one earthenware drum, and one stone chime. The two alligator-skin drums and stone chime were located near one another below the feet of the occupant (figs. 30, 31).

The frames of the alligator-skin drums (M3002: 27, 28) were found distorted, irregularly cylindrical in shape. M3002: 27 is 28 cm. high on one side, 34 cm. high on the other, with a top diameter of 47.5 cm. and a bottom diameter of 47.5-57 cm. The thickness of the walls is unclear. Remains of red paint were scattered around the floor of the drum, and some faint remains of painted decoration are visible on the exterior. A single fragmented osteoderm and 16 small black cones were found within the frame. M3002: 28, which was less well preserved and not recovered from the tomb, was 52-44 cm. in diameter. Fourteen small, black cones were inside the frame (Zhongguo, Shanxisheng, and Linfenshi 2015c, 637).

Although the earthenware drum (M3002: 53) was excavated in fragments from H3001 and its original position is difficult to know, enough pieces remained for it to be reconstructed. Made of relatively low-fired, brown and brown-red pottery, the long and narrow drum is 84.14 cm. high with a top opening 11.4 cm. in diameter and a 31.7 diameter belly, ornamented with an intersecting rope motif. The drum has two handles. Twelve flat, circular nobs surround the top, and a large base mouth and three openings protrude from the belly. (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 631).

The largest of the Taosi chimes, M3002: 6 is 95 cm. long, 10-32 cm high, and 2-6.5 cm. thick. One hole perforates the top of the body. The chime was made of hewn then roughly polished hornstone, like M3015: 17 (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 671).



**Figure 31: Taosi M3002, photo**  
(Zhongguo, Shanxisheng, and Linfenshi 2015c, pl. 161.1)

## Tombs with Single Instruments

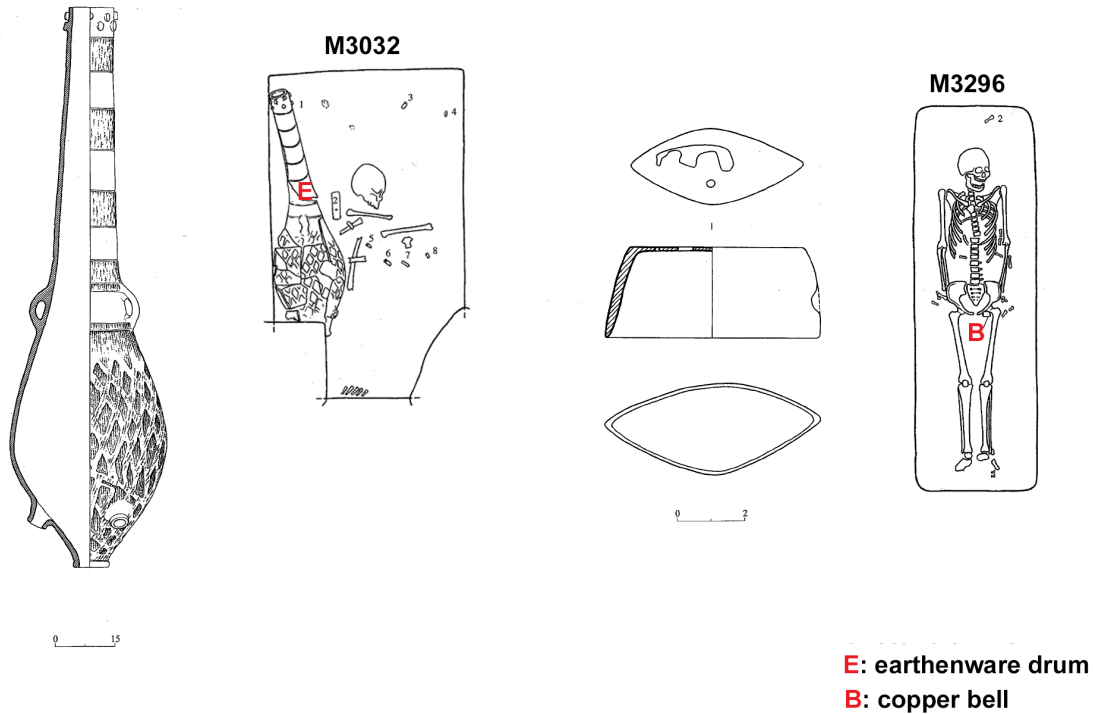


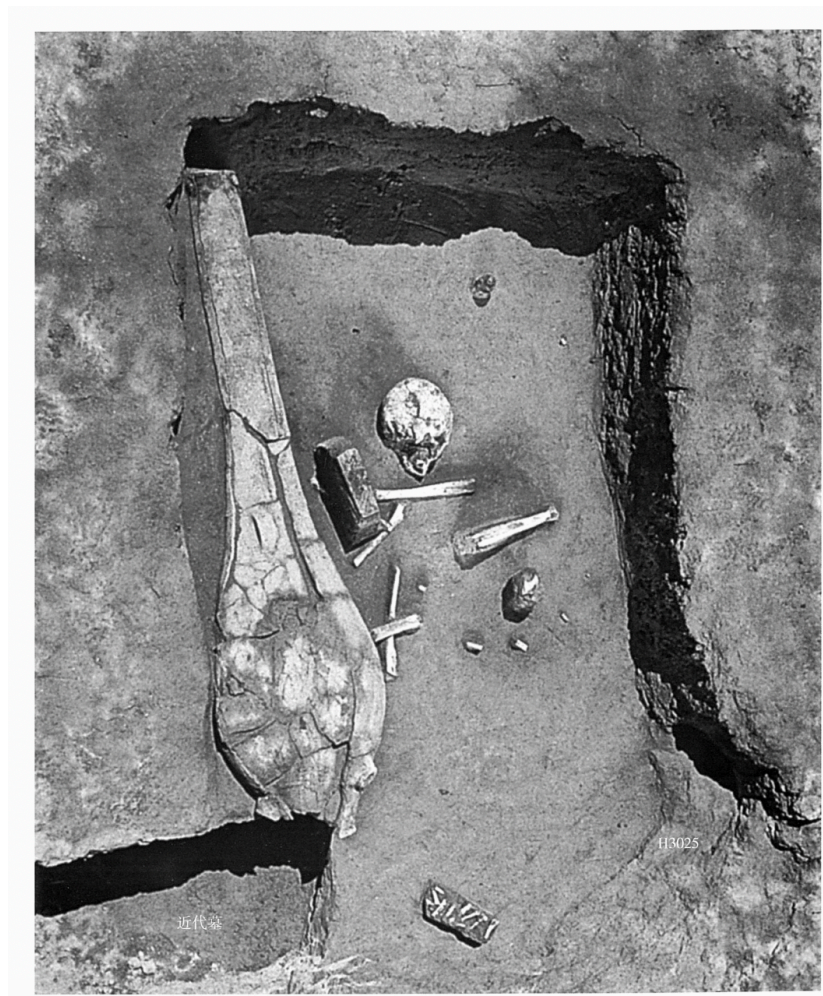
Figure 32: Taosi M3032, M3296

M3032: One earthenware drum (fig. 32)

Disturbed by a modern tomb and pit (H3025), M3032 is 1.9 m. long, 1.12 m. wide. Only the skull and some scattered leg and foot bones of the occupant remain. Excavators suspect the tomb represents a secondary burial that subsequently suffered bioturbation. Despite the relative paucity of grave goods, this tomb is categorized as second-tier due to the presence of both the drum and a jade tablet, interpreted as markers of the occupant's status (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 490; figs. 32, 33).



Beyond five jade tubes and a jade tablet, the only object found in the tomb is by far the largest earthenware drum excavated at Taosi at 142.5 cm. high (M3032: 1). The drum was laid on its side, originally lining the right of the occupant. Made of grey-brown and red-grey pottery, the diameter of its top opening is 11.4 cm., its belly-diameter 39 cm. Nine flat, circular nobs surround the top opening, and the neck of the drum is decorated with bands, the belly with a thick, overlapping rope motif. As with all other earthenware drums, four protruding mouths, including one at the base, perforate the bottom of the belly (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 631-632).



**Figure 33: Taosi M3032, photo**  
(Zhongguo, Shanxisheng, and Linfenshi 2015c, pl. 197)



M3296: small copper bell (1) (fig. 32)

A small tomb at 2.15 m. long and 0.7 m. wide at its widest, M3296 contained a male occupant about 50 years old. It was the only late phase tomb at Taosi with a musical instrument and by far the most complete of the tombs discussed here. The body was well preserved in extended supine position, although some hand and foot bones were scattered throughout. Aside from a finger bone found towards the head of the tomb about 0.2 m. above the floor, which may either have been interred along with the occupant or may have belonged to the occupant having been moved by a small animal, the tomb contained a single grave good: a small copper bell, located just below the occupant's pelvis, likely attached to a belt or otherwise affixed to his waist (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 507; figs 32, 34).

This modest copper bell (97.86% copper), only 2.65 cm. high, is both the earliest hollow-cast metal object found in China and the earliest metal bell found anywhere in the world. The bell also revealed clear trace marks of hemp cloth, which might have been used to wrap it, as well as cinnabar. Amorphous holes in the top of the bell were likely made after the object was cast and may have allowed for attachment of a clapper, although a clapper was not discovered. The bell is assumed to be a bell due to its shape, the holes on top, as well as the position in which it was found (Zhongguo, Shanxisheng, and Linfenshi 2015c, vol. 2, 666-667).



**Figure 34: Taosi M3296, photo**  
(Zhongguo, Shanxisheng, and Linfenshi 2015c, pl. 207)

## Conclusions

### Music and Materiality at Taosi

To summarize some of the data presented above: in the early phase of the Taosi cemetery, musical instruments of alligator-skin, earthenware, and stone appear together in four of five elite tombs (M3072, M3016, M3015, M3002), placed near one another at the foot of the tomb chamber. Three tombs contained a pair of alligator-skin drums each (M3016, M3015, M3002). The two most disturbed of these tombs (M3073, M3072) were the only ones that did not contain the “complete” Taosi trio. I suspect (as do the excavators) that all five assemblages originally included complete sets of a pair of alligator-skin drums, one earthenware drum, and one stone chime.

What can be gleaned of Taosi ritual musical thought from these multi-instrument ensembles? Stone chimes prove a useful starting point, as they are the most straightforward, materially uniform of the Taosi instruments, originally constructed of nothing but stone itself and a rope for suspension, although no suspension ropes remain. Resisting the urge to delve too far into debates about the nature of object materiality or agency (Tilley 2004; Ingold 2007b; Ribeiro 2016), one might simply observe that the chimes perform their own materiality. In other words, to play stone chimes was to engage the essence of stone. The fact that the remaining half of M3072: 10 was finely polished is relevant, as this suggests that the technology to create finely polished stone chimes existed but was not necessarily employed. A hornfels chime blank excavated at the nearby quarry site of Daguduishan is also roughly hewn (Tao 1988). The roughness of these stones may have been part of their aesthetic value, at least not a detractor from their function as both sound makers and symbols of control over the lapidary industry.

Striking the chimes echoed the process of their manufacture, and mastery over their performance represented mastery of the chaîne opératoire, leading from quarry to tomb.

The earthenware drums, found in all five ensemble tombs and in one individually (M3032), also contributed a distinct set of sounds that evoked the material from which they were made. Although the report and other studies of Neolithic drums (see n. 22, p. 67) suggest that the nobs around the top of the drums' necks could have been used to affix a membrane, this is not necessarily the case. The instrument could also have been played by alternatively covering and uncovering the far opening with a fan-like stopper. If a membrane were used, I believe it would have functioned as a secondary vibrating surface, as is sometimes the case with *udu* drums that have both uncovered and goatskin-covered openings. Taosi earthenware drums were most likely sounded through hand-striking the body and alternatively covering holes in the belly-base, played while in the lap, laid sideways or angled by one or (in the case of larger drums) multiple musicians<sup>25</sup> – in which case, performing them was an intimate act of direct, physical contact between musicians' hands and the surface of baked clay. Although one can only speculate as to precisely how they were played, it is hard to escape the sense that there is a purposefully unfunctional, even “anti-vessel” quality to these objects in both form and ornament. They at once mimic and challenge the form of the classic Yellow River *jiandiping* amphora. The four openings in their bellies break through the surface of the interlocking rope motif, an image of gaping holes in woven nets. One of the most developed, longstanding luxury good industries across Yellow River regions, pottery production became increasingly centralized and specialized throughout the

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<sup>25</sup> As the original instruments are too delicate to risk playing, speculations as to effective playing method could be further tested through experimental reconstructions of the drums given to skilled percussionists, ideally with extensive experience playing clay pot drums.

Taosi Longshan period (Bai 2022). Although these drums were from early phase tombs, their presence indicates that the Taosi culture prioritized “earth” as something not only to be used as a vessel, but also to be given its own voice.

In contrast with the frames of earthenware drums, the decorated wood frames of the Taosi alligator-skin drums were probably not directly struck. Alligator-skins of the now endangered *Alligator sinensis* or “Yangzi river alligator” were stretched over the tops of the drums and sounded either by hand or with mallets. In contrast with most reptiles, *Alligator sinensis* are highly vocal, especially during mating season:

Vocal communication plays a vital role in social interactions and reproduction of Chinese alligators. Though both male and female alligators bellow throughout the active season, these vocalizations are greatly heightened during the mating season. During the mating period, the bellows of one alligator stimulate neighboring others to bellow, eventually forming a chorus. (Wang et al. 2009, 2083; see also Wang et al. 2007)

Wu et al. have also shown through strontium stable isotope analysis that these alligators, which now live exclusively in southern climes, inhabited North China during the then much warmer, more temperate Longshan period (2019). The seasonal soundscapes of what Wang et al. call alligator “bellowing choruses” were therefore familiar to the people of Taosi. Based on the size of the drums and their discovery (in the three less disturbed tombs) as tight pairs, they may have been played together as a single, double-headed instrument. Pounding two alligator leather drumskins simultaneously harnessed aural associations with the sexual power of the animal during mating cycles and placed both performer and audience both decidedly above the brutality of the undomesticated swamp.

These are some suggestions as to how members of the Taosi culture may have interpreted the material significance of musical instruments excavated from in elite tombs at the site. Each

instrument could have been played on its own, but when combined, the simultaneous use of three (or potentially more) sonorous substances as ensemble coordinated these essential elements of the natural world. The idea that multiple materials could be incorporated into mortuary assemblages is of course much older than Taosi, but this analysis demonstrates that associations between materiality and music were fomenting at an early stage in the development of Chinese civilization, perhaps even as one of its foundational logics. It is not only the presence of individual instrument types that makes these ensembles important precursors to those of later periods— but their harmonization of diverse earthly substances, a sort of “correlative terrestriality,” appropriately returned to the ground.

### The Taosi Tomb as Stage

To zoom forward in time for a moment, Jeehee Hong has shown that from the eleventh through the thirteenth centuries AD, aristocratic tombs become elaborate theaters with architecturally embedded stages for representations of musical and theatrical performance in the afterlife in central China: “most representations of theatrical performance were found in tombs in the northern and central regions, which featured the most vibrant performance culture of the time, and especially in the northern Henan and southern Shanxi provinces” (2017, 4). Her analysis raises the question of when this longstanding central Chinese tradition of entertaining the dead through the afterlife – and therein the idea that privileged deceased should be kept from boredom throughout their subterranean existences – began. By the Late Bronze Age, concepts of the tomb as microcosm for worldly elite life were well developed, enough so that not only musical instruments but also sacrificed individuals (perhaps musicians) are often found in mausolea of the most important members of society (von Falkenhausen 2004; Thote 2009).

This is a narrative with very broad temporal scope and must be interpreted cautiously, but I believe that the contents and structure of tombs of the early phase cemetery of Taosi hint that the afterlife may have been a venue for postmortem musical performance as early as ca. 2300 BC in southern Shanxi. The size, number, and position of instruments within tombs serve as fragmented “negatives” of the structure of elite entertainment. Although we often interpret the contents of mortuary assemblages as personal property, and the occupants of M3072, M3073, M3016, M3015, and M3002 may have in some sense “owned” the instrument sets in their assemblages, it is doubtful that they were responsible for playing them. Given the size and number of the original ensembles, it would have been exceedingly difficult for any individual to play all instruments at once. In modern classical orchestral performance percussionists are responsible for handling several large instruments simultaneously, but this requires the support of elaborate, movable suspension racks and stands, usually with a collection of external mallets on hand. The Taosi stone chimes no doubt required a stationary suspension system, and the size and form of the earthenware and alligator-skin drums strongly suggest that they were held or balanced between several players’ legs, played with the hands while seated or at least relatively still. I estimate that at least two but probably three or more skilled percussionists would have been required to manage the Taosi trio ensemble at a given time.

Moreover, the relatively consistent placement of musical instruments towards the bottom right corner of the tomb chamber (as visible in M3073, M3016, M3015, and M3002) appears purposeful. The instruments remain within the “sightline” of the deceased (suggested by the position of the remaining lower half of the occupant of M3002), positioning the occupant as either audience or master of the performance. In contrast, M3032, which contains a single earthenware drum and jade tablet, may represent the tomb of a musician, as the instrument was

located directly adjacent to where the bones of the owner originally were placed as a secondary burial. In Chapter 4, I will discuss how increase in instrument size alone can be indicative of a physical distancing between performer and audience; in the case of Taosi, this distancing is visible in the structure of the assemblage itself.

What, then, to make of the late phase tomb M3296 and the small bell below the pelvis of the occupant (as well as the seeming inheritors to this single bell burial practice as seen in the elite waist-bell burials of Erlitou)? The novelty of the inclusion of a copper bell – again, the earliest hollow cast metal object discovered in China, almost certainly not produced at Taosi where there is no evidence of metallurgy – and its direct relationship between the body of the occupant may be evidence that he originated from a cultural context with a distinct set of ritual and musical traditions that were *not* direct continuations of earlier phases of Taosi. This difference in the musical material culture of elite early phase tombs and this single late phase tomb reveal that the development of the Chinese ritual musical ensemble was not linear. It was, rather, a gradual process that took place over many millennia and incorporated diverse cultural elements, some of which may have come into conflict by the end of the Taosi Longshan period.



## Chapter 4: Metal – a “Sibling” Dōtaku Bronze Bell Soundscape in Western Japan

### Introduction

Over 500 dōtaku bronze bells,<sup>26</sup> traditionally dated to the middle through late Yayoi (ca. 200 BC–250 AD), have been passed down or excavated, most from the Kinki region of Honshu in Japan. The striking prevalence of bronze bells in the ritual culture of Japan’s early Bronze Age demonstrates that conceptualizations of metal as a sonorous substance were not likely exclusive to China. Curiously, although small bronze bells were also made in Korea, there are no Korean precedents for the fixation on dōtaku that took hold of communities in western Japan by the middle Yayoi period. Alongside bronze weapons such as daggers and halberds, dōtaku are emblematic of the Yayoi, appearing not long after the beginnings of large-scale agriculture and metallurgy in the archipelago. Bronze objects enter the Japanese archipelago roughly a millennium after small metal objects such as the Taosi M3296 copper bell (Chapter 3) were made. By the time dōtaku culture flourished in Japan, the heyday of the tuned bronze bell set in China had just passed – although this chapter will demonstrate that its reverberations continued to be heard far and wide.

Dōtaku are the most commonly surviving musical instrument of Japanese pre- and protohistory, but precisely what purpose they served and how “musical” that purpose was remains unclear. Far less acoustically complex than the two-tone bronze bells of Zhou China, dōtaku also

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<sup>26</sup> This number (Namba 2007) excludes small bells (*shō dōtaku*). Yayoi archaeologists consider small and large dōtaku two separate types of objects. Although the precise criteria are not clear, small dōtaku generally are undecorated and less finely made, under 15 cm., many but not all with clappers, and not found in pairs or sets (for dedicated studies of *shō dōtaku*, see Arayama 2014, Shirai 2016).

have an almond-shaped cross section, ranging in size from just a few centimeters (shō dōtaku) to over a meter in height. The largest examples were made during the late Yayoi and were not likely used to produce sound. The bells I focus on in this chapter range from approximately 20-50 cm. (fig. 35), are occasionally found with clappers, and date to the first half of the middle Yayoi when the sounds of metal would have still been novel to most people throughout the Japanese archipelago. Unlike other types of bronzes, dōtaku are never found in mortuary contexts, and their production ended abruptly with the beginning of the Kofun period (ca. 300 AD). Dōtaku were most often buried carefully in intentional pits in remote areas at some distance from settlements, singly or as nested pairs (fig. 36), occasionally in sets of as many as 39 (at Kamo Iwakura in Shimane prefecture, Unnan city).

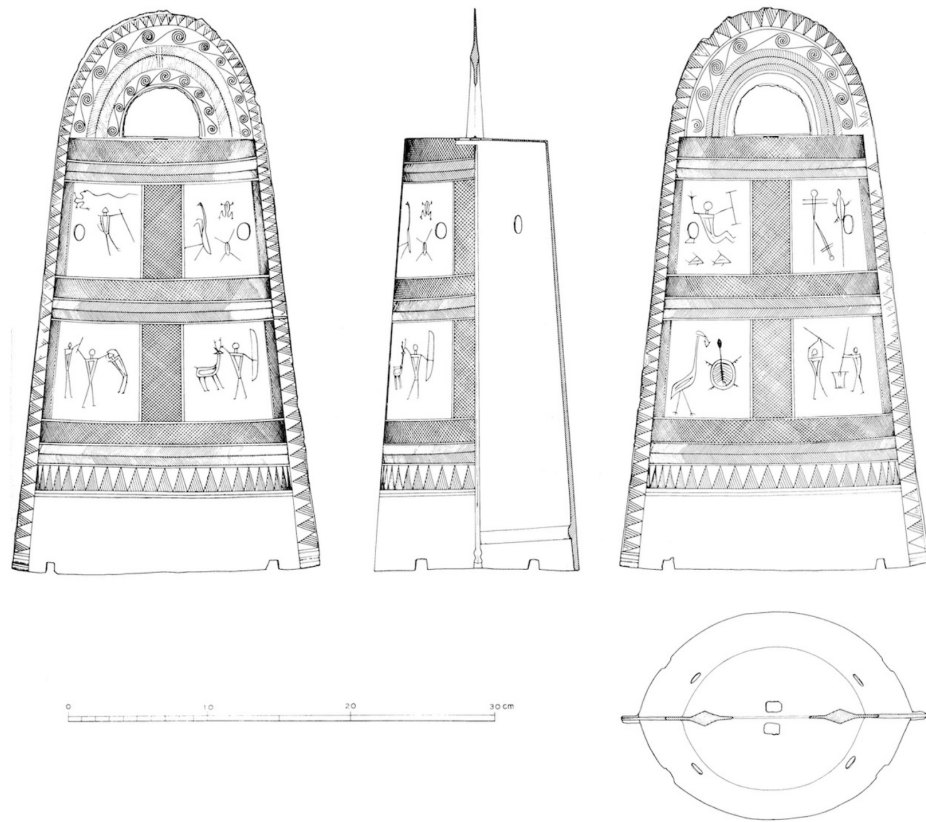


**Figure 35: Set of 5 type II-2 sibling bells**  
Left to right: Kamo Iwakura (Shimane) #31, #32, #34;  
Kamiyashiki (Tottori); Sakuragaoka #3 (Hyōgo) (Shimaneken and Kamomachi 2002, pl. 6)



入れ子状況 (上: 6・7号銅鐸 下: 3・4号銅鐸)

**Figure 36: Type II nested dōtaku pairs (2 of 3) from Matsuho (Hyōgo)**  
#6+#7 (above) and #3+#4 (below) (Minamiawajishi 2020, unnumbered opening pl. 2)



**Figure 37: Type III-2 four panel *kasaya* sash pattern *dōtaku***  
Sakuragaoka (Hyōgo) #5 (Sakuragaoka 1969, pl. 47)

Although the original function and reasons for the remote interment contexts of *dōtaku* remain something of a mystery, key details can be gleaned from the bells themselves. First, some bells are decorated with figural ornamentation depicting scenes of hunting, fishing, animals, and rice cultivation (fig. 37), suggesting that they may have been used in festivals celebrating agricultural or other annual cycle events (Sahara 1996). In addition, what was once perceived as a sudden and drastic increase in the size and ornamentality of examples made after the middle Yayoi led Tanaka Migaku to argue, in a chapter titled “From Festivals to Governance” (*Matsuri kara matsurigoto e*), that changes in Yayoi political institutions catalyzed the development of small, functional “bells to be heard” *kiku dōtaku* into large, symbolic “bells to be seen” *miru dōtaku* during the first century AD (1970), a claim also supported by use-wear marks from

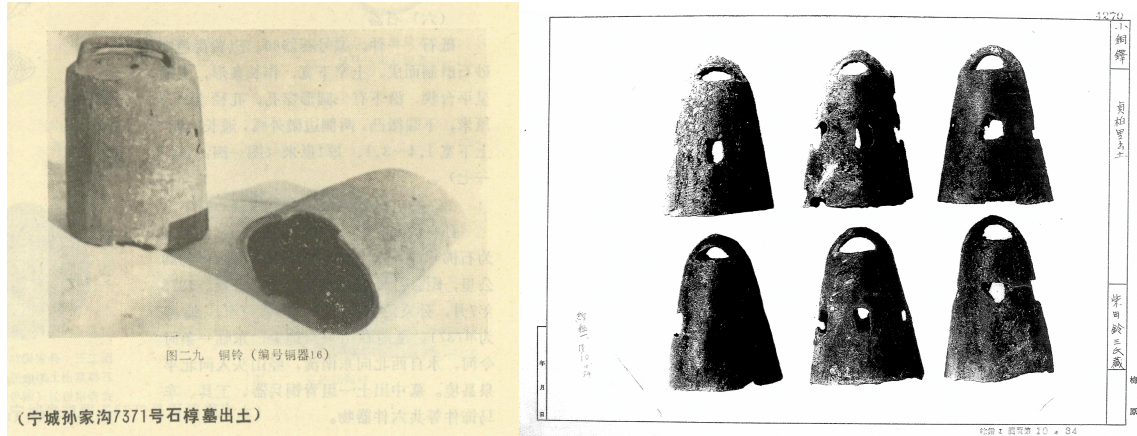
hanging ropes and internal clappers on the former. Recent evidence has revealed that this transition may have been more gradual and complicated than previously believed (Namba 2017, 17), and probably occurred at an earlier absolute date. By the late Yayoi, *dōtaku* show no evidence of having been used as musical instruments or sound makers.

In this chapter, I address an additional, key shift in *dōtaku* form over time: the appearance, cross-regional exchange, and eventual decline of so-called “sibling *dōtaku*” (*kyōdai dōtaku* 兄弟銅鐸),<sup>27</sup> or bells cast from the same stone mold (fig. 35). I trace one major network of 89 (known) sibling bells that spanned western Japan during the Middle Yayoi period (ca. 300 BC – 1 AD). The size and density of such a network is unique to Japan, but it should be mentioned that the earliest bells that appear to be cast from the same molds come from Eastern Zhou period (771-221 BC) steppe “Northern Zone” cultural contexts on the borders of ancient China. These small, Chinese bells likely had clappers, interred in mortuary assemblages in groups of as many as six, potentially evidence that “northern regions attempted to imitate the trappings of the ritual musical complex of their Chinese neighbors” (von Falkenhausen 1988, 470). Unlike their clay mold-cast central plains antecedents, however, Northern Zone bells were cast in hardy bivalve stone molds, often in pairs that are found together. The form of and technology required for making *dōtaku* is ultimately derived from similar, small bells cast throughout the Korean peninsula, which also appear to have been cast as sets (fig. 38).<sup>28</sup>

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<sup>27</sup> The earliest use of *kyōdai dōtaku* I can find is in Fujimori (1964, 25, 83), although he uses it as if it is commonly known terminology, so it may have been coined elsewhere. It subsequently becomes ubiquitous. I will return to the implication of the term in “Conclusions.”

<sup>28</sup> At Sanguandian in Liaoning, one pair of identical bells (out of six total) cast from a bivalve stone mold was found (Liaoningsheng bowuguan 1985, 127); another bivalve cast pair as pictured in Fig. 1, from Sunjiagou M7371 also in Liaoning (Ningchengxian and Zhongguo 1981, 35), with obvious use-wear marks from clappers; at Yushugou in Gansu, three sibling pairs all cast from bivalve molds were excavated together (Gansusheng bowuguan wenwu



**Figure 38: Korean small bronze bells**

(Left) Bell pair excavated at Sunjiagou M7371, Liaoning, Upper Xiajiadian culture (Ningchengxian and Zhongguo 1981, fig. 29), 16.4 cm.;  
 (Right) Bells from Jeongbaek-ri, South Jeolla Province, 2<sup>nd</sup> century BC, approximately 12 cm. (Tōyō gakujuitsu kyōkai-hen 1966, pl 10.34)

In Japan, as many as 5 dōtaku made from the same mold have been found. Namba Yōzō points out one group the casting marks of which would indicate an original set of as many as 8 (2000, 16). One can even determine the sequence in which bells were cast, as stone molds develop cracks with use and require frequent repair, creating obvious marks on “younger” siblings. Ornamentation can also be changed via the molds or on the bells themselves after casting.

Although archaeologists have been aware of the phenomenon since the 1920s (Katori 1923) and are quick to identify sibling bells after they are excavated, much remains to be said about their function within Yayoi social institutions. I hypothesize:

- 1) Shared musical traditions allow for the foundation of social and political relationships based on the creation of a unified soundscape that may employ idioms of pre-existing institutions, such as kinship. This soundscape consists not only of discrete performances but, more

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gongzuodui 1981, 34); All are less than 20 cm. high. Kaemoto provides an early list of Korean dōtaku in Japanese, all of which are under 7 cm. (Kaemoto 1936).

fundamentally, of a shared perception that communities “hear” each other across great distances, potentially even across linguistic and ethnic divisions. Musical exchange, visible in the material record through the instruments themselves, may serve as a means of creating social cohesion.

- 2) Musical traditions, reflected by instruments, can be drivers of social transformation, rather than passive reflections of systemic technological or ideological change.

After introducing *dōtaku* and their research history, which is necessary in this context as little scholarly information about the topic is available to readers in English,<sup>29</sup> I describe each major sibling bell group within this Middle Yayoi network. These groups are only a subset of a broader network, as some groups or individual bells are still unknown or lost. In addition, the present analysis does not include all bells excavated within the region; only examples that consist of at least two sibling bells found in distinct assemblages (and all bells within those assemblages) are included to highlight the potential existence of cross-regional relationships. Until the very end of the Middle Yayoi, siblings from this network are found either very close together (in the same assemblages or within 4 km.) or in a subset of entirely disparate regions, strongly indicating that their distribution was not coincidental. I focus on this network of bells for two reasons: (1) our understanding of the network’s density has recently deepened, with the discovery of 7 bells at Matsuho on Awaji island in 2015 that have sibling bells in two major groups previously excavated in the Izumo region; (2) bells involved are all early types (types I, II, and some III *kiku dōtaku*/musical bells) that show evidence of having been hung and rung as sound making devices.

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<sup>29</sup> Notable exceptions to this are: for foundational information about the topic 1) sections of a major exhibition catalogue translated by Sasaki Ken’ichi (in Sahara and Harunari 1996); for art historical/iconographic analysis, 2) a survey of Kinai *dōtaku* iconography in various sections of a dissertation also focused on middle Yayoi pottery by Ellen Jane Oksbjerg (2008) and 3) part of a chapter by Kōji Mizoguchi elucidating the “Yayoi Myth” as represented on pictorial bells excavated at Sakuragaoka (2013, 173-180).



Dōtaku are considered an unwieldy subject by younger generations of Yayoi specialists due to difficulties in either directly dating or placing them securely within relative pottery chronologies, as they are often discovered independently of contextual information. Publications on the topic outside of individual site report sections have declined precipitously since the 1990s, and as a result, up-to-date understandings of dōtaku must be synthesized from disparate reports. I do not focus directly on describing figural decoration and ornamentation, which has been accomplished impressively in the works of Namba Yōzō, who has been publishing consistently on the topic for over three decades and will be cited frequently. I instead adopt an anthropological lens informed by ethnomusicology and music archaeology. This approach aims to introduce dōtaku studies to a new audience and provide a fresh perspective on the function of sibling bells, suggesting that they coordinated a cross-regional soundscape based on the idiom of kinship ties, acting as a necessary cohesive force in the unstable cultural zone that was western Japan during the middle Yayoi.

## Dōtaku Research: Foundations

### Brief history of dōtaku discovery before the Meiji period

The early appearance of dōtaku in classical texts is an essential part of their aura as national symbols. Mentions of the exhumation of large bronze bells appear not long after textual records themselves in Japan, occasionally ringing from the pages of late eighth and ninth century



histories.<sup>30</sup> Yamanaka Ichiro explains that this is likely due to a law included as part of the *ritsuryō* legal system, inspired by that of the Tang, specifying that discovered “antiquities unique in form” were to be surrendered to the government for a reward (1994, 83).

Bronze bell discovery events feature occasionally in Heian histories, in four of the *Rikkokushi* (Six National Histories): in the *Shoku nihongi* a bell discovery was recorded in 713 (Yamanaka 1994); in the *Nihon kōki* a bell discovery was recorded in 822 (ed. Kuroita 1932 [text completed 840], 871);<sup>31</sup> in the *Shoku nihon kōki*, a discovery was recorded 842 (ed. Saeki 1930 [text completed 869], 213); and in the *Nihon sandai jitsuroku* (ed. Saeki 1930a [text completed 901], 89), a discovery was recorded in 860. These instances are presented in a somewhat formulaic manner: large bronze bells, a meter (3 *shaku*) or more in height, are found by someone in a particular locale, dug from the ground, and presented to the authorities. These descriptions fit current understandings of both the upper size range and typical depositional contexts of Yayoi *dōtaku*. The *Shoku nihongi* comments not only on a discovered bell’s size, saying it was 3 *shaku* high and 1 *shaku* in diameter, but also states that its “form was unusual” 其制異常 and its “sounds in accordance with musical scales” 音協律呂 (ed. Saeki 1929, 97), the latter concept clearly a Chinese import. This section of the *Shoku nihongi* thus provides evidence that at least during the ninth century, acoustic qualities of unearthed *dōtaku* were considered an inherent part of their value. The *Fusō ryakuki* historical chronicle, compiled during the late Heian by the monk

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<sup>30</sup> The earliest Japanese use of the kanji *dōtaku* 銅鐸 is in the *Saidaiji shizai rukichō*. The text describes chime bells hanging from eaves in a Buddhist context (ed. Takeuchi 1962 [text completed 780], 395-396) and likely does not refer to Yayoi period objects. The date recorded is 713.

<sup>31</sup> This portion of the text of the *Nihon kōki* was lost but retained in the subsequently compiled *Nihon kiriyaku*, the exact date of which is unclear. The work of re-compiling and chronologizing lost texts of the *Nihon kōki* from other works was performed by Kamo no Sukeyuki (1656-1732), as part of the 40 volume *Nihon isshi*.

Kōen (?-1169), records a 5 *shaku* high bell being taken from the ground at Sūfukuji in Ōmi province (within modern day Shiga prefecture) in the seventh year of the reign of Emperor Tenji, or 668 (ed. Kuroita 1965, 60). This is widely cited as the earliest recorded reference to a dōtaku being found, although the bell would have been larger than any known examples and the text itself was completed centuries later (1094). Whether or not the *Fusō ryakuki* date is accurate, the discovery and preservation of dōtaku has clearly been considered a matter of national import for well over a millennium, perhaps beginning as early as the late Kofun period.

Many references to, illustrations, and rubbings of Yayoi dōtaku, as part of 68 separate works in total according to a thorough compendium by Tanaka Tatsumi (1986, 16-112), appear throughout the Edo period, during which the bells became the treasured objects of elite collectors and artists. A thorough study of Edo depictions of dōtaku would also be a worthwhile project in and of itself but is beyond the scope of this chapter. In sum, from the 16<sup>th</sup> century forward scholars and artists were primarily concerned with the aesthetic qualities of the bells.<sup>32</sup> Unsurprisingly, the dōtaku that make it into their compendia are large and visually impressive examples, and earlier, smaller, musical bells were disregarded. Considered in context, it is hard not to wonder if contemporary interpretation of Late Yayoi dōtaku as bells meant “to be seen” could ultimately be rooted in the history of their illustration as *objets d'art* during the Edo.

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<sup>32</sup> One does find the occasional acoustical musing in later Edo texts. Tanaka points out that what seems to be the first known recorded instance of a suggestion that dōtaku may have used wooden clappers comes from the *Nihon morote bune*, finished in 1796 (T. Tanaka 1986, 32-33). Shortly thereafter the author of the *Kakegawa shikō* also later wonders if the holes in dōtaku may have been meant to adjust their tones and if they might have used wooden clappers (ed. Saida 1972 [1805], 139-140).

## Brief summary of dōtaku studies from the Meiji through the Taishō periods

After the beginning of the Meiji Restoration (1868) and throughout the beginning of the 20<sup>th</sup> century, Japanese scholars became increasingly engaged in anthropological and archaeological approaches to dōtaku, although for the most part their curiosity did not extend to the bells' acoustic qualities. To summarize important studies: Kanda Takahira (1888) provides an account of relevant classical texts, as discussed above, as well as a report of measurements and weights for a set of fourteen dōtaku unearthed several years prior in 1881 in Koshinohara, Yasu city, Shiga prefecture.<sup>33</sup> Most importantly, Kanda raises questions about the makers of the bells and their social institutions, as well as how the materials necessary to make bronzes were obtained. In 1913, Numata Yorisuke published an article beginning with classical references but also containing the first dōtaku list, distribution map, and typology, dividing them into three categories based on size, ornamentation, and location of discovery. Numata also expresses interest in their function as musical instruments and questions whether they were hung, whether they might have had clappers, whether they were struck, to what extent corrosion might have affected the existence of use-wear marks (12-16).

The connection between “Yayoi” culture, then still viewed as an ill-defined intermediary stage preceding the Kofun, and excavated dōtaku was made by Torii Ryūzō (1918, 111-122). As is relevant to the present analysis, the sibling bell phenomenon was first realized through comparison of two dōtaku in the possession of painters Kikkawa Reika and Otsubo Masayoshi at a meeting of the Archaeological Society of Nippon, although it was still believed that bells were

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<sup>33</sup> A set of 10 was also discovered in Yasu in 1962. (Yasuchōritsu rekishi minzoku shiryōkan 1998)

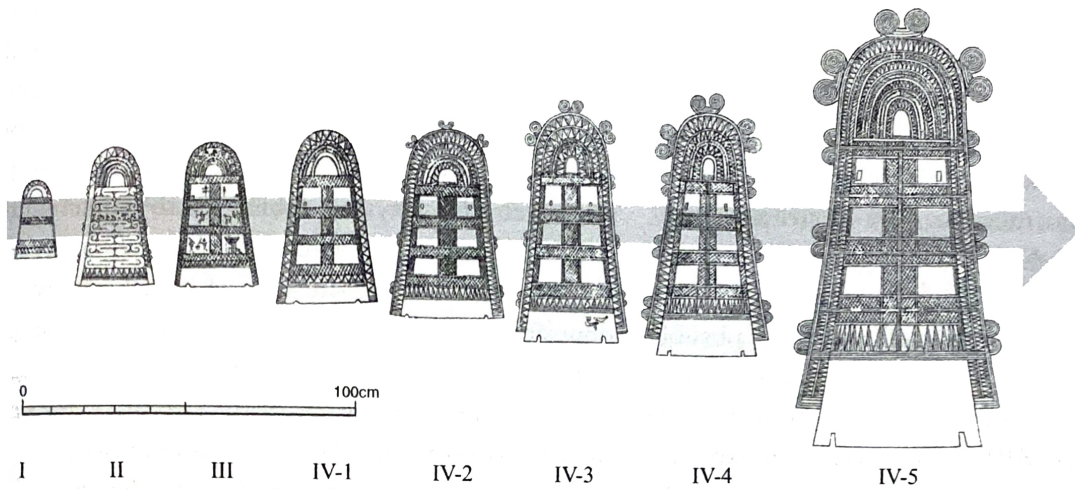
made from clay molds and the phenomenon was considered puzzling (Katori 1923). The publication of a two-volume study by Umehara Sueiji represents the first comprehensive archaeological work on *dōtaku*, one volume dedicated entirely to illustrations, photographs, and rubbings of every bell listed. It is still frequently used as a reference work nearly a century later (1927). His work heralds the beginning of modern *dōtaku* studies, published in the first year of the Shōwa period.<sup>34</sup>

### Dōtaku Typology

Dōtaku are traditionally divided into four main types with nine subtypes associated with the second century BC through first century AD, a chronology first developed by Sahara Makoto (1960) based on crown morphology and bell size. So-called *fukuda* 福田 or Kyūshū-type *dōtaku*, of which about 10 have been excavated to date, are also considered a separate type unto themselves, contemporaneous with Types I-II (Harunari 1989). Namba also provides additional subdivisions of the four major types and subtypes based primarily on ornamentation and region (Namba 1986; 2006; 2007), but Sahara's essential chronology has remained unchanged and serves as the primary means by which *dōtaku* are dated (fig. 39):

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<sup>34</sup> There were subsequently many comprehensive *dōtaku* studies written throughout the 20<sup>th</sup> and early 21<sup>st</sup> centuries include (for example, Fujimori 1965; Fujiyoshi 1970; Oba 1974; Sahara 2002).



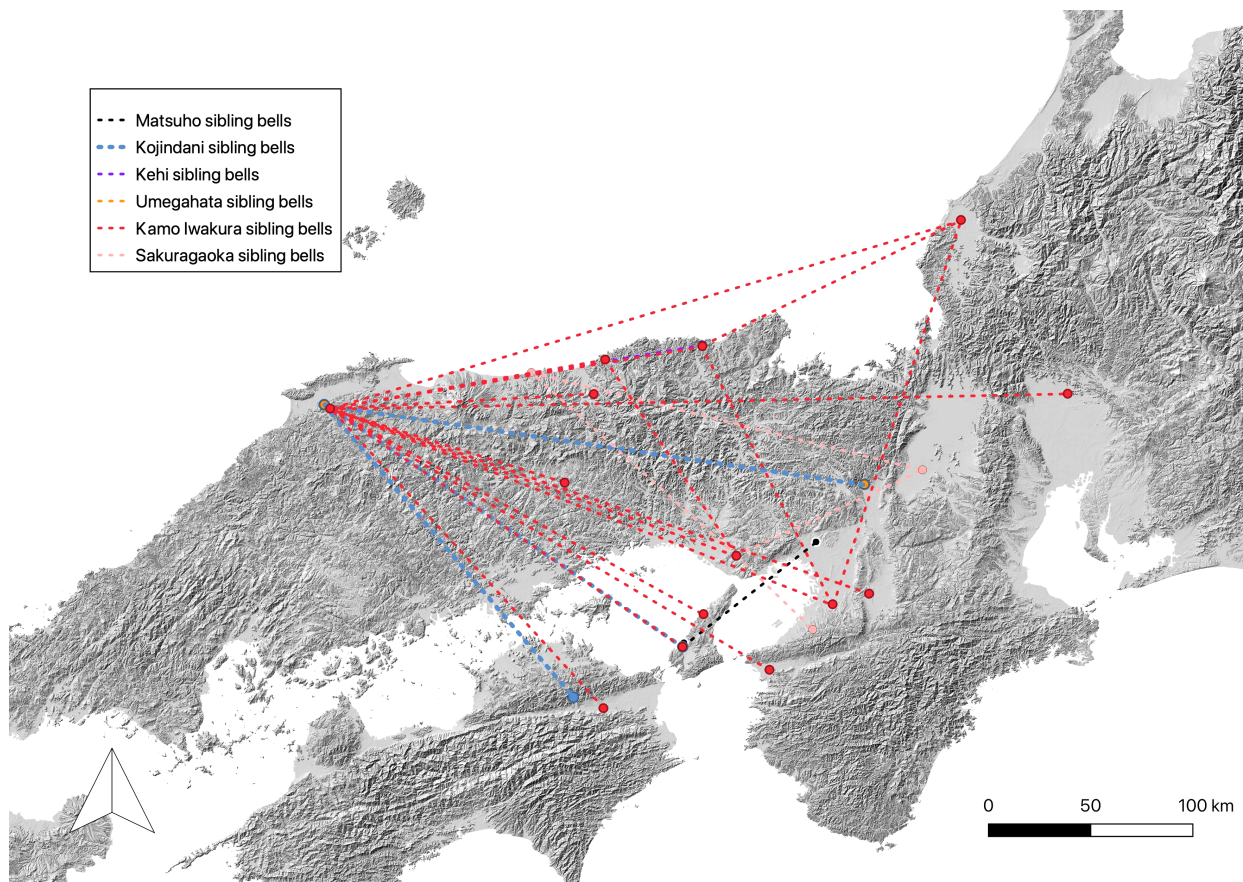
**Figure 39: Dōtaku types**  
(Mizoguchi 2013, 193)

- Type I (subtypes 1 and 2): “water chestnut loop crown type” (*ryokanchūshiki* 菱環鈕式), second century BC
- Type II (subtypes 1 and 2): “border crown type” (*gaientsukichūshiki* 外縁付鈕式), first century BC
- Type III (multiple subtypes, broadly categorized as “old” and “new”): “flat crown type” (*heipeichūshiki* 扁平鈕式), first century AD
- Type IV (subtypes 1-5, including “Kinki type” and “San’en type”): “protruding outline crown type” (*tossenchūshiki* 突線鈕式), second century AD

In his initial 1960 chronology, Sahara also perceived a gradual shift from “practical” to “ornamental” dōtaku that occurred sometime during the third stage. As mentioned, Tanaka Migaku then reformulated this idea as an evolution of dōtaku “to be heard” (*kiku dōtaku*) to dōtaku “to be seen” (*miru dōtaku*). While there have been some small disagreements about when exactly this shift occurred, major dōtaku studies are in accord with the interpretation that the

transition is visible in the shift from old to new Type III “flat crown form” bells (Migaku 1970; Sahara 1979, 50-51; Sahara 1996, 14-15, 137-144; Harunari 2011). Also relevant is the presence of a protruding “strike” band within the body of the bells, usually (but not always) present and worn down in Types I, II, and III, presumably by repeated contact with a clapper, although the clappers themselves only occasionally remain. The present network involves types I-III.

### A Middle Yayoi Sibling Dōtaku Network



**Figure 40: Map of a Middle Yayoi sibling dōtaku network**

A dōtaku network that consisted of at least 89 sibling bells fanning out across much of Kinki seems to have culminated in a major, longstanding node consisting of two groups (Kōjindani and Kamo Iwakura) in Izumo in the coastal San'in region (fig. 40). If one follows the

traditional chronological framework, the bells were cast from the middle through the first half of the Late Yayoi (ca. 200 BC–200 AD), although radiocarbon dating on plant remains attached to some of the Matsuho bells has yielded surprisingly early results, as will be discussed in the section below. Also given other continuing developments in understandings about the Yayoi chronology (see previous chapter, n. 4), it seems plausible that the earlier groups may have been interred at least a century or so before the traditional chronology would indicate (around the third century BC).

The *dōtaku* that were part of this network were cast and buried in two distinct stages, with six major finds of four or more bells:

- Stage I (early? or early middle to mid-middle Yayoi): Matsuho in Awaji island, Kōjindani in Izumo, Umegahata in Kyōto
- Stage 2 (middle Yayoi to beginning of late Yayoi): Kehi on the northern coast in Hyōgo prefecture, Kamo Iwakura in Izumo, and Sakuragaoka in Kobe

Scattered finds of single bells throughout western Japan, with a few reaching into eastern Japan, also highlight the variable strength levels of bell-based relationships within the network.

A few points should be made before proceeding with a description of each major group, which follows below in likely chronological order of interment: first, *dōtaku* manufacture necessarily predates interment by some margin. How large a margin has been a matter of debate. From the 1960s through the 1990s, archaeologists asked whether *dōtaku* were summarily buried at the end of the Yayoi period or in multiple stages and whether practices varied regionally (Tanabe and Sahara 1966; Kawanishi 1975; Morioka 1975; Harunari 1982; Iwanaga 1998). As more examples have been excavated, it has become increasingly clear that bells were most likely interred continuously in various regions throughout the Yayoi, during or one period removed from the time during which they were made. Important to this realization were (1) Harunari's

observation that most excavated *dōtaku* pairs tend to contain bells from the same or adjacent types (1982), as has been borne out by subsequent finds; and (2) discovery of a type II *dōtaku* in an intentional pit beneath a large discard layer of late middle Yayoi pottery in Aichi at the Hachiōji site, definitively proving that *dōtaku* could not have all been hoarded at once at the end of the Yayoi (Higami 1998; fig. 41).

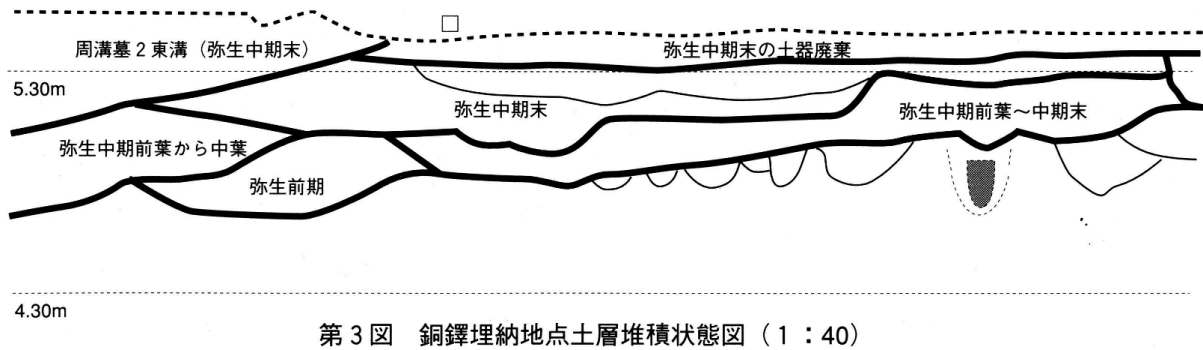


Figure 41: Type II *dōtaku* found in context at Hachiōji (Aichi) (Higami 1998, 85.3)

It also remains difficult to conclusively map out the directionality of bell exchanges, as this requires discovery of workshops. Bronze casting and distribution was still highly dispersed and decentralized throughout the entirety of the network’s existence, until the late middle Yayoi (Kataoka 1999; Tajiri 2001), “suggesting that [bronze] circulation was not tightly controlled by the emergent elite but instead took the form of prestige *gift* exchange” (Mizoguchi 2013, 141). The sonic and social function of these *dōtaku* “gifts” will be discussed in this chapter’s “Conclusions.” Only one bell within the network has been matched to a specific mold to my knowledge (see “The Kehi Bells”), at a location not particularly close to any of the involved finds. Namba posits that although the small-scale casting of the few remaining type I bells may



have been handled by a single workshop, type II bells were cast in several workshops throughout the central Kinki region based on similar types of molds excavated there (2004, 2). The fact that sibling bells were retained in so many dispersed locations strongly suggests that there was more to dōtaku networks than straightforward trade. Izumo seems to emerge as the major bell (and bronze weapon) collection point by the end of the middle Yayoi, but the wide, fan-like dispersal of sibling bells across major regions within and beyond central Honshu may be evidence that the use of dōtaku cast from the same mold was either a cross-regional, egalitarian institution – or a nascent, elite exchange network during the Middle Yayoi.

## Stage 1

### The Matsuho dōtaku

In 2015, a group of seven, 22-32 cm. high type I and II dōtaku were found as a set at a stone manufacturing facility in Minamiawaji city in the south of Awaji Island, Hyōgo Prefecture (Minamiawajishi 2020; 2021; fig. 42). They were deposited intentionally in nested pairs (nos. 1-2, 3-4, and 6-7; fig. 36), except for No. 5, which was recovered independently in fragments. This set of bells was an exciting discovery for several reasons: (1) trace carbonized remains (tree bark, etc.) were found on some bells and clappers, allowing a dōtaku interment event to be directly dated for the first time (in 2017), to 400-200 BC;<sup>35</sup> potentially centuries earlier than was expected for such early bell types; (2) all were found with bronze clappers, a known but

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<sup>35</sup> Remains from bell 2 (2 samples) and tongue 7 (1 sample) were scarce and yielded dates so early that they were likely contaminated and not ultimately included in the report; dates from remains on bell 4 (5 samples) were more plentiful and ranged from 514-169 BC, most falling from 400-200 BC (Minamiawajishi 2020, 130-131, 135).

relatively uncommon feature for dōtaku, as well as several with fragments of rope that connected the clappers and suspension loops; (3) three of the seven can be matched to previously discovered “sibling” bells.



松帆銅鐸・舌

**Figure 42: Matsuho dōtaku**  
(Minamiawajishi 2020, unnumbered opening pl. 1)

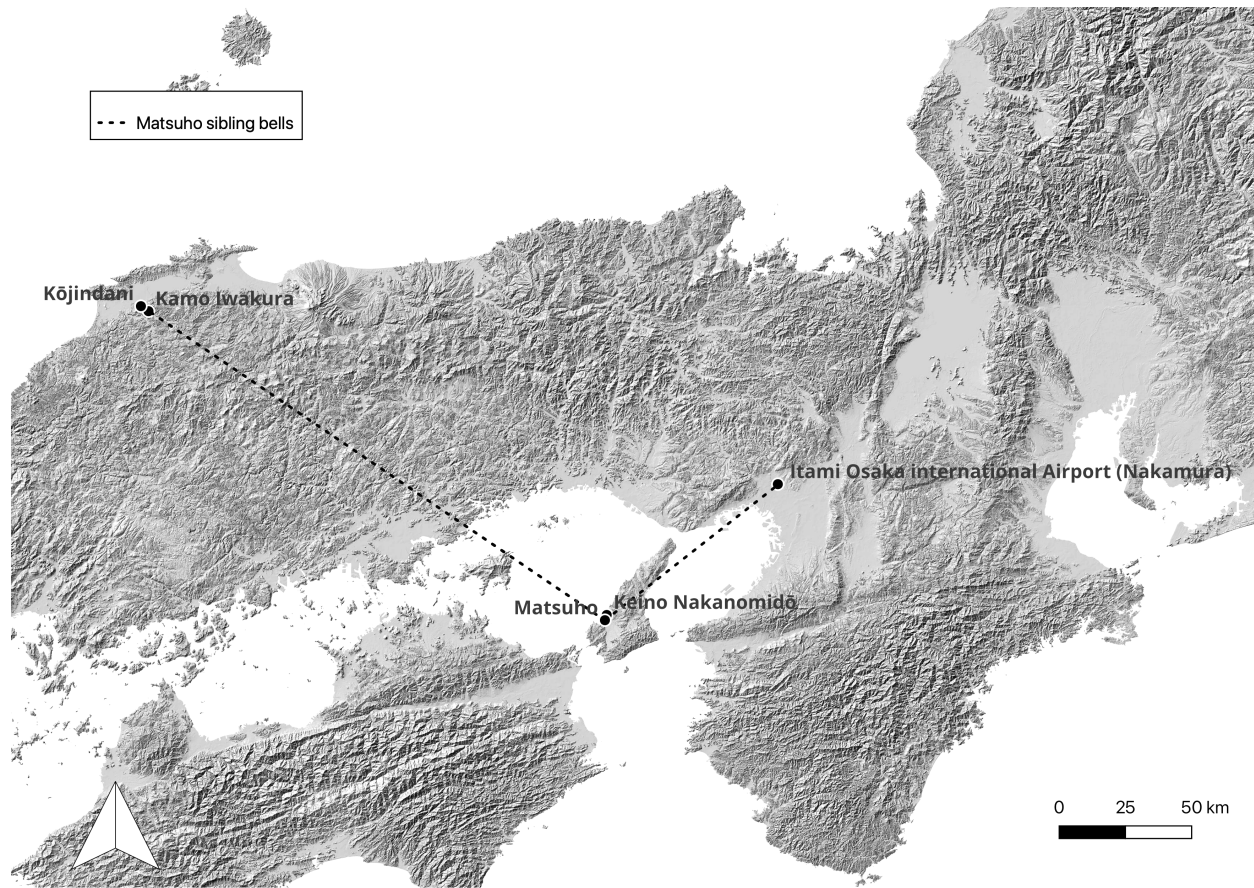


Figure 43: Map of Matsuhō sibling dōtaku

Bell #	Type	Height (cm.)	Nested	Sibling	Other Features
1	I-2	26.7	2		clapper; horizontal band pattern
2	II-1	22.4	1	Matsuhō (Hyōgo) 4; Keino Nakanomidō (Hyōgo) 1	clapper; 4 panel <i>kasaya</i> sash pattern
3	II-1	31.3	4	Kamo Iwakura (Shimane) 27	clapper; 4 panel <i>kasaya</i> sash pattern
4	II-1	22.5	3	Matsuhō (Hyōgo) 2; Keino Nakanomidō (Hyōgo) 1	clapper; 4 panel <i>kasaya</i> sash pattern
5	II-1	23.5		Kōjindani (Shimane) 6	fragmented; clapper; 4 panel <i>kasaya</i> sash pattern
6	II-1	32.2	7		clapper; 4 panel <i>kasaya</i> sash pattern
7	II-1	22.1	6	Nakamura (Hyōgo)	clapper; 4 panel <i>kasaya</i> sash pattern

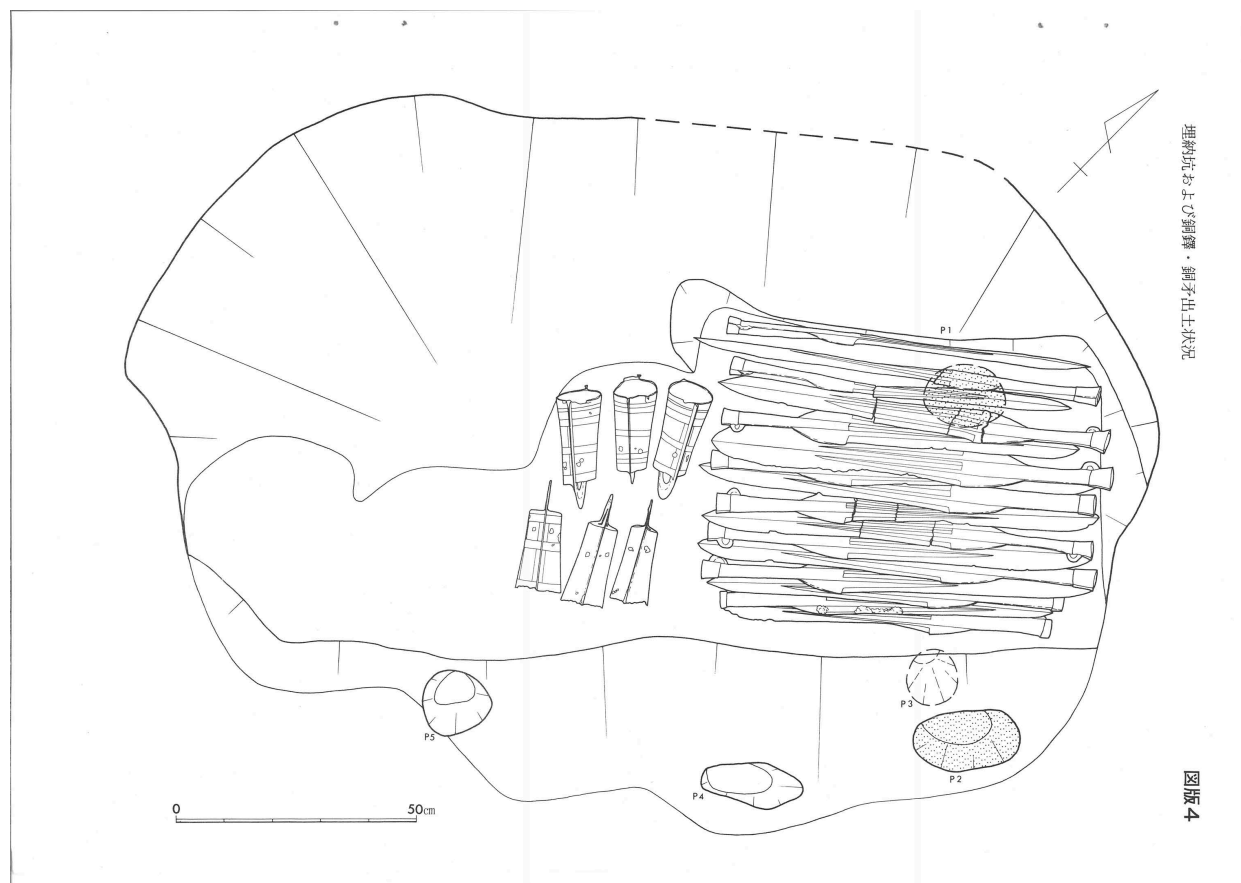
Table 6: Dōtaku group from Hyōgo, Minamiawaji, Matsuhō

The Matsuho bells' siblings were found locally on Awaji Island, in Ōsaka, and in Izumo, indicating bell-based relationships reaching in two main directions – between people living on Awaji Island and Izumo, on the one hand, and Kinki on the other (fig. 43, table 6). Two of the Matsuho bells, themselves siblings, have a third sibling reportedly found nearby as part of a set of eight during the Edo period, the rest sadly now unaccounted for (Matsuho #2 and #4 = Keino Nakanomidō); one sibling in central Kinki (Matsuho #7 = Nakamura); and two siblings in Izumo (Matsuho #4 = Kōjindani #6, Matsuho #3=Kamo Iwakura #27). As clappers #4 and #7 were also cast from the same mold, Namba suggests that these bells may have made locally by the same artisan group. He also argues, based on the presence of clappers in both the Matsuho bells and the sibling found nearby, that clappers may have been a regional trait specific to Awaji (2019, 35). Given the surprisingly early date of the interment, it may also be the case that the Matsuho dōtaku represent an even older, more intact set than those found further north, and that clappers elsewhere were lost or removed before bells were buried.

### The Kōjindani dōtaku

Six dōtaku found in the San'in region at the site of Kōjindani, Izumo city are very similar to the Matusho find in size (21.7-23.8 cm.) and type (1 and 2), also likely interred in the Early Middle-Middle Yayoi (Shimaneken 1986; fig. 44). However, unlike bells found elsewhere, the Kōjindani bells were found next to two massive caches of bronze weapons: in the summer of 1984, 358 bronze swords (*dōken*) were found on a hillside near Lake Shinji. The swords were bundled and buried in four groups, and postholes suggest the presence of a covering structure (Shimaneken 1985). The discovery of so many bronzes in a single location was unprecedented. The next year and only about 7 meters away, the 6 bells were discovered next to 16 spearheads

(*dōhoko*), the bells buried crown-to-crown in pairs. The two caches were buried at a similar depth and, in consideration of chronologies associated with both the weapons and bell types, are thought to have been interred simultaneously or not long after each other (Shimaneken 1986, 17-18).



**Figure 44: Kōjindani dōtaku and dōhoko *in situ***  
(Shimaneken 1986, pl. 4)

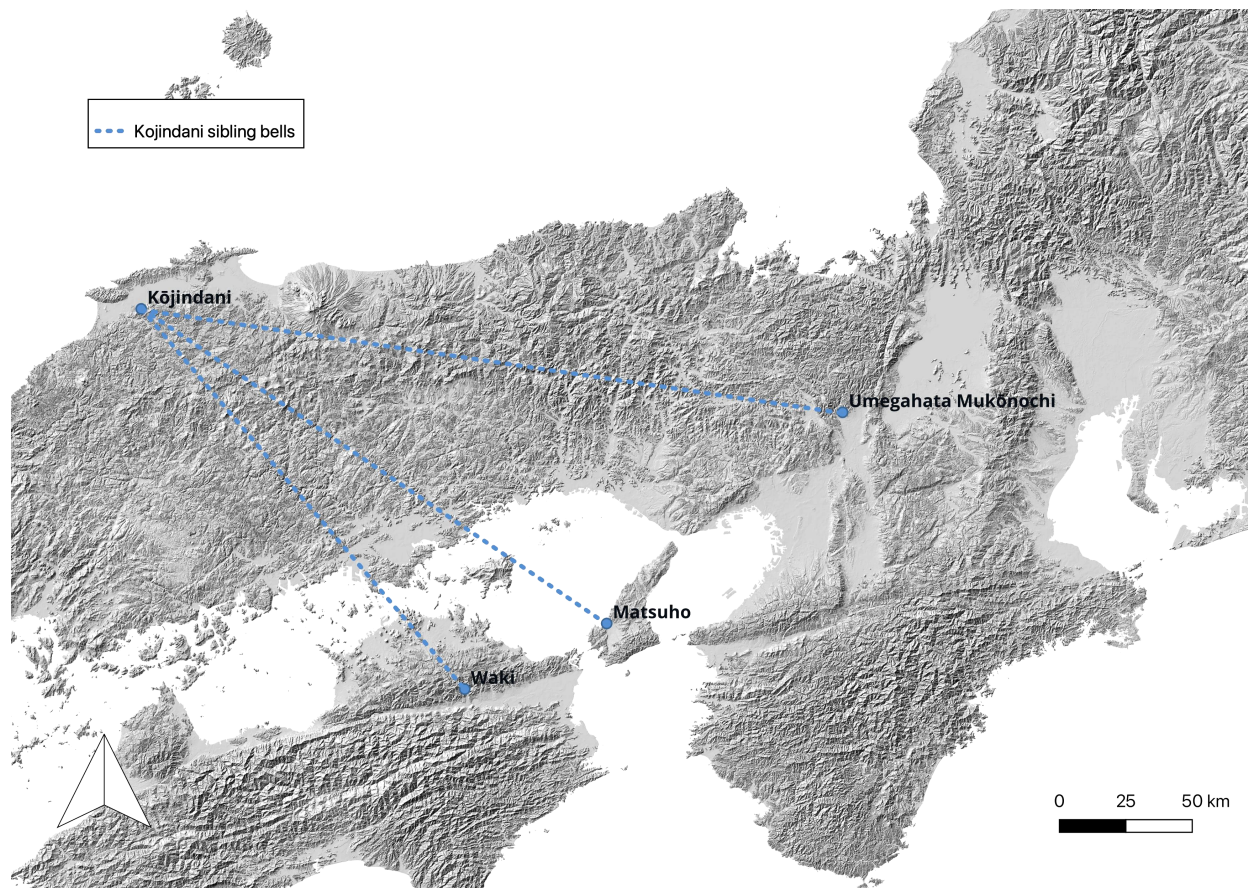


Figure 45: Map of Kōjindani sibling dōtaku

Bell #	Type	Height (cm.)	Sibling	Other Features
1	II-1	23.4		4 panel <i>kasaya</i> sash pattern
2	II-1	23.7	Umegahata (Kyōto) 4	4 panel <i>kasaya</i> sash pattern
3	II-1	22.4	Waki (Tokushima)	4 panel <i>kasaya</i> sash pattern
4	II-1	23.8		4 panel <i>kasaya</i> sash pattern
5	I-1	21.7		2 panel horizontal band pattern
6	II-1	23.7	Matsuho (Hyōgo) 5	4 panel <i>kasaya</i> sash pattern

Table 7: Dōtaku group from Shimane, Izumo, Kōjindani

Three of the Kōjindani bells have siblings, one found in Matsuho (Kōjindani #6 = Matsuho #3), one in Umegahata in the Kyōto basin (Kōjindani #2 = Umegahata #4), and another reportedly from Tokushima province, Mima, Waki, currently held in the Tokyo National Museum (fig. 45, table 7). The simultaneous discovery of so many bronze weapons alongside these dōtaku



demonstrates that the Izumo sibling bell network intersected with at least one other, major bronze exchange network of the Yayoi period, representing a different set of relationships centered further west in Kyūshū. Known bronze weapon siblings sets cast from the same mold exist but are proportionally rare (Yoshida 2014, 267).

#### The Umegahata dōtaku



**Figure 46: Umegahata dōtaku**  
(after Kōbe 1993, 98.173)

Four dōtaku were discovered in the Kyōto basin in 1963 at Umegahata Mukōnochi during part of a residential construction project (Tanabe and Sahara 1964). They are connected through one sibling bell to the Kōjindani find as described and mapped above (Umegahata #4 = Kōjindani #2) (fig. 46, table 8). All are Type II (subtypes 1 and 2). The bells are similar in size to the sets from both Matsuho and Kōjindani (22.4-28.2 cm.), although two have significant damage to the crowns, one completely lost. As the two larger bells are also II-2 types, the set may be slightly later than the Matsuho and Kōjindani bells, but still probably interred no later

than the first century BC. The bells were discovered as nested pairs (1-2, 3-4), like the Izumo bells. The only known sibling bell connected to this set is from Kōjindani, indicating a relationship between groups active in the Kyōto basin and Izumo during the early middle-middle Yayoi.

Bell #	Type	Height (cm.)	Nested	Sibling	Other Features
1	II-1	29.2	2		4 panel <i>kasaya</i> sash pattern
2	II-2	22.4	1		4 panel <i>kasaya</i> sash pattern
3	II-1	23.1	4		4 panel <i>kasaya</i> sash pattern
4	II-2	23.7	3	Kōjindani (Shimane) 2	4 panel <i>kasaya</i> sash pattern

**Table 8: Dōtaku group from Kyōto, Kyōto, Umegahata**

## Stage 2

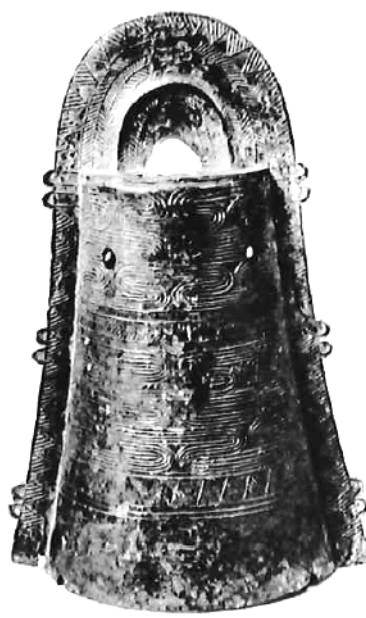
### The Kehi dōtaku

The Kehi dōtaku (Hyōgo province, Toyo'oka city, Kehi, Jimizotani) group consists of four bells, likely the earliest of the Stage 2 groups of the network but not directly connected to any of the Stage 1 sets (fig. 47). Like the Matsuho and Kōjindani bells, the Kehi bells are also all types I and II, but they are nearly twice the size of the former (from 44.2–45.9 cm.). They likely represent an interment dating to the Middle or beginnings of the Late Middle Yayoi. Found in a remote cave in 1912, these dōtaku may also have been a secondary burial, indicated by green rust on their inner walls visible when found, suggesting long exposure to air at some point prior to interment (Inoue 1982). All are decorated with similar figural ornamentation, including depictions of deer and human beings. In addition, the bells are close in size, as is typical of finds of types I and II bells. It therefore seems likely that these dōtaku represent part, if not the entirety, of an original Yayoi period assemblage.





1号鐸 高45.5cm



2号鐸 高45cm



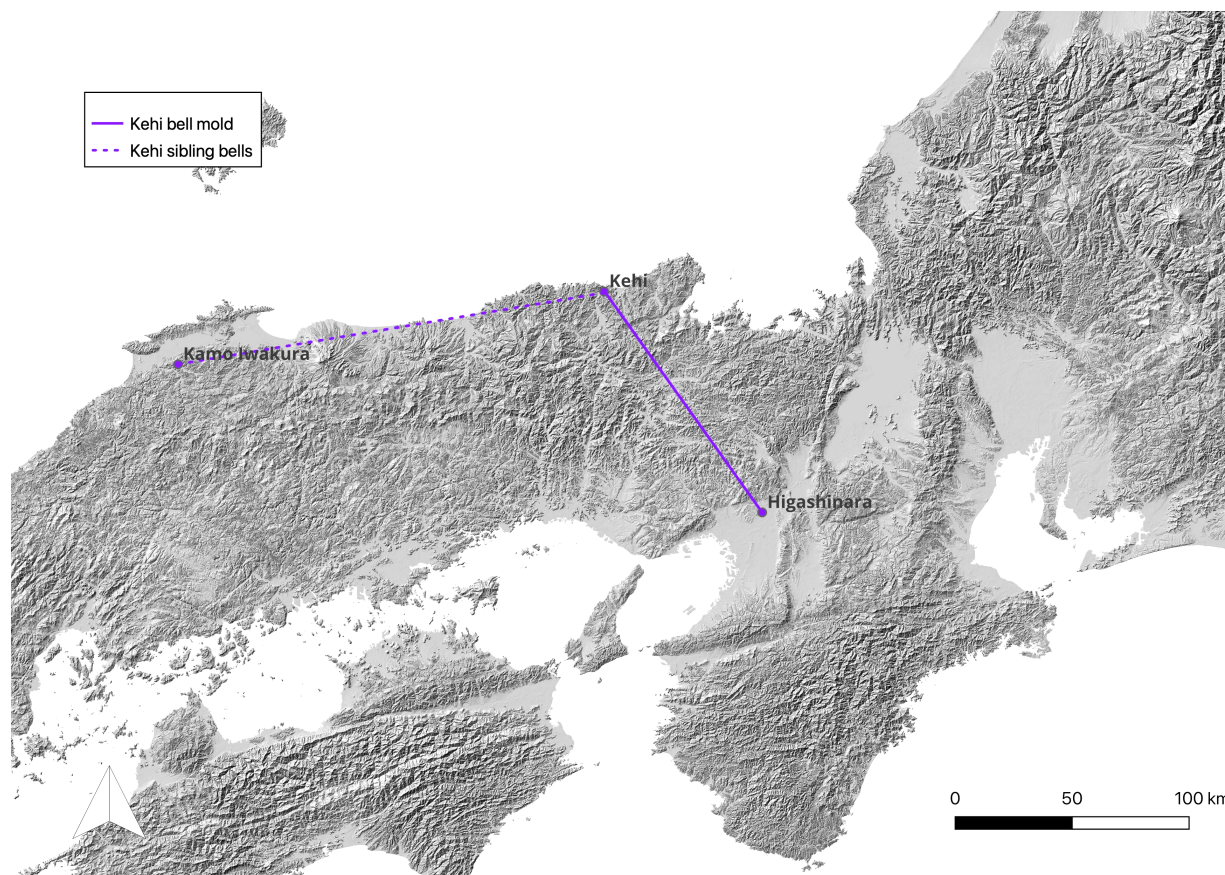
3号鐸 高44cm



4号鐸 高46cm

氣比地区出土銅鐸 国指定重要文化財

Figure 47: Kehi dōtaku  
(Toyo'okashi henshū iinkai 1981, unnumbered opening pl. 1)



**Figure 48: Map of Keji sibling dōtaku and mold**

Bell #	Type	Height (cm.)	Sibling/Mold	Other Features
1	II-2	45.9		2 panel flowing water pattern
2	II-2	44.2	Kame Iwakura (Shimane) 5	2 panel flowing water pattern
3	II-1	44.3	Higashinara (Ōsaka) Mold 3	4 panel vertical flowing water pattern
4	II-2	44.8	Kame Iwakura (Shimane) 21; reportedly from Tōki (Ōsaka); reportedly from Inomukai (Fukui)	3 panel flowing water pattern

**Table 9: Dōtaku group from Hyōgo, Toyo'oka, Keji Jimizotani**

Keji group siblings have been found in Izumo, in central Kinki, and reportedly as far as Fukui in eastern Japan (fig. 48, table 9). Two bells have been matched to two siblings from the large Kame Iwakura node that will be detailed below (Keji #2=Kame Iwakura #5, Keji #4=Kame Iwakura #21). Keji #4 is also sibling to two bells, one reportedly from Tōki in Ōsaka prefecture as well as one reportedly Inomukai in Fukui prefecture. Most importantly, Keji #3 has



been matched to a stone mold fragment found at the Higashinara site in Ōsaka, Ibaraki city (Kōbe 1993, 83; Fig. 10). As no bell within the network has been discovered at or nearby Higashinara, it is possible that Stage 2 bell production centers were removed from areas where the bells were used, and that the people who made them were not necessarily the same groups as those who buried them. This potentially hints towards the beginnings of specialized dōtaku production in the central Kinki region during the Middle to Late Middle Yayoi.



**Figure 49: Kehi dōtaku #3 and matching stone mold from Higashinara (Ōsaka)**  
 (Kōbe 1993, 83)

## The Kamo Iwakura dōtaku

In 1996 in the town of Kamo, Utsunomiya city in Shimane, only 3.4 km. from where the Kōjindani bells and spearheads had been previously found in 1985, construction on agricultural roads was abruptly halted when workers pulled several dōtaku out of a heavy machinery sand bucket. While the pit was disturbed, some bells remained *in situ*, allowing archaeologists to infer the original placement of a group of 39 bells, most nested as pairs (Kamomachi 1997; Shimaneken and Kamomachi 2002; fig. 50). Up until that point, the location where most dōtaku had been found in a single assemblage was in Yasu city, Shiga prefecture, where a set of 14 (1881) and then 10 (1962) bells had been unearthed. The Yasu bells are late and large (the highest 134.7 cm.), all Kinki and San'en (type V) types and therefore individually cast from clay molds (Yasuchō 1998), indicating that they were cast within a distinct set of technological and social institutions from the bells of the present network.

Bells in the Kamo Iwakura group are all of types II (subtypes 1 and 2) and III (subtypes 1 and 2), ranging in height from 30 to 47.7 cm., indicating that they were made and buried sometime during the Late Middle to Middle Late Yayoi. Over half of the bells (26) have known siblings within the set itself, in major groups (Kehi and Sakuragaoka), or individual finds that span much of central Honshu, from Shikoku to eastern Japan (fig. 51, table 10). In addition to being siblings with each other, for example, bells #4, #7, #19, and #22 are also siblings with a bell found at Ōta • Kuroda in Wakayama prefecture, implying an original group of at least five. Interestingly, the Ōta • Kuroda bell was excavated with a stone clapper (Wakayama 1974), indicating that although clappers were removed from bells in Izumo, this was not the case everywhere, and there was likely considerable flexibility regarding clapper material across the network. Only one bell in the group (Kamo Iwakura #15) could potentially be classified as type

III, more likely a late type II; this bell has a sibling reportedly from Awaji at Ichinomiya, confirming that sibling bells were only made before the Late Middle Yayoi.

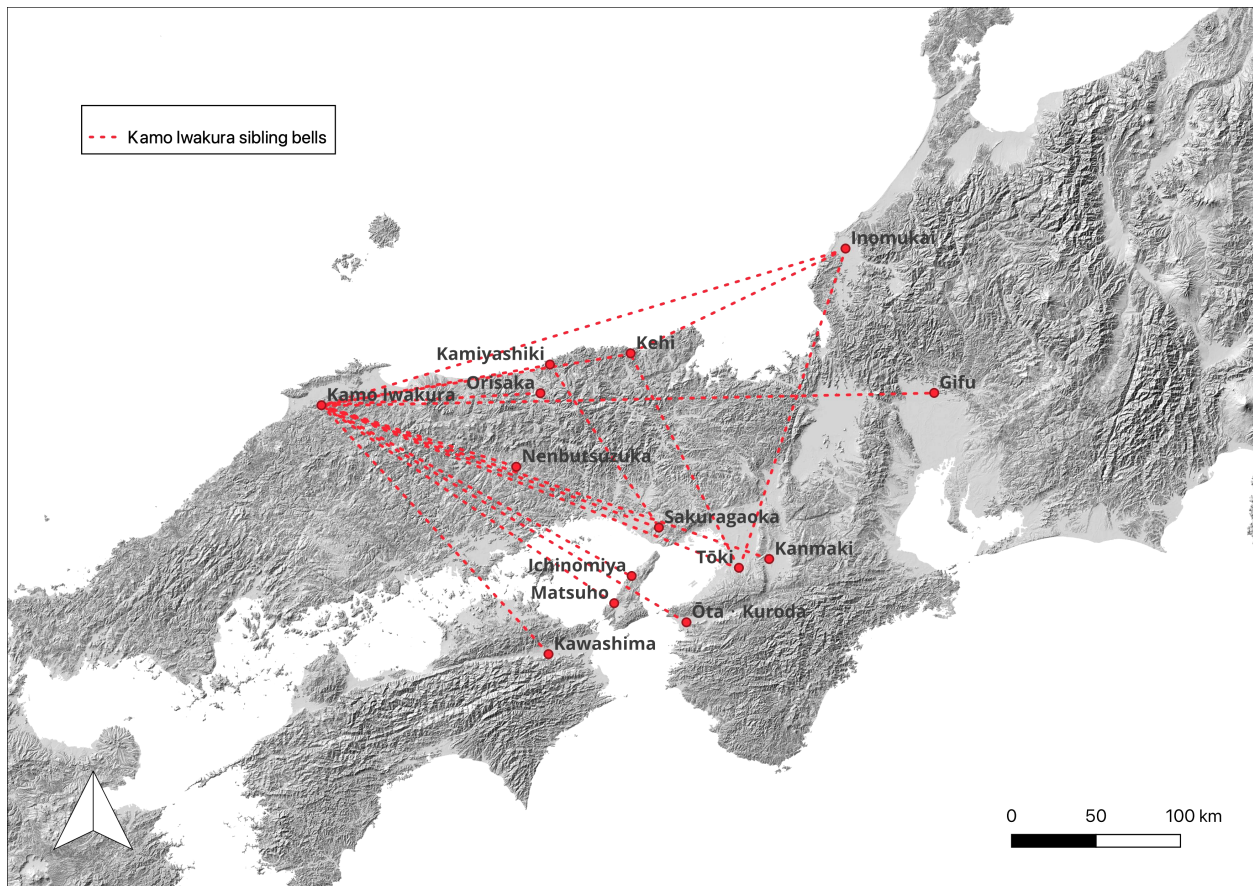
卷頭図版1



加茂岩倉遺跡出土銅鐸群

Figure 50: Kamo Iwakura dōtaku





**Figure 51: Map of Kamo Iwakura sibling dōtaku**

The most newly excavated sibling to the Kamo Iwakura set is a previously mentioned type II-1 bell from Matsuho (Kamo Iwakura #27 = Matsuho #3). The Matsuho find thus represents a connection point of the two Izumo nodes, as well as a likely origin point of the two stages within the Izumo sibling network. As the Matsuho group of 7 has yielded a bell that is siblings with a bell from the earlier Kōjindani find (Kōjindani #6 = Matsuho #5), also type II-1, it appears that the Kōjindani and Kamo Iwakura sets were connected not only by proximity, but may have been used then buried by descendants of the same group of people over an extended period of time. In other words, the fact that Matsuho sibling bells are present in *both* Stage 1 and

Stage 2 Izumo bell sets demonstrates that although they were most likely made by and obtained from the people of Awaji island simultaneously, they were kept, used, and then buried at different times by multiple generations of the same people living in the Izumo region from the Early Middle through Late Middle Yayoi period, a span of at least 150 years. Another possibility, taking into consideration the discovery of the larger, later bell also reportedly found on Awaji at Ichinomiya, would be a sustained, bell-based relationship between the peoples of Awaji Island and Izumo that lasted until the Late Yayoi.

Bell #	Type	Height (cm.)	Nested	Sibling	Other Features
1	III-2	47	likely 4	Kamo Iwakura (Shimane) 26	4 panel <i>kasaya</i> sash pattern
2	II-2	43.5	3		2 panel flowing water pattern
3	II-1	31.1	2	Kamo Iwakura (Shimane) 30	4 panel <i>kasaya</i> sash pattern
4	II-1	31.1	likely 1	Kamo Iwakura (Shimane) 7, 19, 22; Ōta · Kuroda (Wakayama)	4 panel <i>kasaya</i> sash pattern
5	II-2	45.1	6	Kehi (Hyōgo) 2	2 panel flowing water pattern
6	II-1	31.4	5	Kamo Iwakura (Shimane) 9; Tatsuuma Archaeological Museum 419	4 panel <i>kasaya</i> sash pattern
7	II-1	30.6	likely 28	Kamo Iwakura (Shimane) 4; 19, 22; Ōta · Kuroda (Wakayama)	4 panel <i>kasaya</i> sash pattern
8	III-2	46.6	9		6 panel <i>kasaya</i> sash pattern
9	II-1	31.4	8	Kamo Iwakura (Shimane) 6; Tatsuuma Archaeological Museum 419	4 panel <i>kasaya</i> sash pattern
10	III-2	45.8			6 panel <i>kasaya</i> sash pattern
11	II-2	44	12	Kawashima (Tokushima)	2 panel flowing water pattern
12	II-1	30.7	11		4 panel <i>kasaya</i> sash pattern
13	III-2	44.8	14	Orisaka (Tottori)	4 panel <i>kasaya</i> sash pattern
14	II-1	31.1	13	Kamo Iwakura (Shimane) 33	4 panel <i>kasaya</i> sash pattern
15	III-1	46	16	Reportedly Ichinomiya (Hyōgo)	2 panel flowing water pattern
16	II-1	30.6	15	reportedly Gifu (Minono)	4 panel <i>kasaya</i> sash pattern
17	II-1	30		Nara (Kanmaki)	4 panel <i>kasaya</i> sash pattern
18	III-2	47.7	19		4 panel <i>kasaya</i> sash pattern
19	II-1	31.3	18	Kamo Iwakura (Shimane) 4, 7, 22; Ōta · Kuroda (Wakayama)	4 panel <i>kasaya</i> sash pattern
20	III-2	45.4			6 panel <i>kasaya</i> sash pattern
21	II-2	44.6		Kehi (Hyōgo) 4; reportedly Tōki (Ōsaka); reportedly Inomukai (Fukui)	3 panel flowing water pattern
22	II-1	31.4		Kamo Iwakura (Shimane) 4, 7, 19; Ōta · Kuroda (Wakayama)	4 panel <i>kasaya</i> sash pattern
23	III-2	47.5			4 panel <i>kasaya</i> sash pattern
24	II-1	31.3		Kamo Iwakura (Shimane) 38, 39	4 panel <i>kasaya</i> sash pattern
25	II-1	30.5			4 panel <i>kasaya</i> sash pattern

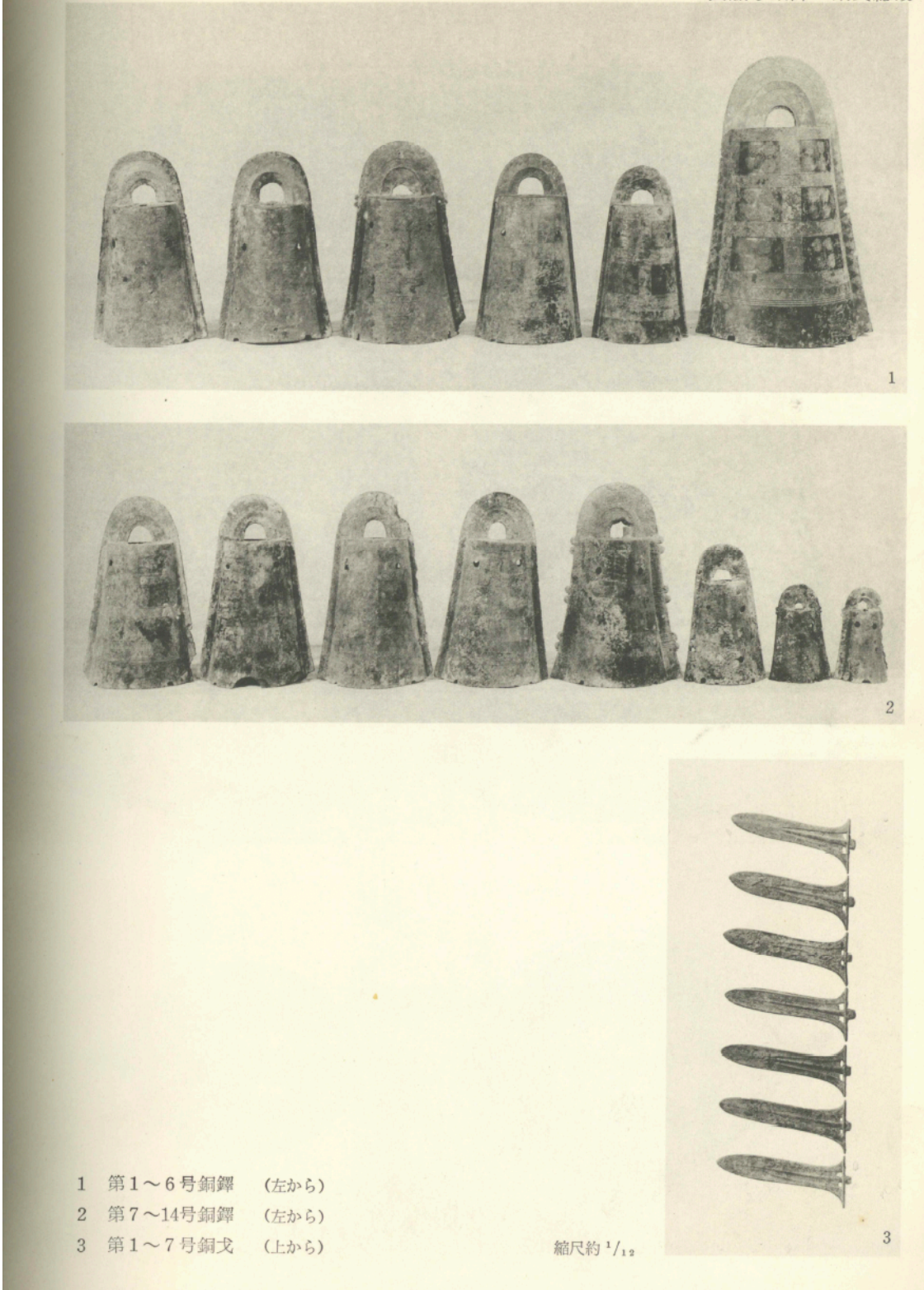
26	III-2	46.9	27	Kamo Iwakura (Shimane) 1	4 panel <i>kasaya</i> sash pattern
27	II-1	31.4	26	Matsuho (Hyōgo) 3	4 panel <i>kasaya</i> sash pattern
28	III-1	45.1	likely 7		2 panel flowing water pattern
29	III-2	46.9	30		6 panel <i>kasaya</i> sash pattern
30	II-1	32.3	29	Kamo Iwakura (Shimane) 3	4 panel <i>kasaya</i> sash pattern
31	II-2	45.3	39	Kamo Iwakura (Shimane) 32, 34; Kamiyashiki (Tottori); Sakuragaoka 3	2 panel flowing water pattern
32	II-2	45.3	33	Kamo Iwakura (Shimane) 31, 34; Kamiyashiki (Tottori); Sakuragaoka 3	2 panel flowing water pattern
33	II-1	31.6	32	Kamo Iwakura (Shimane) 14	4 panel <i>kasaya</i> sash pattern
34	II-2	44.6		Kamo Iwakura (Shimane) 32, 34; Kamiyashiki (Tottori); Sakuragaoka 3	2 panel flowing water pattern
35	III-2	47.4	36		4 panel <i>kasaya</i> sash pattern
36	II-1	30.3	35	Nenbutsuzuka (Okayama)	4 panel <i>kasaya</i> sash pattern
37	II-2	45.4	38		4 panel <i>kasaya</i> sash pattern
38	II-1	31	37	Kamo Iwakura (Shimane) 24, 39	4 panel <i>kasaya</i> sash pattern
39	II-1	31	31	Kamo Iwakura (Shimane) 24, 38	4 panel <i>kasaya</i> sash pattern

**Table 10: Dōtaku from Shimane, Unnan, Kamo Iwakura**

### The Sakuragaoka dōtaku

In 1964, a group of 14 bells and 7 bronze halberds (*dōka*) were unearthed in Kōbe, Hyōgo prefecture, in the eastern foothills of the Rokkō mountain range (Sakuragaoka 1969; fig. 52). The Sakuragaoka bells are by far the most diverse and likely latest interred set in this sibling network, consisting of types II and III (subtype “new”). The bells range in size from 21 to 63.7 cm., some with figural scenes of turtles, dragonflies, and humans husking rice (fig. 37). Namba believes that during the Late Middle Yayoi, subtypes of type III bells could have been made by more than 10 separate workshops (2017, 15). The halberds are of the Ōsaka Bay area type. During this part of the Middle Yayoi, there was also considerable diversity in and highly dispersed clusters of bronze weapon workshops from Kyūshū through Shikoku and western Honshu (Yoshida 1993).





- 1 第1～6号銅鐸 (左から)
- 2 第7～14号銅鐸 (左から)
- 3 第1～7号銅戈 (上から)

縮尺約 1/12

Figure 52: The Sakuragaoka dōtaku and dōka (halberds)  
(Sakuragaoka 1969, pl. 3)

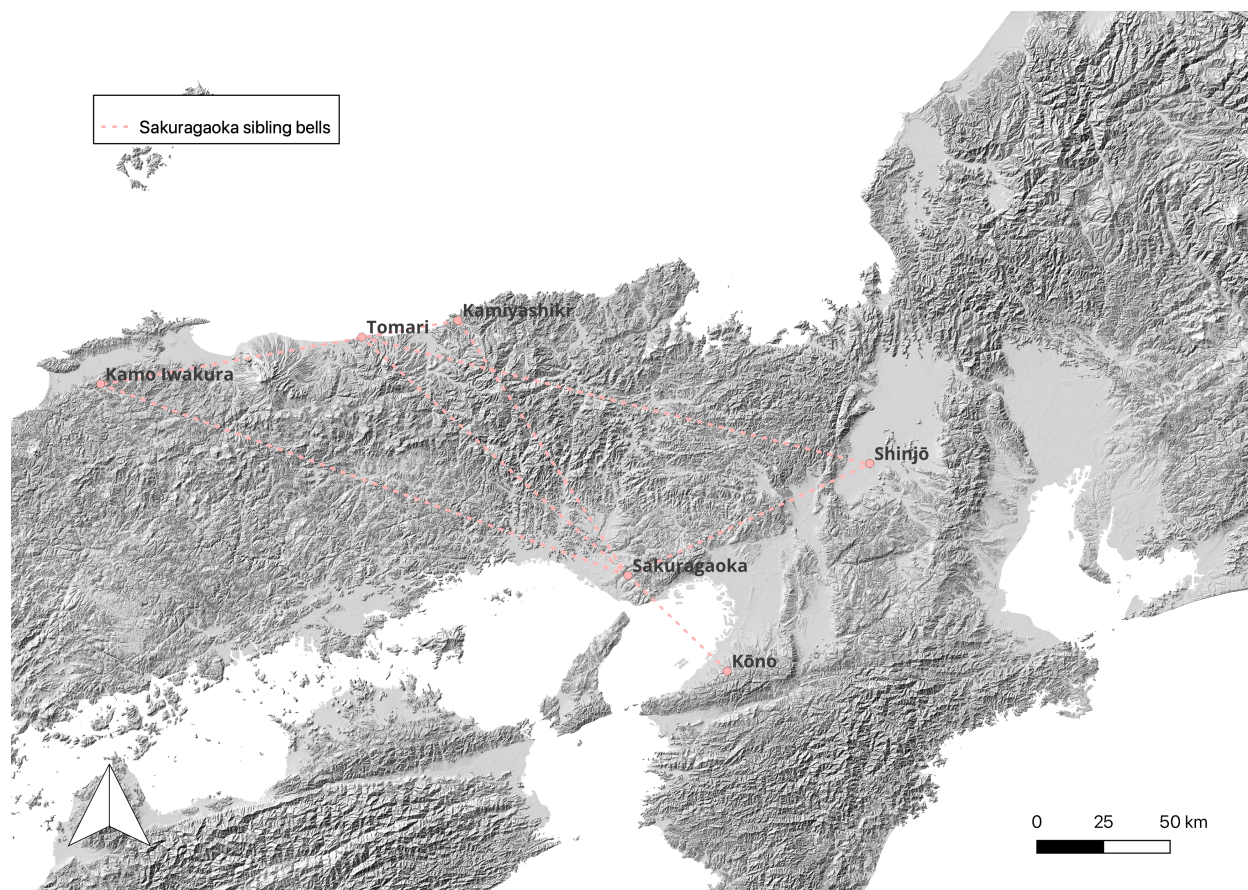


Figure 53: Map of Sakuragaoka sibling dōtaku

Bell #	Type	Height (cm.)	Sibling	Other Features
1	II-1	42.9	Tatsuuma 404, 405; Tomari (Tottori), Shinjō (Shiga)	2 panel flowing water pattern
2	II-1	42.4	Kōno (Ōsaka)	2 panel flowing water pattern
3	II-2	45.2	Kamo Iwakura 31, 32, 34; Kamiyashiki (Tottori)	2 panel flowing water pattern
4	III-2	42		4 panel <i>kasaya</i> sash pattern
5	III-2	39.2		4 panel <i>kasaya</i> sash pattern
6	III-2	63.7		6 panel <i>kasaya</i> sash pattern
7	III-2	41.9		6 panel <i>kasaya</i> sash pattern
8	III-2	42.2		6 panel <i>kasaya</i> sash pattern
9	III-2	42.9		6 panel <i>kasaya</i> sash pattern
10	III-2	42.8		6 panel <i>kasaya</i> sash pattern
11	III-2	45.3		4 panel <i>kasaya</i> sash pattern
12	II-2	31.4		4 panel <i>kasaya</i> sash pattern
13	III-2	21.9		4 panel <i>kasaya</i> sash pattern
14	III-2	21		4 panel <i>kasaya</i> sash pattern

Table 11: Dōtaku from Hyōgo, Kōbe, Sakuragaoka

Only #1, #2, and #3 in the Sakuragaoka group have siblings, all three earlier type II bells, indicating that the practice of casting siblings had already begun to decline by the time the set was buried (fig. 53, table 11). In addition to bell #3 having three siblings in the Kamo Iwakura group (Sakuragaoka #3 = Kamo Iwakura #31, #32, #34), #1 has at least four siblings, two unprovenanced examples at the Tatsuuma Archaeological Museum (Sakuragaoka #1 = Tatsuuma #404, #405), one found along the coast in northern Tottori at Tomari (Sakuragaoka #1 = Tomari) with two bronze clappers inside, and another from Shinjō in Shiga (Sakuragaoka #1 = Shinjō), apparently first discovered as a set of four in 1799, although the rest are lost (Umehara 1927). A sibling of Sakuragaoka #2 was found nearby at Kōno in Ōsaka. The Sakuragaoka node therefore boasts the only sibling within the network found in relative proximity to the group itself, all siblings spreading out in a radial pattern, prefiguring the approaching consolidation of dōtaku production in the Kinai region.

## Conclusions

### Creating (Fictive) Kinship through a Shared Soundscape

In recent decades, ethnomusicologists have convincingly shown that music, often the reinvention of entirely novel practices based on conceptions of heritage, plays a central role in forming the ethnic identity of diverse communities in global diaspora (Bafekr and Leman 1999; Reyes-Ruiz 2005; Chapman 2005; Baily 2006; Boura 2006; Roberson 2010; Carstensen-Egwuom 2011; Brennan 2012; Silverman 2012; Alajaji 2013; Robinson 2013; Lidskog 2016). Millennia removed in time with no textual records to provide a framework, the musicological outlines of Yayoi music as people established agricultural society in western Japan are

impossible to recover.<sup>36</sup> However, reasoning from form and distribution, some tentative suggestions might be made about the function of dōtaku in relation to the formation of Yayoi cultural identity.

The Initial Yayoi period began from the 9th to 8<sup>th</sup> century BC in Northern Kyūshū, but the “Yayoi package” comes to western Japan several centuries later. Kazuo Miyamoto has written,

The dispersion period of Itazuke Ib-Itazuke Iia type (Ongawa type) pottery to the Seto Inland and Kinai regions corresponds with the 6<sup>th</sup> to 5<sup>th</sup> century BC. During this stage, wet rice paddies, wooden coffins, moated settlements etc. were selectively accepted and the Yayoi culture as a rice farming society was formed. One should raise this dispersion period as a major turning point in the production economy.” (2018, 23 trans.)

Thus the beginnings of Yayoi agricultural economy in western Japan are clearly visible in the material record, but social institutions are harder to see. Evidence points towards a cultural zone in flux: Fujio Shin’ichiro has also demonstrated, through comparison of carbonized remains on both Jōmon and Yayoi materials found throughout the Ōsaka Plain, that during initial phases of the entrance of Yayoi culture into western Japan, indigenous Jōmon and Yayoi people coexisted; this was true throughout at least the first 100-150 years of wet rice paddy cultivation in the area, a process that lagged by yet another 100 years in the Nara basin (2009).<sup>37</sup> The subsequent Middle Yayoi period, beginning by the second century BC in western Japan, therefore represents a moment during which groups in central Honshu had just coalesced as a unified culture – but were far from ethnically homogenous.

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<sup>36</sup> Sets of dōtaku were clearly not melodic. Their musical role was most likely timbre or rhythm oriented; they could either have been suspended from a frame, tree branch, or architectural feature, or held by/attached to the body.

<sup>37</sup> Gina Barnes provides a concise summary of the difficulties and debates concerning “Yayoi period” and “Yayoi culture” and the transition from the Jōmon period in English (2019).



Unlike communities in northern Kyūshū, for which mortuary evidence demonstrates that hierarchy had already emerged during the middle Yayoi, there is as yet no clear evidence for hierarchical or genealogical social structures during the middle Yayoi in western Japan (Shitara 2011). What, then, were the mechanisms that allowed for the formation of a coherent enough cultural identity that society coalesced and stratified in the Kinai region during the subsequent Late Yayoi? I believe that the frequent casting, distribution, and ringing of multiple bells made from the same mold – the creation of a kindred soundscape – may have provided an answer, based on the idiom or social memory of kinship structures that existed in migrants’ past homes. It almost seems too obvious to link the concept of *kyōdai dōtaku* or sibling bells to the existence of a pseudo-familial network, but despite the ubiquity of the term in publications after the mid 1960s (see n.2), this connection has remained entirely implicit if intended at all.

As bronze production centers do not exist before the end of the Middle Yayoi in western Japan (as mentioned, bronze casting was still highly decentralized at this point; see Kataoka 1999 and Tajiiri 2001), we do not know if the *dōtaku* in each sibling set were cast at once in one location then distributed, or if the molds themselves were distributed and then bells were cast in different regions at different times. All we know for certain is that up to five *dōtaku* cast from the same mold are found either together or in distant regions, interred in groups in stages in similar modes. Given these synchronicities, it is hard to imagine that groups across the network were unaware of one another’s practices. The wide distribution of sibling bells, as opposed to clusters of siblings in adjacent regions, also shows that cross-regional distribution was purposeful. Yayoi bell holders, I believe, were aware of where the siblings to their own bells were kept and used, and they may have seen fellow bell-holders as family. *Dōtaku* may have accompanied the movement of people and heralded exchange of actual individuals through

marriage ties. They may have even served as surrogates for people, which would also make sense within a narrative of indigenous traditions of object animism. If the bells were indeed anthropomorphized or even imbued with some level of agency, the interment of pairs would have been not unlike the entombment of a couple, and large set burial locations may have been perceived as cemeteries.

If the Matusho radiocarbon dates are to be trusted, moreover, *dōtaku* culture in western Japan may well have been more intimately linked to the instantiation of Yayoi culture in the region than previously believed. More direct dating of *dōtaku* interments will be necessary to confirm the Matusho results, but assuming some temporal distance between casting and interment, the Matusho bells place the beginnings of *dōtaku* culture within the Early Middle Yayoi in western Japan, during the third or fourth century BC, well before the establishment of the Lelang commandery (108 BC).

The decline of the sibling phenomenon and the shift to clay mold-cast *dōtaku*

Finally, two additional points should be made regarding *dōtaku* production technology. First, Middle Yayoi bronze weapons were sometimes but much less commonly cast from the same mold. Despite the fact that the polishing process can obscure casting marks, “cases clearly not made from the same mold are overwhelmingly numerous” (Yoshida 2014, 267 *trans.*). This stands in stark contrast to the fact that 70% of known type II *dōtaku* have siblings, a percentage that would no doubt have originally been higher (Namba 2000; Yoshida 2014, 268). Reasons for this may have had to do with the efficiency of respective casting processes – casting a hollow object is more time consuming – but the fact that so many *dōtaku* were cast as siblings while most weapons were not may also point towards a more fundamental difference in the social

function of the two categories of implements. Additionally, sibling *dōtaku* became less common towards the end of the Middle Yayoi period, after which large, type IV ornamental bells cast in clay molds predominate. It would be tempting to say that this was a direct result of the import of clay mold technology after the establishment of the Lelang commandery, but as Yoshinori Tajiri points out, the decline of the sibling bell phenomenon slightly predates the use of clay molds (2012, 13). Both factors signal an important possibility: that the socio-musical function of sibling bells drove shifts in the production process, rather than the other way around. Bells cast from the same mold may therefore have served as a cohesive social force, a system bonding groups in a relatively egalitarian network through sound and material. This network remained strong until processes of social stratification took hold in the Kinai region, accelerating at the end of the Middle Yayoi. Thereafter *dōtaku* shifted from ringing sounds of kinship (“bells to be heard”) to serving as visual symbols of power (“bells to be seen”).

## Chapter 5: “Silk” – Zithers and the Formation of Complex Society in Japan

“I am filled with dread, my lord; keep playing Your Majesty’s zither!”  
And so he finally drew his mighty zither to him and began to play  
half-heartedly. After a while, the royal zither ceased playing.  
Straightaway they lifted lights to look.  
His Majesty had passed away.

-- *Kojiki*, Sovereign Chūai<sup>38</sup>

### Introduction

Approximately 200 zithers or zither parts have been excavated at 99 sites throughout the Japanese archipelago, from as early as the second half of the Late Jōmon through the Kofun period (ca. 1500 BC–600 AD; fig. 54). This number does not include the small, movable wood zither bridges also made from the Yayoi period forward (ca. 900 BC–250 AD), or the *haniwa* zither musician figurines and semiprecious hardstone bridges from the Kofun (ca. 250–600 AD). Many of these simple, wood stringed instruments are akin to the *yamatogoto* (大和琴・倭琴) or *wagon* (和琴) now used in *gagaku* imperial ceremonial music (fig. 55), also potentially ancestral to the *koto* and the various zithers central to the musical traditions of East and Southeast Asia.<sup>39</sup>

The surprising number of wood objects preserved from such early periods is due in part to the

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38 In this scene, traditionally dated to the year 200 by the *Nihon shoki*, Emperor Chūai’s reign ends because of his reluctance to follow the urgings of a spirit oracle to conquer the Kingdom of Silla. The expression of dread and exhortation to continue playing the zither comes from the Emperor’s chief minister, Takenouchi no Sukune. Thus in the *Kojiki* (completed in 712), zither playing is a clear metaphor for effective governance. This translation is from Gustav Heldt (2014, 112). See also notes on this passage and zithers by Aoki Kazuo in his edition of the *Kojiki* (1982, 197 for the passage, 450 for notes).

39 Colloquially the contemporary Japanese zither, the *koto*, can be written as either 琴 and 箏, although strictly speaking *koto* refers exclusively to a zither with 13 or more strings and movable bridges, whereas the instrument most often referred to nowadays as *guqin* is a seven-string zither without bridges. Until recently the *guqin* was more often referred to simply as *qin*, and today either term may be used. Note that *qin* 琴 is used in composite names for many Chinese instruments that feature strings, including the bowed lutes generally known as *huqin* 胡琴 and even the piano (*gangqin* 鋼琴).



prevalence of waterlogged sites throughout the country (fig. 56), the often-unclear stratigraphy of which also makes it difficult to date the objects precisely. Excavated zithers were made from a wide variety of wood types, sometimes more than one type for a single instrument, most commonly Japanese cedar (*sugi*) and cypress (*hinoki*), but also *asunaro* cypress, *sawara* cypress, mulberry (*yamaguwa*), nutmeg (*kaya*), plum yew (*inugaya*), camphor (*kusunoki*), chestnut (*kuri*), red oak (*akagashi*), ash (*toneriko*), fir (*momii*), and umbrella pine (*kōyamaki*). Unfortunately no zither strings from these periods survive, but one can surmise that they would first have been made of a natural fiber like hemp or even gut, then eventually silk, once silk became common.<sup>40</sup>

Japan is likely home to the oldest surviving zithers in East Asia and to my knowledge the only culture with a significant number of chordophones that remain from a pre- or protohistoric period. Excavated wood instruments date to throughout the first millennia BC and AD, before, during, and after the beginnings of settled agriculture, the introduction of metallurgy, and through initial stages of formation of the Japanese state in the Nara basin. Early Japanese zithers are therefore unique in allowing for observation of the relationship between music and early stages in the formation of complex society in the *longue durée*. In addition, zithers predating the Kofun period are not found in mortuary contexts, creating both challenges in and additional possibilities for interpreting ancient music outside the bounds of funerary ritual alone. While social complexity is typically observed through methods such as settlement archaeology and mortuary analysis, I ask whether excavated musical instruments might also be used as indicators of stratification, when integrated into holistic observations of social and technological developments.

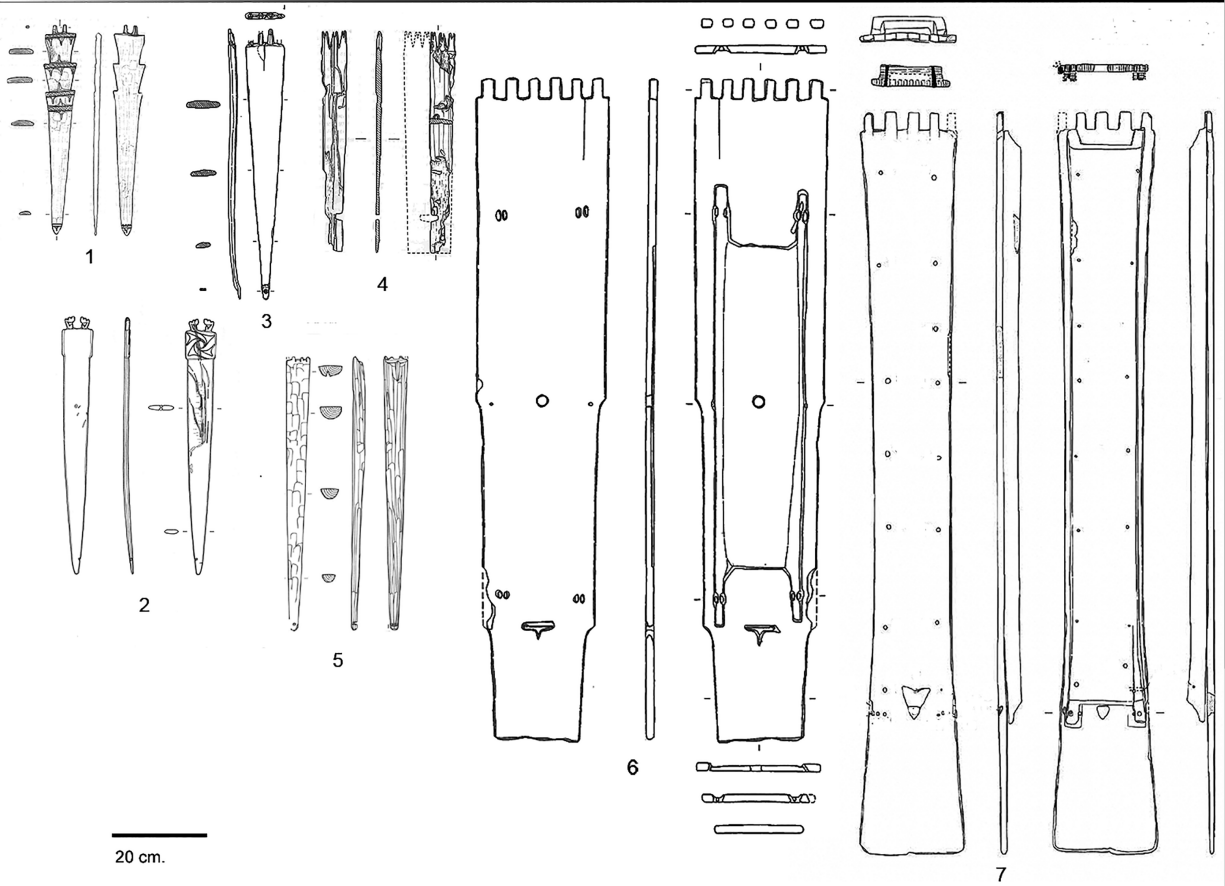
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<sup>40</sup> Some examples of coarse silk have been found dating to the Yayoi period, even to the early Yayoi in Kyushu (Nunome 1995), so it is conceivable that silk strings could have been used for Yayoi zithers.

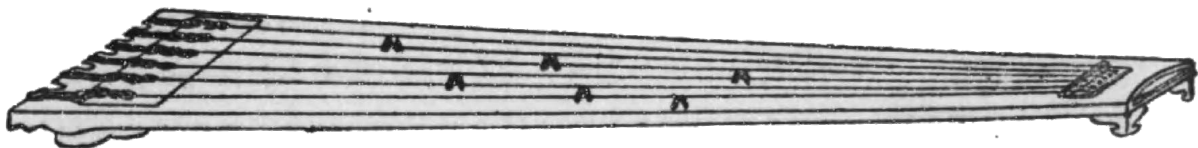
Middle Late-Final Jomon  
(ca. 1500 BC-900/600 BC)

Yayoi  
(ca. 900/600 BC-250 AD)

Kofun  
(ca. 250 AD-600 AD)



**Figure 54:** Japanese proto-zithers and zithers from the Late Jōmon through the Kofun  
 1: Late Jōmon Type A: Shiga, Hikone, Matsubara Naiko (Hosokawa 1987, 109); 2: Final Jōmon Type A: Aomori, Hachinohe, Korekawa (Suzuki 2012, 29); 3: Yayoi III Type A: Kagawa, Takamatsu, Fuseishi, Idehigashi (Takamatsushi 1995, 84); 4: Yayoi V Type B: Kyōto, Naka, Ōmiya, Shōgaki (Kyōtofu 1987, 56); 5: Early Late Yayoi Type C: Shizuoka, Hamamatsu, Kakue (Shizuokaken 1996, 117); 6: Late Yayoi Type D: Fukuoka, Kasuga, Tsujibatake (Fukuokaken 1979, 103); 7: Late Kofun Type D: Shimane, Yatsuka, Yakumo, Maeda (Yakumomura 2001, 59)



**Figure 55:** Illustration of a modern yamatogoto  
 Note movable bridges and stationary “pegs” protruding at the tail, to which ashizuo (葦津緒) ropes affix strings (after Tanabe 1926, 59)



**Figure 56: Yayoi zither in situ, waterlogged, from Jōkansu**  
(Maebayashi 1996, 4)

In this chapter, I explore three main hypotheses about the relationship between music and state formation in Japan through analysis of early Japanese proto-zithers and zithers, from the Jōmon through the Kofun:

- 1) Increased concern for volume capacity in the integral construction of musical instruments can be broadly indicative of music performed by an individual or ensemble for a non-participatory *audience*, in line with the musical needs of growing communities and their leaders.

- 2) Deliberate diversity in both the forms and ornamentation styles of similar instruments made of the same material can be characteristic of the musical instruments of incipient and early states.
- 3) Instruments that are usually played while sitting down can reflect an overall shift in the cultural habitus, in which sitting becomes more common in specialized contexts that either directly serve or characterize elite identity.

These hypotheses should be understood simply as starting points in archaeological hermeneutic circles (Hodder 1992, 213-241); while proof remains somewhat more speculative than it does in less humanistic subfields of archaeology, or in historical periods, framing the discussion in this manner allows for integration of research about prehistoric zithers into comparative anthropological questions. This juxtaposition of music archaeology and state formation is not to suggest that the musical traditions always follow set evolutionary schema, which they do not, but to enable meaningful discussion about cross-cultural patterns. To that effect, I also introduce points of contrast with early Chinese civilization, from which zithers are first attested from the Warring States period, over a millennium after the establishment of what is typically interpreted as the first Chinese state at Erlitou (ca. 1900 BC).

To address the first two hypotheses, I observe diachronic changes in the forms of Japanese zithers, focusing on the Jōmon through the Kofun, highlighting the development of the resonator and the diversity in types of zithers from the Late Middle Yayoi forward. Organological observations are founded on nearly a century of typological scholarship by Japanese archaeologists. An additional aim of this chapter is therefore to synthesize and bring their work, as well as discussions about the nature of Japanese state formation, to light in a novel context. To address the third hypothesis, I reference visual depictions of zither playing in Late Kofun *haniwa* zither musician figures, and early depictions of zither playing in China and Korea

as well. I elucidate the concurrent development of *yamatogoto* culture and the act of sitting in protohistoric Japanese society, highlighting initial indications of sedentary, meditative artistry, a physical posture that would thereafter become synonymous with East Asian elite identity.

Finally, it is important to point out that in this chapter I include some objects that are poorly preserved and/or the identification of which as musical instruments may be controversial. I have consciously decided to adopt an approach as inclusive as possible and consider all relevant objects that Japanese archaeologists define as zithers in publications (in this case, most often, as 「琴」) so that the data exists in one place in English and that readers may decide for themselves. As a result, what concurrently emerges is the prehistory of the *yamatogoto* as a narrative told in modern Japan. Whether or not one agrees that a given object was in fact a zither, this approach also reveals how ardently musicologists and archaeologists of Japan have strived to see familiar forms of musicality in the distant past – which, in the case of the *yamatogoto*, may say as much about the inextricability of beliefs about ancient music and national identity as it does about the objects themselves.

## Context, Previous Research

The first wood stringed instruments excavated in Japan were twenty late Jōmon period objects, small (at most about 50 cm. long) and many ornamentally carved, found in 1926 at the Korekawa site in Aomori prefecture (Ōsato 1927; fig. 57).<sup>41</sup> Excavators first identified them as “spatula-form wooden objects” (*heragata mokuseihin*), and suggestions that they could be

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<sup>41</sup> For a detailed account of the excavation history of the Korekawa site as related to the instruments found there, see Suzuki 2012, 9-15.

musical instruments were not made until the 1970s (Mori 1973; Suzuki 1978). Some disagreement about their intended function remains, and archaeologists have perennially raised the possibility that they could have been weaving implements, based on comparison to Ainu weaving tools (Sugiyama 1928; Matsuzawa 1996). However, this claim does not neatly line up with current understandings of the chronology or regional distribution of textile technology in Japan, where evidence of frameless looms appears in northern Kyūshū during the Initial Yayoi and thereafter during the Early Yayoi in the Kinki region (Higashimura 2011). In my opinion formal similarity to ethnographic objects used in textile production may rather be evidence of the synchronous development of wood textile tools and stringed instruments, as will be discussed towards the end of this chapter.

第十六圖版

篋狀木製品 其一  
基川村中居遺跡出土

PL. 16

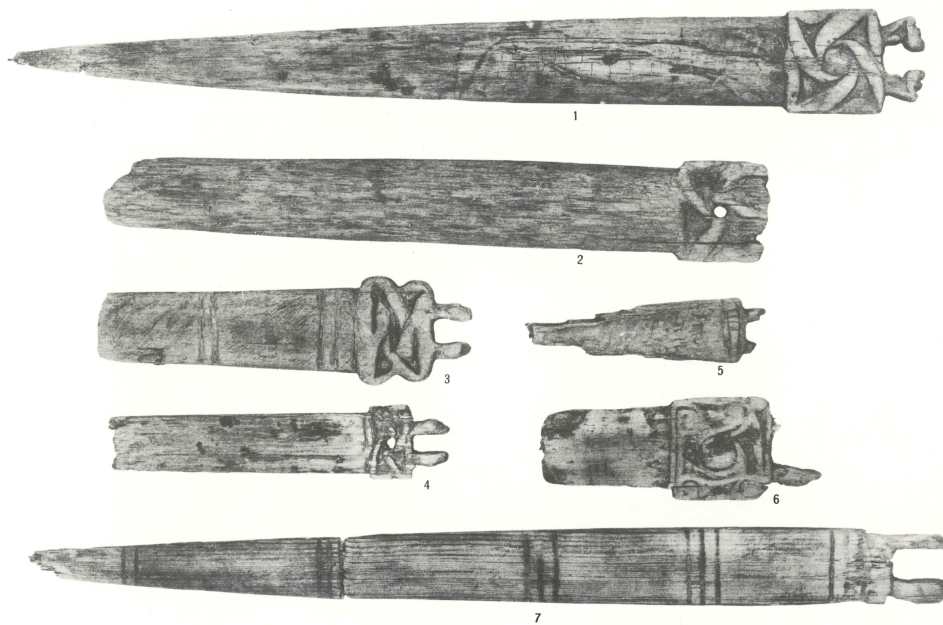


Figure 57: Final Jōmon proto-zithers from Korekawa  
(Kita and Sugiyama 1932)

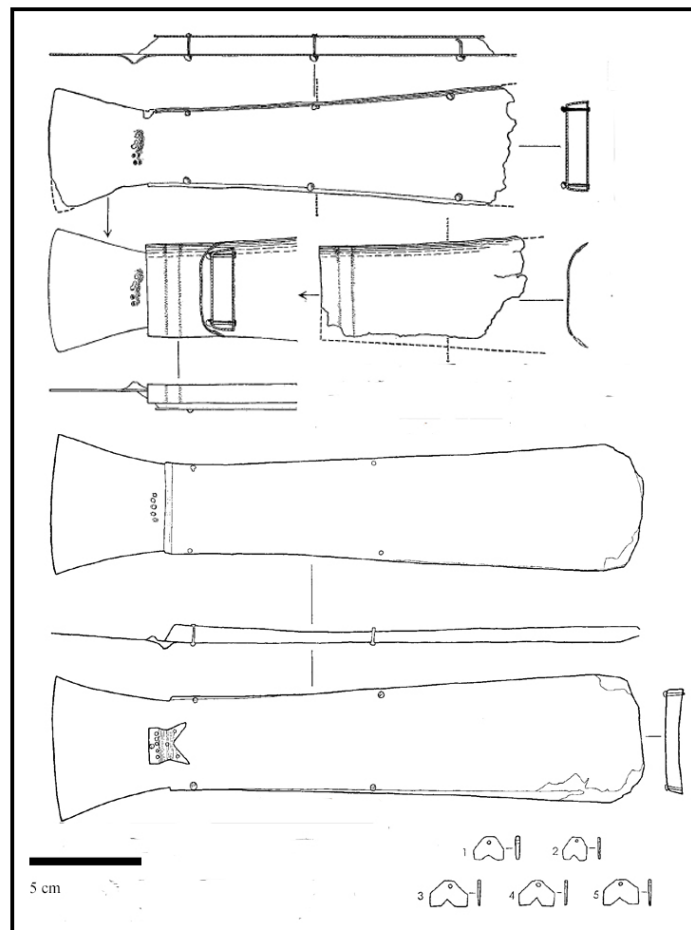


Formal recognition and study of excavated zithers began in 1951, when Kurosawa Takatomo 黒沢隆朝 observed that two previously unidentified wooden objects excavated from the Yayoi period Toro site could be zithers or zither components.<sup>42</sup> Kurosawa was no doubt familiar with the work of esteemed musicologist Tanabe Hisao 田辺尚雄, who had taken an interest in transmitted *wagon/yamatogoto* and *wagon/yamatogoto* fragments in the *Shōsō-in* imperial repository in Nara and championed the instrument as an indigenous product of Japan (Tanabe 1926; 1932). Kurosawa suggested that one of the excavated Toro instruments was a zither and one a fragmented zither with resonator, and he presented his findings to the Society for Research in Asiatic Music (*Tōyō Ongaku Gakkai*). His ideas were highlighted in the 1952 frontmatter of the journal *Tōyō Ongaku Kenkyū*, which also featured a Kofun period *haniwa* clay figurine from Gunma prefecture, seated and playing a zither not unlike the one found at Toro, as well as Kofun period miniature *haniwa* zithers (*Tōyō Ongaku Gakkai* 1952, 4, pl. 1-4). Although the Toro excavators express doubt as to whether or not the objects Kurosawa identified were in fact musical instruments in their report (*Nihon Kōkōgaku Kyōkai* 1954, 270, pl. 55.195), the visual parallels between wooden excavated zithers and Kofun period *haniwa* models seems to have been strong enough to convince most Japanese archaeologists that excavated examples from at least the Yayoi period forward were used as musical instruments. Not long after, Hayashi Kenzō also wrote an analysis of the development of the *wagon* by comparing excavated wood zithers and *haniwa* to instruments in the *Shōsō-in* (1958)

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<sup>42</sup> Kurasawa relates this story himself in subsequent editions of his global compendia of musical instruments (1972, 282-283), as does journalist Mori Yutaka, who published the first book-length treatment of excavated *koto* (1973).

Throughout subsequent decades of scholarship, zithers of varying sizes, forms, and even materials slowly emerged from sites throughout Japan, and more continue to be found. In 1969 a small, eighth century bronze miniature zither, alongside bronze movable bridges (akin to wood ones attested from the Yayoi forward), were discovered in Fukuoka at the sacred Okinoshima-5 site and another was found in 2013, although Okinoshima remains the only site at which bronze examples have emerged (Daisanji Okinoshima 1979; Munakata 2013; fig. 58). The most recently excavated examples I can find are two wood zithers discovered in 2017 in a Late Kofun context at Niyakoniya in Imabari, Ehime prefecture (Yamada and Fujimoto 2019).



**Figure 58: Miniature bronze zithers from Okinoshima**  
modified from Munakata Okinoshima 2013)



Since the late 1970s, scholarship on excavated zithers has consisted primarily of either the creation of typologies or experimental reconstructions intended to ascertain the musical viability of excavated examples. To summarize the most important studies: the first zither typology by Kaneyasu Yasuaki 兼康泰明 (1977) is based on the names of sites at which various zithers of different forms had been excavated (“Toro-form zither,” “Sugō-form zither,” “Hattori-form zither”), and although only eight total instruments had been excavated at the time, the system Kaneyasu created would remain fundamental to the way in which the instrument has been categorized and subcategorized thereafter (as “board-form,” “rod-form,” or “tub-form” respectively). Subsequently, Mizuno Masayoshi 水野正好 states that he was inspired by Kaneyasu’s article and provides a brief exploration of zither forms as visible in Kofun *haniwa*, noting that zithers both with and without resonators are replicated in pottery form (1978). In two subsequent publications, Mizuno turns to the instruments themselves and draws out the distinction between “board-form” and “tub-form” zithers, or zithers without and with resonators (1979; 1980). In 1993 the Nara National Research Institute for Cultural Properties published a meticulous volume on wood objects excavated in the Kinki region that contains a substantial section on excavated zithers (Nara Kokuritsubunkazai kenkyūsho 1993). Kasahara Kiyoshi 笠原 潔 maintained lists throughout the 1990s (Kasahara 1994; 1995; 1998; 1999), notes the similarity between long, “rod-form” zithers and the Chinese *zhu* 築 (Kasahara 1998; 2000), and subsequently wrote the only dissertation-length treatment of Japanese zithers (Kasahara 2006). Suzuki Katsuhiko published a study dedicated exclusively to the Jōmon instruments, arguing for their role as musical instruments, in 2012. Arayama Chie has written a dissertation and subsequent monograph on Japanese music archaeology with substantial chapters on excavated zithers, in addition to several papers focused on reconstructing model zithers based on

archaeological examples (Arayama 2005; 2007a; 2007b; 2010; 2012b; 2012a; 2014). Most recently, Yamada and Fujimoto published an article after the discovery of the two aforementioned instruments at Niyakoniya, including details of their experimental reconstructions (Yamada and Fujimoto 2019).

The aim of this chapter will not be to reiterate the classification systems or experiments detailed above, but to place early wood stringed instruments in context of social change. As a result, I investigate formal changes in the instruments as related to the broader chronology, with brief summaries of the main periods discussed. To effectively communicate such developments in form over time, it is also necessary to relate at least a summary of the different types and provide appropriate terms in English. I generally follow the classification system as described above, articulated most recently by Arayama (2014). Because modes of categorizing zithers were created over many decades, with idiosyncrasies belonging to each researcher's interpretation, some systems become highly confusing.<sup>43</sup> I attempt to simplify things somewhat by assigning separate letters to each type (fig. 59):

Type A:	Board type, sword-form
Type B:	Board type, non sword-form
Type C:	<i>Zhu</i> type, bar-form
Type D:	Resonator type, box-form
Type E:	Resonator type, shell-form

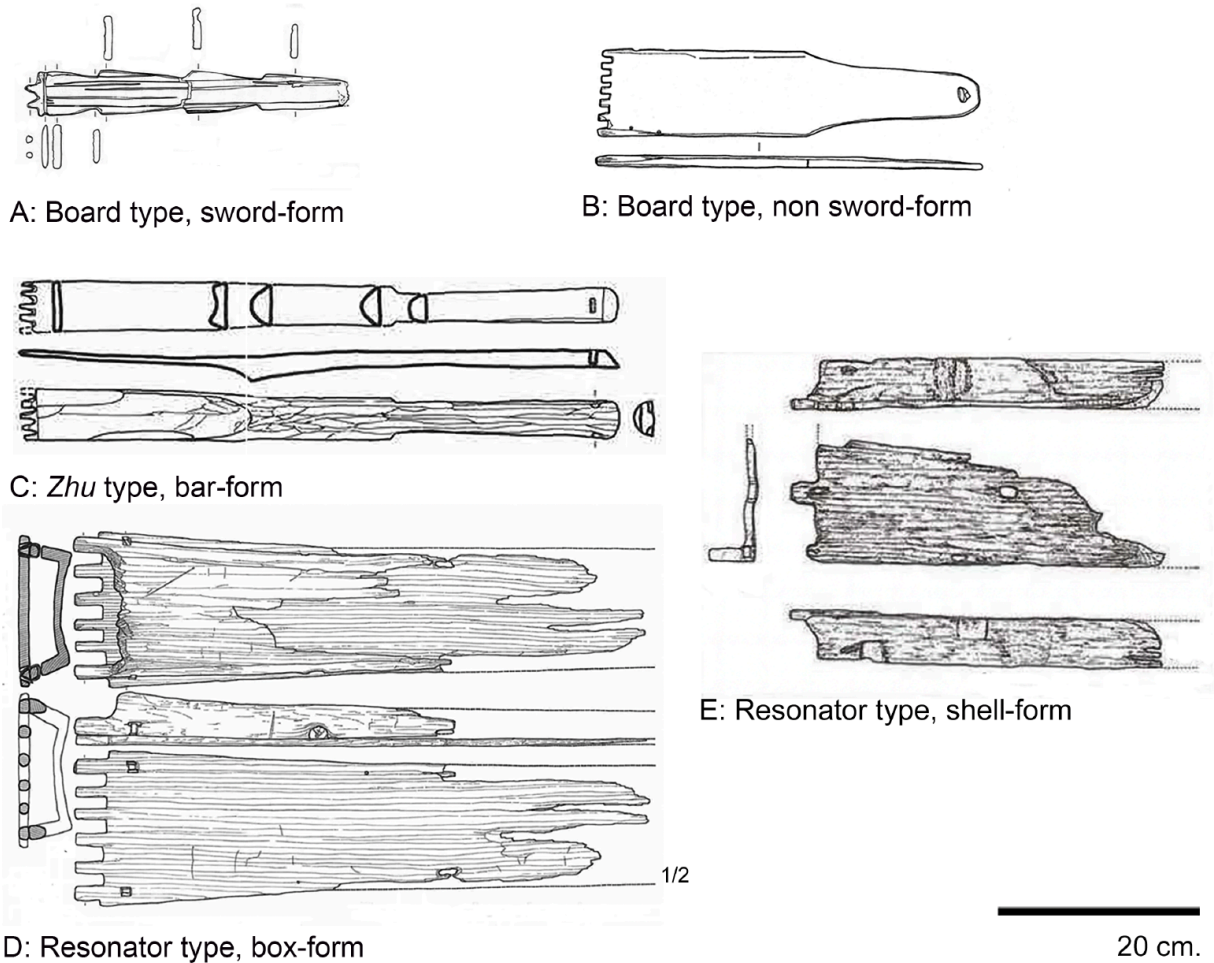
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<sup>43</sup> Throughout his publications Kasahara, for example, does not advocate considering Type C (“*zhu* type, bar-form”) instruments *kin* 琴 at all, as he surmises, based on iconographic evidence from China, that *zhu* type instruments could not have been played while parallel to the ground on the lap of or in front of the musician, which seems to be his primary mode of defining a *kin*. As we have no way of confirming precisely how any of these instruments were played, I do not think that suspecting different holds is a valid reason to exclude them from analysis. Kasahara and Arayama also have different definitions for Type E (resonator type, shell-form) instruments, and I follow Arayama's definition.

Types A and B, the earliest and simplest, are generally smaller in size, never found with resonators, and are constructed from a single board of wood. Types A and B differ in that Type A only has two pegs at one end and tapers sharply at the opposite side, while the body of Type B can be a variety of shapes and has from three to six pegs, usually four or six, and in one case seven. Type C appears comparatively narrow, with two, four, or five pegs, and a notched end through which strings could have been fastened. “*Zhu*” is the Mandarin pronunciation of the kanji often used to designate this type (筑), and although the *zhu* type instruments found in early Japan are clearly distinct from *zhu* in Warring States China, I use the Mandarin pinyin transliteration to maintain the implied cross Japanological-Sinological comparison. Types D and E are much larger on average than the other instruments and always include integral resonators. Type D has four to six pegs, while the resonator of Type E, which is rare, does not have a closed bottom resonator.

### Note on Chinese Zithers

Chinese zithers or zither depictions have been used as a basis for comparison since ancient Japanese stringed instruments were first recognized in Japan, as Kurosawa had stated that examples from the mainland were his inspiration for identifying the Toro zither in the 1950s (Mori 1973). Perhaps because of this, as well as the general comparative civilizational timelines, there has been a tendency particularly in Western scholarship to assume that *all* early Japanese zithers were derived from Chinese counterparts. While this may ultimately be true for some forms, including the *koto* in its current manifestation, there is no precedent for a small, simple *yamatagoto* or *wagon*-style unornamented zither without a resonator constructed from a single



**Figure 59: Zither types**  
 A: Hokkaido, Otaru, Oshoro Doba (Taneichi and Miura 1987, 10); B: Fukui, Fukui, Koso'oki (Fukuiken 2006, 90); C: Chiba, Kisarazu, Sugō (Nara 1993, 177); D: Shiga, Moriyama, Hattori (Nara 1993, pl. 157); E: Shiga, Kusatsu, Nakazawa (Komiya 1987, 4)

board with stationary pegs on one end on the mainland. Excavated Chinese zithers have been well studied in international publications in recent years, most notably by Bo Lawergren (2003b; 2003a), Ingrid Furniss (2008) and Yang Yuanzheng (2015; 2016; 2020), but excavated Japanese instruments have received very little attention outside of Japan. What has been written about Japanese instruments by Western scholars (Hughes 1988, 63-66; Lawergren 2003, 87-89) also does not account for the relatively recent push-back of the Yayoi period chronology (Harunari et

al. 2003), to as early as 900 BC in Northern Kyūshū, perpetuating confusion about the comparative timeline.

Ornate wooden zithers as known from elite Zhou and Han tombs played a part in the ritual music of the fully-formed early Chinese state and Han empire. However, no stringed instruments or depictions of stringed instruments that predate the Warring States period remain in the Chinese material record to my knowledge. The character 樂 (Mandarin: *yue*, Japanese: *gaku*) emerges in the Shang oracle bone inscriptions (OBI) without the central 白 radical and is thought by some (Tong 1984, 68-69; cf. von Falkenhausen 1988, 85 n. 21), including epigraphic authorities (Zhou 1975, 3772: 6.110-0768), to depict two pieces of twisted string atop the character for wood, potentially implying the existence of stringed instruments as a definitive component of Chinese music as early as the Shang, but characters directly representing stringed instruments have not been identified in the OBI. Particularly given the advanced form at which zithers emerge in Zhou tombs, it seems likely that chordophones of some sort existed during the Shang and potentially even earlier – but barring exciting new discoveries, the prehistory of Chinese zithers remains opaque, and Jōmon and Early Yayoi Japanese wood stringed instruments either predate or are roughly contemporaneous with the earliest known Chinese examples.

## Jōmon Precedents

### The Jōmon period

The Jōmon people were a pottery-producing, sophisticated, hunter-gatherer-horticultural culture that occupied the four main islands of the Japanese archipelago from ca. 14,000 BC until varying points during the first half of the first millennium BC depending on the region, as early

as 900 BC in northern Kyūshū (Harunari, Fujio, Imamura, et al. 2003; Fujio, Imamura, and Nishimoto 2005). The Jōmon is typically divided into six sub-periods: Incipient (ca. 14,000–9000 BC), Initial (9000–5000 BC), Early (5000–3300 BC), Middle (3300–2200 BC), Late (2200–1300 BC), and Final (1300–900/400 BC).<sup>44</sup> The Jōmon created intricate lacquerware, ornamental pottery, and anthropomorphic figurines (*dogū*). Increased evidence of sedentism and elaboration of mortuary practices may indicate a general trajectory of social stratification over time (Matsumoto, Habu, and Matsui 2017). It is also clear that the Jōmon practiced some forms of plant cultivation, especially of woody plants, and potentially even some forms of cereal agriculture (Miyamoto 2009; Noshiro and Sasaki 2014). However, a steep, potentially climate-driven drop-off in population between the Late and Final Jōmon periods, from a total of 165,300 to 75,800 individuals according to the classic estimates by Koyama (1984), would seem to indicate that what incipient processes of indigenous social complexity may have been occurring had halted by the Final Jōmon, also the period from which most Jōmon zithers remain.

### Jōmon proto-zithers

At least twenty-one Type A (board-type, sword-form) Jōmon wood stringed instruments have been excavated, most from the Korekawa site in Aomori prefecture (fig. 57; table 12). Two survive from the Late Jōmon and the rest are from the Final Jōmon. One object that resembles a zither also remains from as early as the second half of the Early Jōmon (ca. 5300–3600 BC) from Iwatari Kotani in Aomori, although it does not appear directly related to the other instruments in

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<sup>44</sup> It is also possible that the Jōmon ended as late as 400 BC in northern Honshū (Kobayashi 2008). The end of the Jōmon and beginnings of the Yayoi remain controversial, but most social developments occurred earlier in Kyūshū and western Japan. For concise summaries in English, see Mizoguchi 2013, 34 (chart) or 2017, 561-562.

form,<sup>45</sup> and three additional objects from Aomori (Korekawa and Kamegaoka) might be zithers but are missing any identifiable pegs. Most Jōmon “proto-zithers,” as I advocate calling them, are found in Hokkaidō or the Tōhoku region, except for the two from Matsubara-naiko in central Kansai (fig. 60). Many of these objects were finely made. Some, most notably the larger instrument from Matsubara-naiko, are ornamented and carved into decorative shapes, and several have a single hole close to the peg end, in addition to holes or serrations at the opposite end, facilitating the fastening of strings. In comparison to modern zithers, these objects are very small; complete examples range in length from as small as 16.6 to 55.7 cm. Some may therefore find it misleading to call them “zithers,” which are commonly understood to be larger instruments played with the string board parallel to the ground either on a table or on the lap, although the organological definition of the term is broad. Many modern instruments also technically considered zithers (the medieval psaltery, or modern autoharp, for example), feature strings parallel to the fingerboard and can be played both in the lap and while held in the arms.<sup>46</sup> Moreover, as to size and by way of analogy, many modern Western wood stringed instruments such as the violin are created in small, incremental sizes to facilitate the learning of young children.<sup>47</sup>

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<sup>45</sup> This is a simple board with three holes, curved in profile, without any stationary pegs. I mention it for the sake of completeness, as does Suzuki in his analysis (2012, 80-82), and to raise the point that any stationary surface with a single string stretched across it could have been used as a rudimentary chordophone. To highlight the other Jōmon objects as the earliest excavated zithers in Japan is not to imply that Jōmon people could not have made other stringed instruments before or throughout these periods, but to trace the beginnings of a *genre* of zithers that became culturally significant over time.

<sup>46</sup> Hornbostel and Sachs consider a “simple chordophone or zither” an instrument that “consists solely of a string bearer, or of a string bearer with a resonator which is not integral and can be detached without destroying the sound-producing apparatus” (1961 [1914], 20).

<sup>47</sup> This became especially common in North American contexts through the popularization of the ear-training “Suzuki Method,” developed by the Japanese music pedagogue Suzuki Shinichi during the 20<sup>th</sup> century. Suzuki’s father owned a shamisen factory that was converted to a violin factory in the late 19<sup>th</sup> century (Hotta 2022). The smallest size made is a “1/64<sup>th</sup>” instrument.

For the purposes of the present analysis, the most important distinction between Jōmon proto-zithers and later zithers from the Middle to Late Yayoi forward is the absence of any integral resonator or resonance chamber. It is necessary to concede that temporary resonators absent from the archaeological record could have been affixed to the bottom of single-board instruments when played. In the case of the small, simple board zithers of the indigenous Ifugao of the Philippines, for example, Campos and Blench elucidate that “to increase the volume, the player puts a resonator, such as a ceramic or tin cup or a coconut husk, underneath the instrument although these are not attached to it” (2014, 45, 176). One can only surmise that volume was not enough of a concern to Jōmon artisans to warrant the creation of integral resonators. Given the level of craftsmanship displayed by many of these and other wood objects found at Late and Final Jōmon sites, moreover, integral resonators would not have been a challenge for artisans to create had volume been a priority.

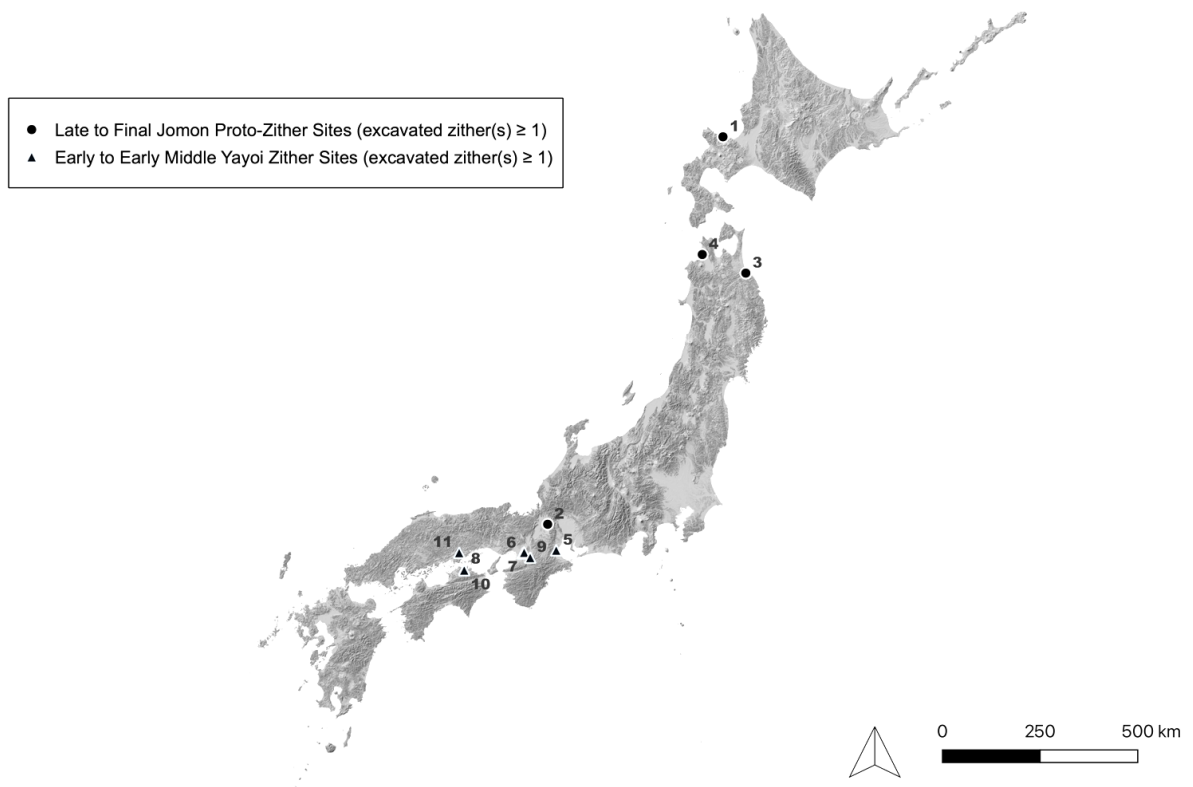
Site	Type	Number	Date	Length (cm.)*
Hokkaidō, Otaru, Oshoro Doba	A	1	Middle of the Late Jōmon	(29.9)
Shiga, Hikone, Matsubara-naiko	A	2	Second Half of the Late Jōmon (1) Early Part of the Final Jōmon (1)	43.7 23.6
Aomori, Hachinohe, Korekawa	A	18-20	Final Jōmon	16.6 -55.7, range
<i>Aomori, Kizukuri, Kamegaoka**</i>	<i>A</i>	<i>1</i>	<i>Final Jōmon</i>	<i>(51.8)</i>
TOTAL		21-24		Average: 36.5***

**Table 12: Jōmon proto-zithers**

\*Length in parentheses for incomplete examples \*\*Italics for highly fragmented or questionable examples

\*\*\*Average for complete examples





**Jōmon:** 1. Hokkaido, Otaru, Oshoro Doba; 2. Shiga, Hikone, Matsubara-naiko; 3. Aomori, Hachinohe, Korekawa;  
4. Aomori, Kizukuri, Kamegaoka; **Early to Early Middle Yayoi:** 5. Mie, Tsu, Noso; 6. Ōsaka, Higashi Ōsaka, Uryudo;  
7. Ōsaka, Higashi Ōsaka, Kitoragawa; 8. Kagawa, Takamatsu, Fuseishi, Idehigashi; 9. Nara, Tawaramoto, Karako-Kagi;  
10. Kagawa, Takamatsu, Tahimatsubayashi; 11. Okayama, Okayama, Minamikata Kokutaikaihatsu

**Figure 60: Map of the regional distribution of Late to Final Jōmon proto-zithers and Early to Mid. Middle Yayoi zithers**

## Yayoi Developments: Resonator Zithers (Type D, E), *Zhu*-type Zithers (Type C)

### The Yayoi period

The Yayoi period was instigated by an influx of immigrants from across the Strait of Tsushima who mixed with the local Jōmon people and created a hybrid culture, bringing metallurgy and wet rice agriculture as well as new pottery types, moated settlements, and mortuary practices. The Yayoi culture began in northern Kyūshū, the closest part of Japan to the Korean peninsula, and did not develop uniformly across the Japanese archipelago; in the Early through Middle Yayoi, the Yayoi can be subcategorized into three regional centers in Kyūshū, western Japan, and eastern Japan. While conversations about Yayoi chronology are ongoing (see n. 4), the Yayoi culture is typically divided into the Initial or Incipient Yayoi (ca. 900/600–400/200 BC), the Early Yayoi (Yayoi I, ca. 400–200 BC), the Middle Yayoi (Yayoi II, III, IV, ca. 200 BC–1 AD), and the Late Yayoi (Yayoi V 1–250 AD) periods. A division between commoners and an elite, kinship-based class also emerges by the late Middle Yayoi (Kondō 1983; Mizoguchi 2005). By this late Middle period, the Yayoi universe further developed into four different “ritual horizons” characterized by the use of bronze spears (*dōhoko*) in Kyūshū and Shikoku, bronze *dōtaku* bells in Kinki and Tokai, square burial mounds in San’in, and large tombs and pottery mortuary pedestals in the Seto island sea region (Mizoguchi 2013).

### Yayoi zithers

Although the most well-known musical instruments of the Yayoi period are the ritual *dōtaku* bells predominately produced in the Kinki region (Chapter 4), Yayoi people also created

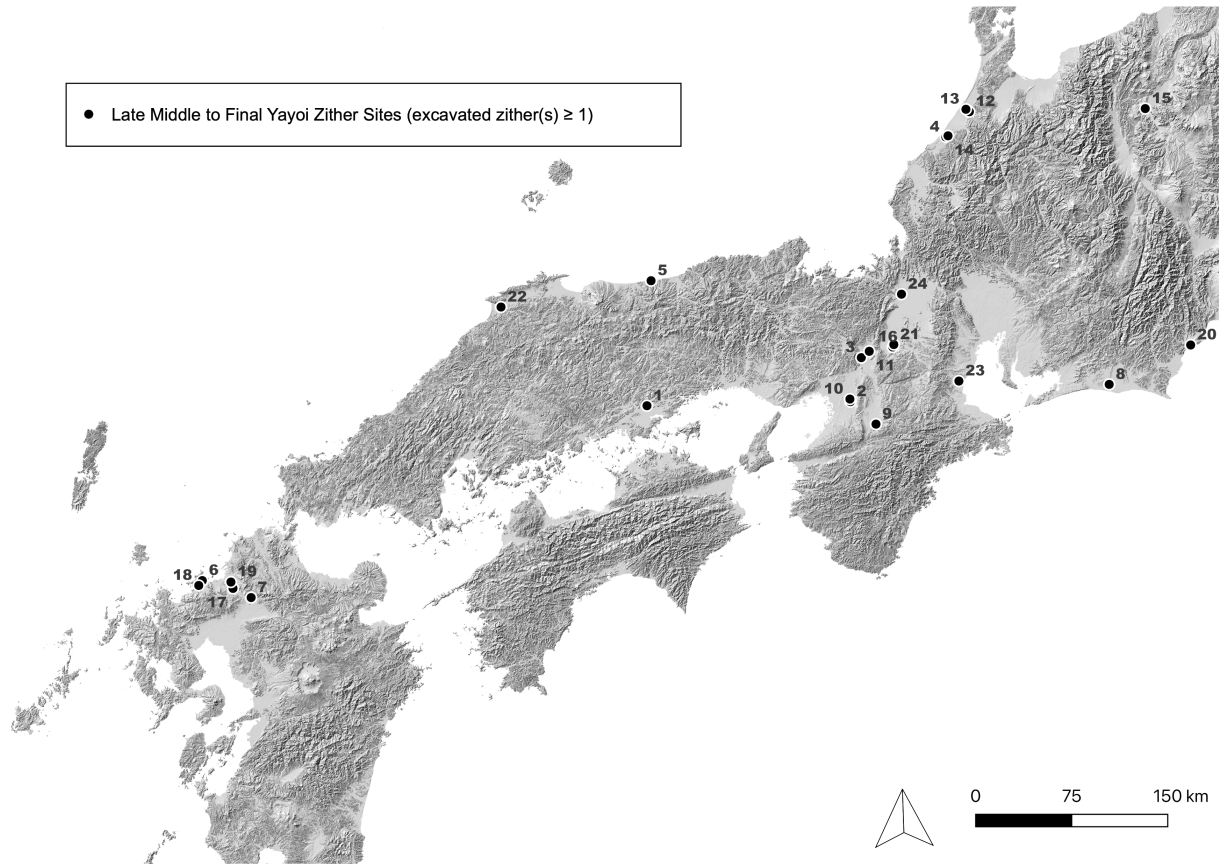
wood zithers, elaborating on Jōmon antecedents and inventing four additional forms as well: Type B (board type, non sword-form), and by the Middle to Late Middle Yayoi, Type C (*zhu* type, bar-form), Type D (resonator type, box form) and E (resonator type, shell form) (tables 13, 14). As accords with the spread of the Yayoi culture outwards from northern Kyūshū, the general geographical distribution of excavated zithers also shifts south and west, no longer centered in northern Honshū as it was during the Final Jōmon (fig. 61). While some scholars do not believe that the Jōmon instruments discussed above were directly ancestral to Yayoi zithers (for example, Arayama 2014, 112-125, 248-249), and many Early and Early Middle Yayoi examples appear considerably less finely made than those of the Late and Final Jōmon, the presence of several Type A instruments at sites through the Middle Yayoi could indicate awareness of and desire to emulate Jōmon precedents, if not direct continuity in either artisanal or musical practice. If one accepts this interpretation, the use of Type A instruments continued from the Jōmon through the Middle Yayoi, and Type B instruments were made for the first time during the Early Yayoi. Seven Type A and B examples remain from the Early through Middle Yayoi (table 13).

Site	Type	Number	Date	Length (cm)*
Mie, Tsu, Noso	A (1) <i>? (1)</i>	1-2	Yayoi I	A: 34.5 <i>?: 53</i>
Ōsaka, Higashi Ōsaka, Uryūdō	B	1	Yayoi I	(24)
Ōsaka, Higashi Ōsaka, Kitoragawa	B	1	Yayoi II	(33.8)
Kagawa, Takamatsu, Fuseishi, Idehigashi	A	1	Yayoi III	57.3
<i>Nara, Tawaramoto, Karako-Kagi**</i>	<i>A or B</i>	<i>1</i>	<i>Yayoi (probably Early Middle)</i>	<i>(26.8)</i>
Kagawa, Takamatsu, Tahimatsubayashi	A	1	Yayoi (probably Early Middle)	50 approx.
Okayama, Okayama, Minamikata Kokutaikaihatsu	A	2	Middle Yayoi (probably Early Middle)	48.7, ?
TOTAL		7-9		Average: 47.4***

**Table 13: Early to Early Middle Yayoi zithers**

\*Length in parentheses for incomplete examples \*\*Italics for highly fragmented or questionable examples

\*\*\*Average for complete examples



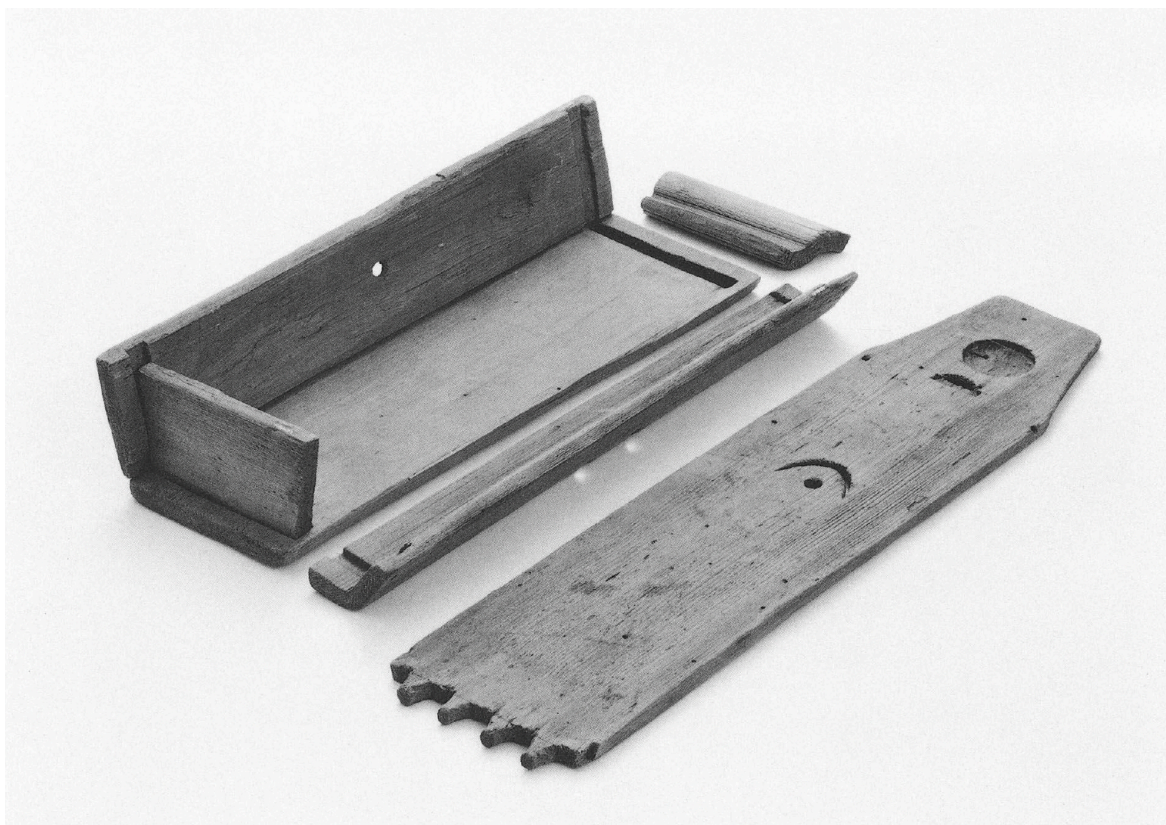
1. Okayama, Okayama, Minamikata Saiseikai; 2. Ōsaka, Higashi Ōsaka, Koma; 3. Kyōto, Mukō, Higashitsuchikawa; 4. Ishikawa, Komatsu, Yōka; 5. Tottori, Aoya, Aoyakamijichi; 6. Fukuoka, Fukuoka, Moto'oka·Kuwabara; 7. Fukuoka, Asakura, Hirazukakawazoe; 8. Shizuoka, Hamamatsu, Kakue; 9. Nara, Kashihara, Fujiwarakyūkasō (Shibu); 10. Ōsaka, Higashi Ōsaka, Shinge; 11. Kyōto, Nakagun, Ōmiyachō, Shōgaki; 12. Ishikawa, Kanazawa, Sainen-Minami-Shinbai; 13. Ishikawa, Kanazawa, Yakushidō; 14. Ishikawa, Komatsu, Shiraekakehashigawa; 15. Nagano, Nagano, Ishikawajōri; 16. Shiga, Kusatsu, Yanagi; 17. Fukuoka, Kasuga, Tsujibatake; 18. Fukuoka, Maebaru, Jōkansu; 19. Fukuoka, Fukuoka, Shimotsukiguma-C; 20. Shizuoka, Shizuoka, Toro; 21. Shiga, Kusatsu, Nakazawa; 22. Shimane, Izumo, Himebaranishi; 23. Mie, Tsu, Rokudai-A; 24. Shiga, Takashima, Shinasahi, Hariehama

**Figure 61: Map of the regional distribution of Late Middle to Final Yayoi zithers**

Substantial changes in zither forms occurred during the middle of the Middle Yayoi to the Late Middle Yayoi (table 15). A fragmented example from the Uryūdō site in Ōsaka is the earliest example to have been built with four pegs, although only one peg remains. Only five Type C zithers are confirmed from the Yayoi period, and the form developed in central Honshū. At Higashitsuchikawa in Kyōto, an instrument that could be considered a transitional type from A-C has only two pegs but also has notches at the narrow end present on most Type C examples. Type D zithers that show signs of having been built with integral resonators first appear in western Japan during the middle part of the Middle Yayoi (at Minamikata Saiseikai in Okayama, Koma in Ōsaka, Yōka in Ishikawa, Kakue in Shizuoka), but many of these objects are not well preserved, and the resonator boxes themselves have not remained. These fragmented Type D zithers are typically identified by, in addition to the presence of pegs, holes in the main body that would have facilitated the attachment of an integral resonator; sometimes fragments of the fibrous fastener also remain.

The earliest and one of the only sites at which a complete zither with resonator intact was excavated is Aoyakamijichi in Tottori, a major trade hub of the period. The object is from the Late Middle Yayoi (Tottoriken 2002; fig. 62) and comprises six parts: the top panel, bottom panel, and four side pieces. Several probable zithers or zither parts were excavated at this site, alongside a separate side panel decorated with a deer motif, which might also be the first zither with figural ornamentation excavated in Japan. Other Yayoi sites at which probable zither components with figural motifs have been found include Moto'oka • Kuwabara and Jōkansu, both in Fukuoka. Motifs on zithers from these sites are always found on the side panels, the significance of which I discuss further in the “Conclusions” (fig. 63). By the end of the Yayoi, Type A examples disappear, and Type B instruments are found much less frequently; those that

are found, such as the Type B instrument with serrated pegs from Shōgaki, for example, display interesting formal variations.



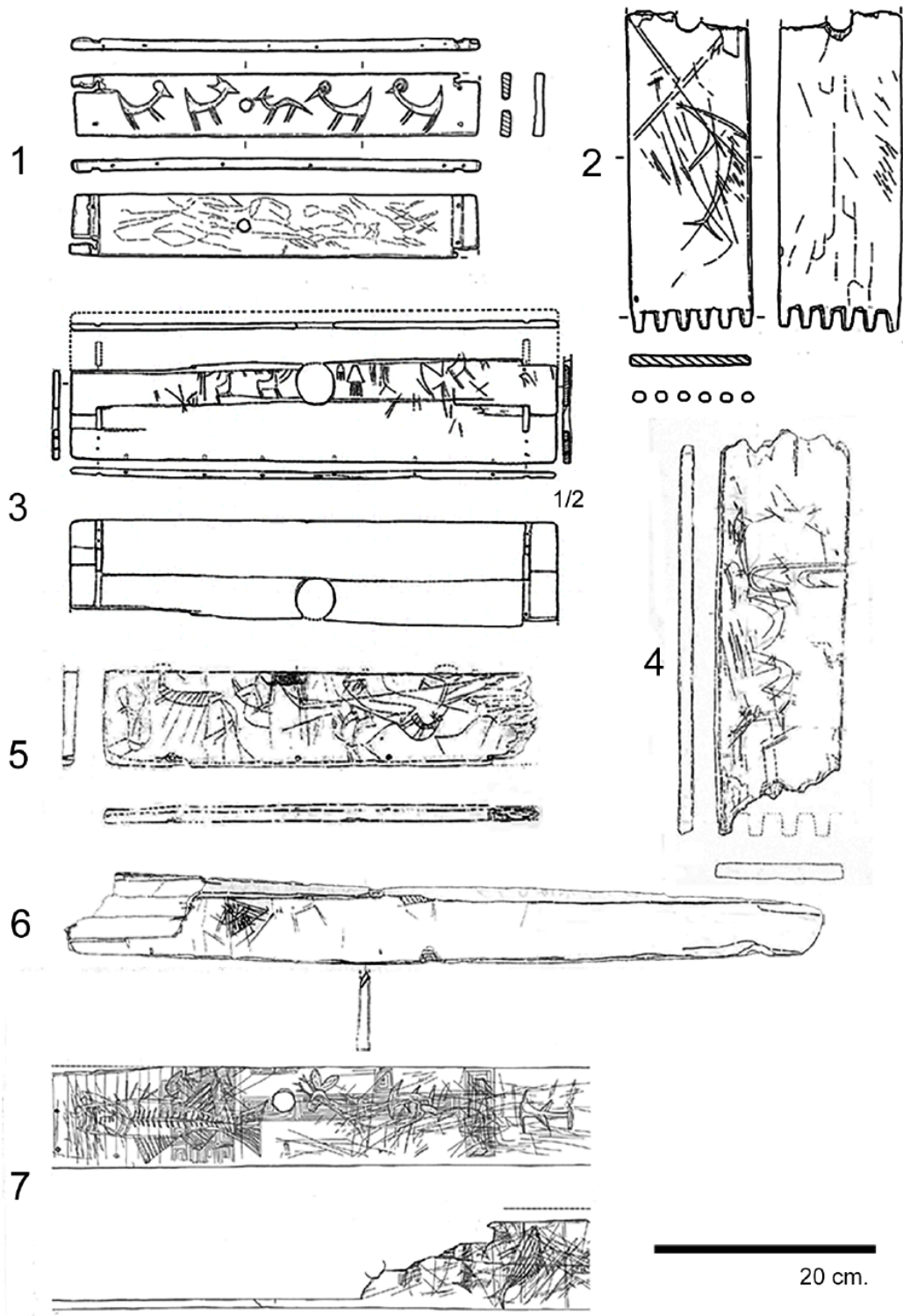
**Figure 62: Intact type D zither from Aoyakamichi**  
(Tottoriken 2002, pl. 72, 394)

Site	Type	Number	Date	Length (cm)*
Okayama, Okayama, Minamikata Saiseikai	B (3) D (2)	5	Mid. Middle to Late Middle (B, 3) Mid. Middle Yayoi (D, 1) Middle Yayoi (D, 1)	(15.2, 26.0, 39.5) (40.5) 63.3
Ōsaka, Higashi Ōsaka, Koma	D	1	Yayoi IV	(60.0 approx.)
Kyōto, Mukō, Higashitsuchikawa	C (A?)	1	Late Middle Yayoi	52.1
Ishikawa, Komatsu, Yōka	D	1	Mid. to Late Middle Yayoi	(78.5)
Tottori, Aoya, Aoyakamijichi	B (1) D (5)	6	Late Middle Yayoi (B, 1) Mid. Middle Yayoi (D, 1) Late Middle Yayoi (D, 4)	22.1 (32.6) 40.2, 37.8, (49.7, 27.9)
Fukuoka, Fukuoka, Moto'oka · Kuwabara	D	10	Late Middle Yayoi to Late Yayoi	88.5, 63.5 (87.2, 58.4, 48.8, 39.3, 25.0, 11.0, 10.9, 7.3)
Fukuoka, Asakura, Hirazukakawazoe	?	1	Middle to Late Yayoi	?*
Shizuoka, Hamamatsu, Kakue	B (1) C (2) D (1)	4	Late Middle to Early Late Yayoi (B) Earlier Part of Late Yayoi (C, 2) Mid. Middle Yayoi to Beginning of Late Yayoi (D, 1)	? 56.4, 54.3 (40.7)
Nara, Kashihara, Fujiwarakyūkasō (Shibu)	C	1	Yayoi V	(25.6)
Ōsaka, Higashi Ōsaka, Shinge	D	1	Yayoi V	(68.4)
Kyōto, Naka, Ōmiya, Shōgaki	B	1	Yayoi V	46.4
Ishikawa, Kanazawa, Sainen-Minami-Shinbai	C (1) D (2)	3	Yayoi V	50.2 62.4, 139.4
Ishikawa, Kanazawa, Yakushidō	D	1	Late - Final Yayoi	(40.2)
Ishikawa, Komatsu, Shiraekakehashigawa	D	3	Late Yayoi	(154.6, 63.0, 53.4)
Nagano, Nagano, Ishikawajōri	B (1) D (1)	2	Late Yayoi	46.4 (92.6)
Shiga, Kusatsu, Yanagi	D	1	Late Yayoi	132.5
Fukuoka, Kasuga, Tsujobatake	B (2) D (2)	4	Late Yayoi	(81.6, 42.4) 148.8 (100)
Fukuoka, Maebaru, Jōkansu	B (1) D (4)	5	End of the Middle Yayoi-First Half of Late Yayoi	? (30.4, 37.2, 39.8, 68.2)
Fukuoka, Fukuoka, Shimotsukiguma-C	B (1) D (1)	2	Second half of Late Yayoi	? (87.1)
Shizuoka, Shizuoka, Toro	B (1) D (2)	3	Late Yayoi	42 75.5, 81
Shiga, Kusatsu, Nakazawa	E	1	Late Yayoi	(34.5)
Shimane, Izumo, Himebaranishi	D	1	Late Yayoi	(38.0)
Mie, Tsu, Rokudai-A	E	1	Late Yayoi	(40.8)
Shiga, Takashima, Shinasahi, Hariehama	D	1	Final Yayoi	(131.0)
TOTAL		63		Average: 65.2**

**Table 14: Mid. Middle to Final Yayoi zithers**

\*Length in parentheses for incomplete examples \*\*Average for complete examples





**Figure 63: Zithers (predominantly side panels) with figural ornamentation**  
 1, 2: Tottori, Aoya, Aoyakamijichi (Tottoriken 2002, 343); 3: Fukuoka, Fukuoka, Moto'oka • Kuwabara (Fuku  
 okashi 2014, 175); 4, 5, 6: Fukuoka, Maebaru, Jōkansu (Noda 1998, 16-18); 7 (Nara period example for refere  
 nce): Hyōgo, Izushi, Hakaza (Hyōgoken 2000, pl. 284)



Sites at which later Yayoi zithers are recovered, such as Aoyakamijichi, tend to be large, central settlements with strategic, topographical advantages, places that served as nodes for broader social networks (Mizoguchi 2010) . While such large sites also tend to be more heavily and carefully excavated, perhaps creating some bias in the record, the size, centrality, and long occupation periods of these settlements may be an indication that zithers were played at major communal gatherings. Or, if musical instruments themselves may be interpreted as signs of social complexity, the presence of large instruments with resonators (Types D and E) may be considered yet another indication of social stratification at the sites from which they have been excavated.

## Kofun Continuity and Figural Representation

### The Kofun period

The beginning of the Kofun period is synonymous with the appearance of giant keyhole-shaped mounded tumuli, or *kofun*, first in the Nara basin and eventually throughout most of Japan (except Hokkaidō or the Ryūkyū Islands). These tumuli are believed to have been created based on a set model distributed by the Yamato, the first ruling clan of Japan, and they are still treated as the sacred resting places of ancestors of the imperial family. The Kofun period, divided into Early (250–400 AD), Middle (400–500 AD), and Late (500–600 AD) periods, represented a drastic departure from previously existing Yayoi modes of social organization. While the Yayoi universe was demarcated by four ritual horizons with their own paraphernalia, the Kofun period was marked by the entrenchment of set, cross-regional symbols of power including bronze mirrors, iron armor, then horse trappings used as grave goods. In addition, *haniwa* figurines, first

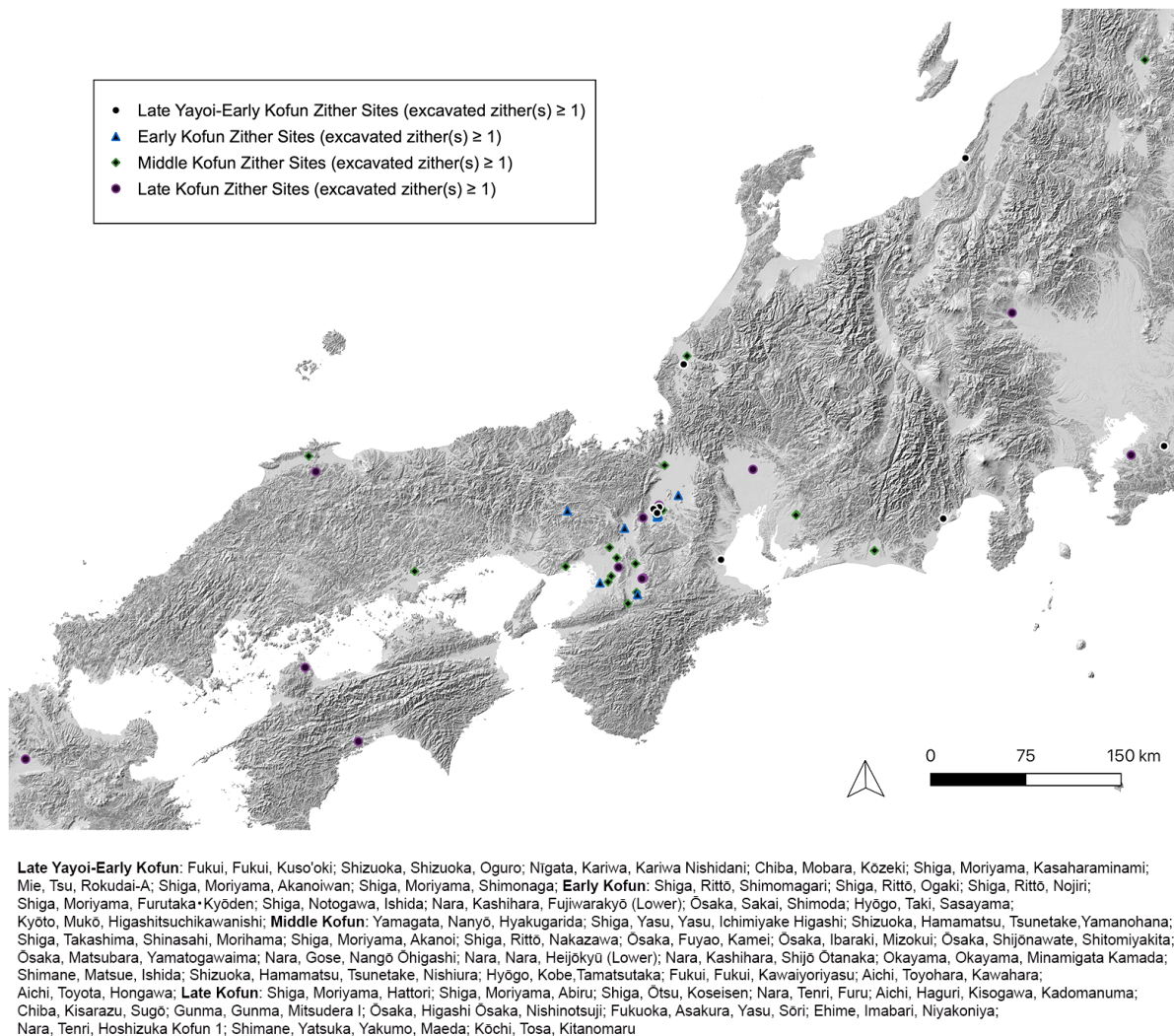
cylindrical and abstracted through the Early Kofun and then, by the Middle Kofun, representative of weapons, buildings, animals, people, and other objects, were arranged on and around tombs. Whether or not state-level society developed during this period remains a topic of debate. Some hold that local independence remained and centralized political organization did not cohere until the 7<sup>th</sup> century (for example, Sasaki 2004), but it is clear that the Kofun period was characterized by an acceleration and instantiation of social stratification, even into the landscape itself.

### Kofun zithers

Many aspects of Yayoi ritual culture, such as *dōtaku* bells, are no longer found in Kofun contexts. However, the diverse types of wood zithers made throughout the Yayoi period (Types B through E) continued to be made throughout the entirety of the Kofun (table 15), although their geographic distribution shifts. Yayoi zithers are found in sites along the coast or in Kyūshū, but during the Kofun period, distribution clusters tightly around major transportation hubs of Lake Biwa and in Ōsaka (fig. 64). One also notes a relative increase in Type C zithers throughout the period, although small Type B instruments do not entirely disappear. A steady increase in average size of instruments, also notable during previous periods makes, is visible as well (figs. 65, 66).

Overall, what is perhaps most striking about Kofun zithers and their distribution is the high level of continuity they seem to display with Yayoi antecedents, given the relative upheaval of the Yayoi social order otherwise. The context of the instruments' use, however, appears to have become more explicitly ritualized and elite: as of the Middle and through the Late Kofun, some zithers are found adjacent to *kofun* (at Kawahara in Aichi, as well as in the moat of

Hoshizuka Kofun 1; fig. 67). As dōtaku bells had been the most important musical-ritual instrument of the Yayoi, elites of the Kofun may have consciously decided to make zithers their definitive musical symbol instead – marking the birth of imperial *yamatogoto* culture sometime during the Middle or Late Kofun period, alongside incipient stages in the formation of the Japanese state.



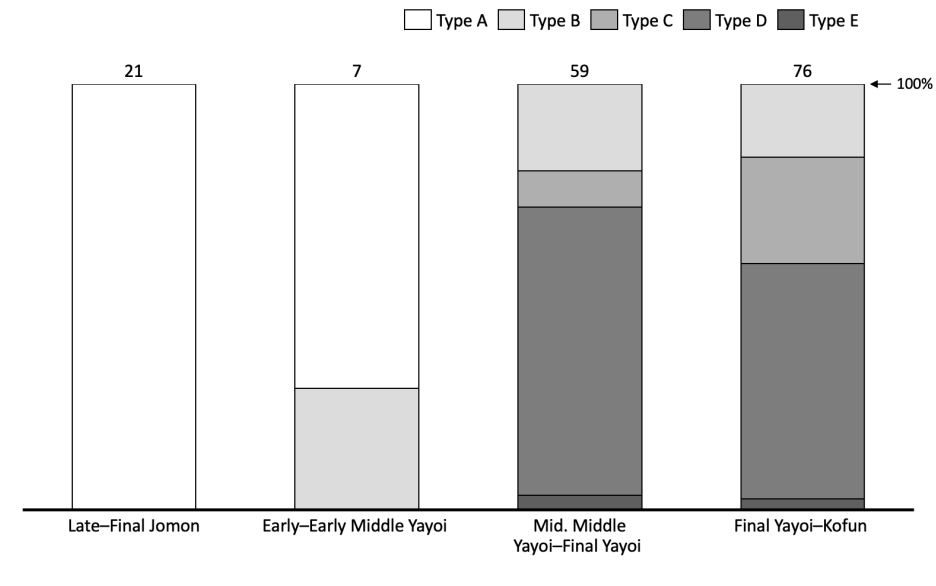
**Figure 64: Map of the regional distribution of Kofun zithers** (including examples the recorded date of which was listed as potentially ranging from the end of the Yayoi to Early Kofun)

Site	Type	Number	Date	Length (cm)*
Fukui, Fukui, Kuso'oki	B	1	Final Yayoi-Early Kofun	34.0
Shizuoka, Shizuoka, Oguro	B	1	Late Yayoi-Early Kofun	49.6
Nīgata, Kariwa, Kariwa Nishidani	D	1	Yayoi 5-Early Kofun	120.6
Chiba, Mobara, Kōzeki	D	1	Late Yayoi-Early Kofun	161.2
Shiga, Moriyama, Kasaharaminami	D	2	Late Yayoi-Early Kofun	130.0, 109.8
Mie, Tsu, Rokudai-A	B (1) D (5)	6	Middle Kofun Late Yayoi-Early Kofun	?
Shiga, Moriyama, Akanoiwan	B D	2	Kofun (B), Final Yayoi-Middle Kofun (D)	(39 cm) (28.5 cm)
Shiga, Moriyama, Shimonaga	D (2), D * (1)	3	Early Kofun (D) Late Yayoi-Early Kofun (D *)	115, (19.4) (47.7)
Shiga, Rittō, Shimomagari	D	1	Early Kofun	158
Shiga, Rittō, Ogaki	D	1	Early Kofun	103.0
Shiga, Rittō, Nojiri	D	1	Early Kofun	?
Shiga, Moriyama, Furutaka • Kyōden	C	1	End of the Early Kofun	75.8
Shiga, Notogawa, Ishida	D	1	Early Kofun	(37.8)
Nara, Kashihara, Fujiwarakyō (Lower)	D	1	Early Kofun	133
Ōsaka, Sakai, Shimoda	D E	2	Early Kofun	(40.7) ?
Hyōgo, Taki, Sasayama, Yoshiikekita	C	1	Early Kofun	?
Kyōto, Mukō, Higashitsuchikawanishi	C	1	Later Half of Early Kofun	35.2
Yamagata, Nanyō, Hyakugarida	C	1	Early to Middle Kofun	75.0 approx.
Shiga, Yasu, Yasu Ichimiyake Higashi	C D	2	Early Kofun (C) Middle Kofun (D)	(66.2 approx.) 161.3
Shizuoka, Hamamatsu, Tsunetake, Yamanohana	B C	2	Middle Kofun	65.9 (65.7)
Shiga, Takashima, Shinasahi, Morihama	C (1) D (2) ? (1)	4	Middle Kofun	(54.9) (52.3, 52.8) ?
Shiga, Moriyama, Akanoi	B	1	Middle Kofun	(73.3)
Shiga, Rittō, Nakazawa	C	1	Middle Kofun	(34.5)
Ōsaka, Fuyao, Kamei	D	1	Middle Kofun	(60.5)
Ōsaka, Ibaraki, Mizokui	C (sound box)	1	Middle Kofun, Late Kofun?	(32.8)

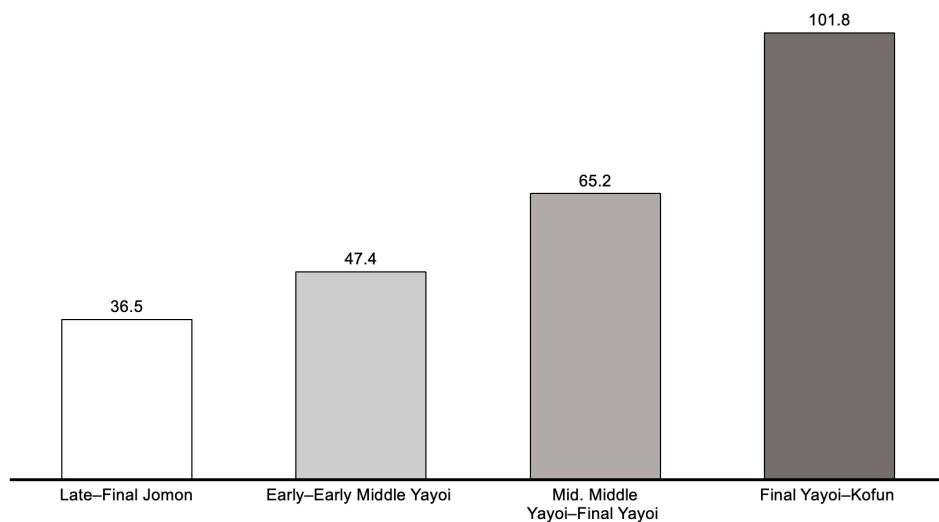
Ōsaka, Shijōnawate, Shitomiyaakita	C (1) A/D (2)	3	Middle Kofun	? ?, ?
Ōsaka, Matsubara, Yamatogawaima	D	1	Middle Kofun	(40.3)
Nara, Gose, Nangō Ōhigashi	D	1	Middle Kofun	(51.0)
Nara, Nara, Heijōkyū (Lower)	D	2	Middle Kofun (or end of Early Kofun)	85.2, (85.5)
Nara, Kashihara, Shijō Ōtanaka	C	2	Middle Kofun	89.4, 59.5
Okayama, Okayama, Minamigata Kamada	D	1	Middle Kofun	(79.0)
Shimane, Matsue, Ishida	D	1	Middle Kofun	191.8
Shizuoka, Hamamatsu, Tsunetake, Nishiura	C (2) D (2)	4	Middle Kofun	82.5, (105.5) 44.85, (125.7)
Hyōgo, Kobe, Tamatsutaka	D	3	Middle Kofun	(41.9, 85.7, ?)
Fukui, Fukui, Kawaiyoriyasu	B	1	Middle Kofun	26.6
Aichi, Toyohara, Kawahara	C	2	Middle Kofun	(18.7, 23.5)
Aichi, Toyota, Hongawa	D	1	Middle Kofun-Medieval (probably Middle Kofun)	(137.0)
Shiga, Moriyama, Hattori	D	1	Late Kofun	(118.0)
Shiga, Moriyama, Abiru	B	1	Late Kofun	(33.0)
Shiga, Ōtsu, Koseisen	D	1	Late Kofun	(110.0)
Nara, Tenri, Furu	B	1	Late Kofun	54.5
Aichi, Haguri, Kisogawa, Kadomanuma	B	1	Late Kofun	(39.0)
Chiba, Kisarazu, Sugō	C	1	Late Kofun	60.9
Gunma, Gunma, Mitsudera I	D	1	Late Kofun	(17.4)
Ōsaka, Higashi Ōsaka, Nishinotsuji	D	1	Late Kofun	(106.5)
Fukuoka, Asakura, Yasu, Sōri	E	2	Late Kofun	(57.6, 121.0)
Ehime, Imabari, Niyakoniya	C D	2	Late Kofun	(10.0 approx.) 168.0 approx.
Nara, Tenri, Hoshizuka Kofun 1	B	2	Late Kofun	53.4, 54.0
Shimane, Yatsuka, Yakumo, Maeda	B D	2	Late Kofun (D), Final Part of Late Kofun (B)	(18.4) 160.2
Kōchi, Tosa, Kitanomaru	B	1	Final Part of Late Kofun	(73.4)
TOTAL		73		Average: 94.9**

**Table 15: Late Yayoi to Final Kofun zithers**

\*Length in parentheses for incomplete examples \*\*Average for complete examples



**Figure 65: Proto-zither and zither type distribution by period**  
 (# categorizable excavated examples; “Final Yayoi-Kofun” including examples the recorded date of which was listed as potentially ranging from the end of the Yayoi to Early Kofun)



**Figure 66: Average size of complete excavated proto-zithers and zithers by period**  
 (cm.; “Final Yayoi-Kofun” including examples the recorded date of which was listed as potentially ranging from the end of the Yayoi to Early Kofun)



**Figure 67:** Type C zither excavated adjacent to kofun, Kawahara, Toyohara, Aichi (Aichiken 2001, vol. 3, 147)

Another important distinction between Yayoi and Kofun zither culture, signaling the self-conscious ritualization of the zither during the latter period, is the Late Kofun innovation of *haniwa* (clay figurine) zither models, found in Kofun as part of the most elite mortuary

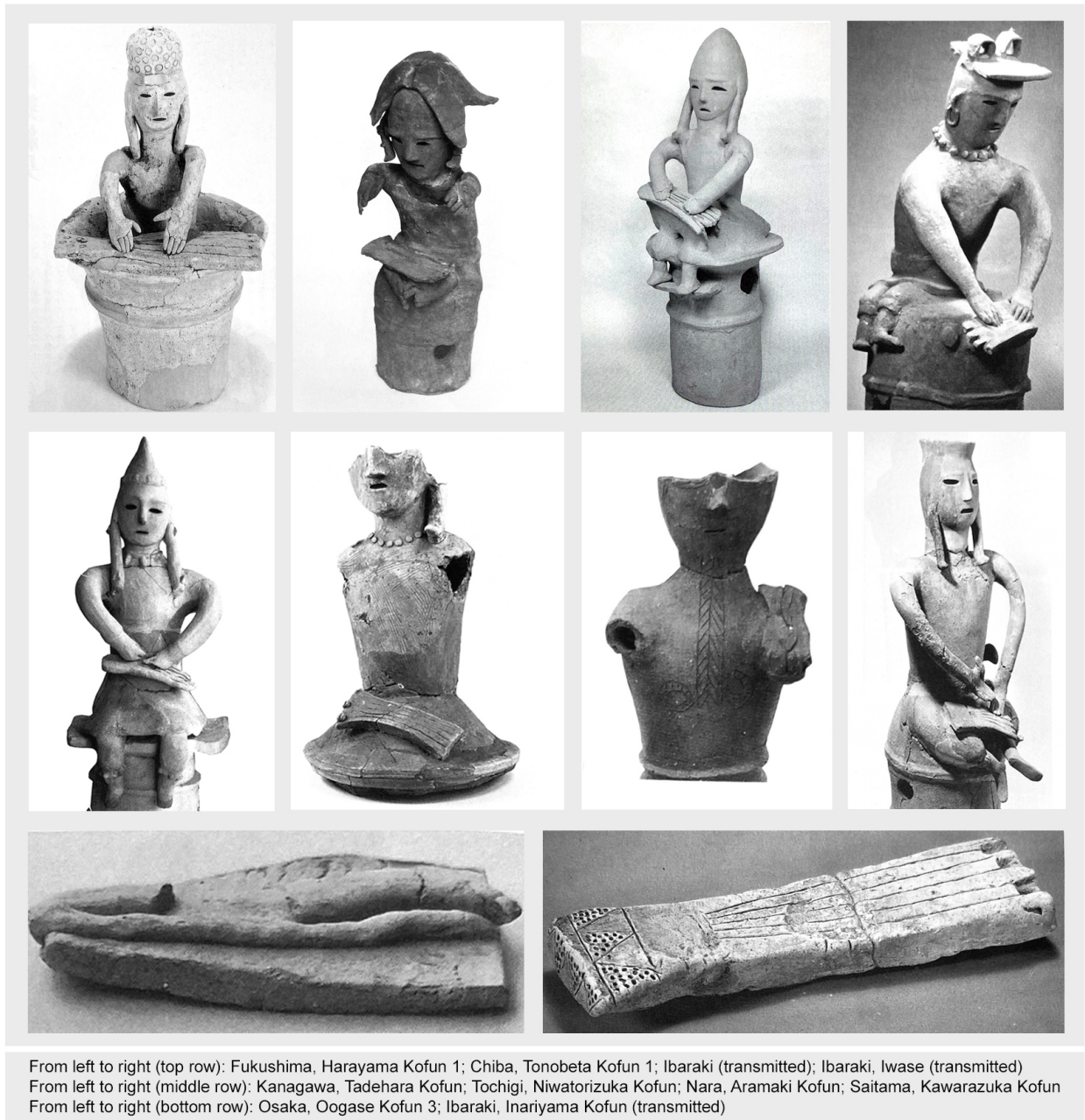


assemblages (fig. 68).<sup>48</sup> These models represent both zither musicians with their instruments and clay zithers themselves. *Haniwa* representing human beings are an average of about a meter high and classically interpreted as specialists who conducted mortuary rituals and directly served the elite in daily contexts as well (Mizuno 1974), wearing rich dress with jewelry and hats with other accoutrements indicative of their professions. Over 30 *haniwa* zithers, zither playing *haniwa* figurines, and fragments thereof have been discovered, far more than any other musical instrument represented in *haniwa* form (Miyazaki 1993). The majority of *haniwa* zither musicians are depicted seated with the instrument placed across the lap, but at least one excavated from the Aramaki Kofun in Nara is portrayed with a small, fiddle-like stringed instrument balanced on the shoulder. Of course, abstracted, idealized interpretations should not be taken as literal representations of human action as it occurred in life, but the existence of *haniwa* zithers and zither musicians may provide at least some preliminary clues as to a range of possibilities regarding physical posture, when considered along other lines of evidence. It is also curious that seated *haniwa* zither players appear with the legs in a wide variety of positions. Some are portrayed with legs crossed; others have legs hanging forward, as if sitting on stools; sometimes the legs do not appear and are subsumed into a cylindrical stand; one appears with legs to the side. This wide range of seated positions, even what amounts to a certain awkwardness in negotiating them, is understandable as seated *haniwa* seem to perform the first depictions of seated human *action* in Japanese visual culture, perhaps even evidence of the emergence of an entirely different conception of physicality.

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<sup>48</sup> One should also mention the movable zither bridge-shaped objects made of semi-precious stone, placed in and surrounding *kofun*, although these objects become highly abstracted and it is somewhat unclear the extent to which they actually represented movable zither bridges.





**Figure 68: Haniwa zithers and zither musicians**  
 (after Miyazaki 1993)

Conclusions: From Intimates to Audience

## Volume capacity and diversity in instrument forms

From the perspective of a culture in which popular conceptions of music have become synonymous with public performance and listening – usually a largely unidirectional, spatially divided act between a skilled individual or group of musicians and a distinct audience – it can be difficult to imagine contexts in which music is or was either communally or privately made.

There are many types of music and instruments in both the ethnohistorical literature and throughout the world not usually performed for a public audience. To return once more to the chordophones of the Ifugao, and as Campos notes,

The Ifugao generally have simple chordophones or zithers, and entirely different from a composite chordophone like a guitar or a lute... Unlike the more familiar bangibang and flat gongs that are played during rituals and festivities, the Ifugao chordophones are mostly played for personal entertainment and during more intimate gatherings at home. (2012, 171)

The Ifugao are a rice farming, agricultural society. Their use of percussive music in ritual and of chordophones in intimate contexts is relevant to the simple board zithers of both the Jōmon and the Early to Early Middle Yayoi. In many contexts, music can be made to meditate, to heal, to comfort an animal, to lull a child to sleep, to romance, alleviate stress during or after a day's labors. The small, quiet, easily portable instruments of the Jōmon would have been suitable for the musical needs of groups where music was played in close quarters. The fact that so many were found at Korekawa, more than have ever been found at a single site throughout other regions or periods in Japan, could indicate that the location was a production site – but it may also imply monophonic or simple heterophonic communal “jamming.”

Amplification and volume, necessary in public performance, should not be considered prerequisites to an object's ability to function as a musical instrument. However, it stands to

reason that amplification and volume become more necessary the higher the ratio of audience members to performers, the larger and more open the venue, the more important a particular voice or intended musical message be heard. The development of an integral resonator for zithers during the Middle to Late Middle Yayoi period broadly accords with other movements towards social complexity, such as the intensification of agriculture, population increase, incipient development of an elite kinship-based class, and the building of large structures occurring throughout the Yayoi universe. The development of zithers with integral resonators and figural decoration on side panels, as well as a general increase in average size, indicates a shift towards a type of music made with a designated *performer* and an *audience* the members of whom both listened and watched, also necessitating a social structure in which one or several voices might be allowed to rise above the rest. The fact that zithers only continued to become larger, on average, throughout the Kofun period would additionally imply gradual increase in scale of performance over time.

The fact that not *all* instruments from the Late Middle Yayoi and thereafter include resonators, however, also demonstrates that the music of complexifying societies is characterized by another important factor: the coordination of diverse elements. After the Yayoi period, it is not uncommon to find more than one type of instrument from the same period at the same site. The fact that multiple, distinct types of stringed instruments, especially Type D zithers with resonators and Type C *zhu* type zithers without, were used during the Yayoi and continued to be used throughout the Kofun may be related not only to the music, but also to the metaphorical value of ensemble performance – which can reflect a leader’s ability to coordinate multiple types of instruments and, therein, people. While it is difficult to know what functions and associations various types of stringed instruments might have held in the minds of the Yayoi and the Kofun

people – perhaps some types had associations with the past, or with other regions, or group identities – one might view this early diversification of musical instrument types made from the same material as a potential indication that the idea of ensemble music, or music as spectacle, was taking seed.

#### “Seated” Music and the bodily techniques of state societies

As early as 1932, Tanabe Hisao suggested that the practice of the *yamatogoto* being carried by two individuals at either end during the *kumemai* dance, part of imperial *gagaku* performance, may have been a hold-over from ancient times during which smaller zithers were carried and potentially strapped to the body. He surmises three stages in the development of zither playing methods:

- 1) The period during which [the instrument was] a small-scale object, played attached to the body, standing
  - 2) The period during which the [the instrument was] played while sitting cross-legged, placed on the lap
  - 3) The period after the reign of Emperor Tenmu, when [the instrument was] played while sitting, as it is today
- (Tanabe 1932, 41 trans.)

Although Tanabe was writing before early zithers had been identified as such in the archaeological record, his general outline proves strikingly apt, based on the forms of excavated wood stringed instruments throughout pre- and protohistory. The extremely small size of the Jōmon instruments, especially those under 20 cm., does suggest that they were held or otherwise braced for the sake of stability when played. Suzuki Katsuhiko, one of the earliest scholars to suggest that these “Jōmon *koto/kin*” were musical instruments (1978) and the most vocal supporter of the idea that they are ancestral to the *yamatogoto*, has suggested a variety of viable holds and string-tying methods holds, even including one in which they are grasped in the mouth

(2012, 108-114). The aforementioned “fiddle”-playing *haniwa* figurine offers an additional tantalizing possibility. Ultimately, it seems reasonable to suggest that small proto-zithers could have been played in a wide range of ways, while sitting or standing, while stationary or in movement, during the Late-Final Jōmon through the Early to Early Middle Yayoi.

However, considering (1) the average increase in the size of zithers over time, (2) the appearance of figural ornamentation on the side panels of some zithers during the Yayoi-Kofun transition, and (3) the seated posture of the majority of Kofun zither playing *haniwa* figurines as lines of evidence viewed in tandem, it is highly likely that sometime during the Late Middle Yayoi, musicians frequently began taking a seated position. This is not to imply that seated music emerged as a direct effect of the musical instruments themselves, but should be understood as part and parcel of novel “techniques of the body” (Mauss [1935] 1973) that accompanied the physical realities of social stratification. During the Late Kofun, zither playing *haniwa* reveal that sitting down and squatting, activities that may well have been associated with the most menial of bodily functions and labors for much of human prehistory, became acceptable elite or elite-adjacent modes of physical posturing as Japanese society moved towards statehood. As we do not have depictions of the most elite personages themselves, it is difficult to say whether they also took a seated position as audience members – but it is difficult to imagine elites receiving all the services that *haniwa* depict and performing all the managerial duties necessary of their stations while standing. Simply put, running a state (or proto-state) necessitates taking a seat.

Beyond the zithers themselves, there is also evidence, both contextual and visual, to suggest that this shift in the elite habitus may have begun earlier. During Yayoi period, a man holding an I-shaped object is a common motif on ornamented *dōtaku* bells. His legs are almost always bent and forward, as if sitting on a stool or chair. Moreover, during the Yayoi the

“circulating continuous back strap stick loom” spread from Kyūshū northwards. This type of loom is a tool that could only have been used while seated with the legs extended forwards, as demonstrated by its use by the indigenous Atayal of Taiwan (Higashimura 2011). The high diversity of and seeming flexibility with which wood types were used to make zithers indicates that the type of wood used was less essential to how the instruments were conceptualized than their strings. As mentioned previously, unfortunately no zither strings have survived in the material record. One can surmise that the earliest strings were likely made of highly degradable vegetal materials like hemp, for which there is ample evidence of use in textile production from the Jōmon, and then eventually of silk, once silk was introduced, also during the Yayoi (Nunome 1995). Because of the self-evident need for strings to make stringed instruments, the development of stringed instruments and textile technologies likely occurred in tandem. The fact that the music of “silk” would become synecdoche for stringed instruments in the concept of the *ba yin* or “eight sonorous substances” during roughly this time would further indicate that across East Asia, stringed instruments were seen as the musical aestheticization of textile production itself.

Final comparative comment regarding figural representation of zither playing in China and Korea

This analysis demonstrates that there is not sufficient evidence to state that the zither was imported from China to Japan. No Chinese zithers have been found in Japan, and the simple box form of Yayoi resonators bears little resemblance to Warring States or Han counterparts, although it seems plausible the idea of adding a resonator to wood stringed instruments may have been an import. At this point there is also not definitive evidence that Chinese zithers were descendent

from Japanese ones, beyond the fact that the earliest Jōmon proto-zithers and fragmented Early and Middle Yayoi zithers predate the first Chinese zithers. One might tentatively state that Bo Lawergren’s suggestion that the Chinese zither was a result of both local factors and “Western influences” (in the case of his analysis, steppe harps) could be expanded to include the possibility of eastern influence as well. Although the cultural exchanges that took place between China and Japan through the Korean peninsula during the first millennium BC appear to have been largely unidirectional, they may not have been entirely so. It is notable that the earliest excavated Korean zither also comes from the first century BC and is similar to the modern *gayageum*, different in form from both early Chinese and Japanese examples.<sup>49</sup> Given how simple the earliest forms of Japanese proto-zithers are, it seems possible that the earliest forms of the instruments developed independently. Traditions from different regions then exerted mutual influence on one another over time as interaction increased. Perhaps rather than focusing on which culture developed any form of a zither first, it would be most productive to envision a network of early East Asian musical traditions that, in their interconnected processes of state formation, mutually influenced one another’s zither types over millennia.

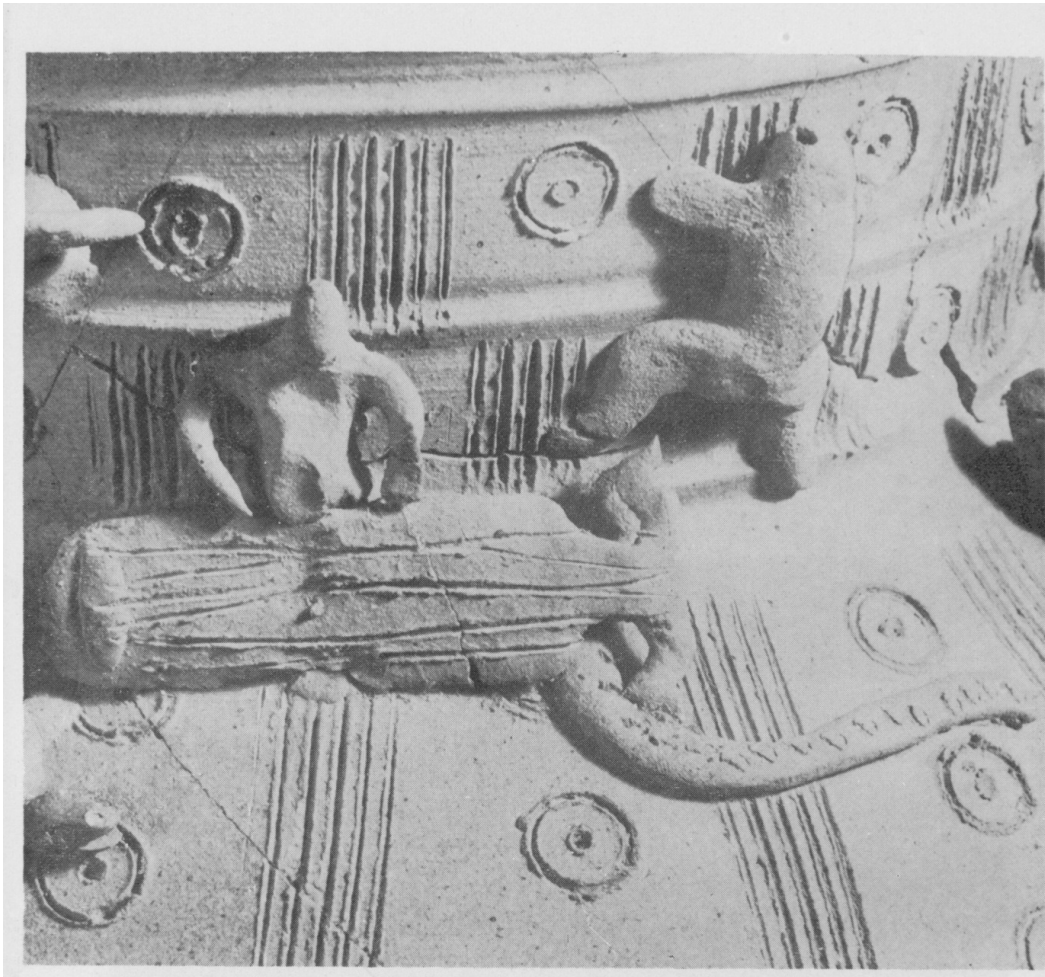
That said, the notion that one could *represent* zithers and zither playing in figural pottery most likely came from China through Korea to Japan, perhaps alongside some of the cultural associations “baked” into those representations. Depiction of stringed instrument musicians has precedents in China by the Warring States period, and in Korea as well by the second century

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<sup>49</sup> According to Coralie Rockwell, regarding the origins of Korean zithers: “According to the *Samguk Sagi* 三國史記 (Historical Records of the Three Kingdoms), written by the Koryo Confucian scholar Kim Pu-sik in 1145, the music of Silla (57 B.C.-668 A.D.) included “*ko*” (some kind of string zither) together with dancing and singing [...]. The word “*ko*” (고), for which no Chinese character exists (not to be confused with the character for drum, 鼓, also pronounced “*ko*” in Korean) is a pure Korean word, exact origins of which are uncertain” (Rockwell 1974).

AD. In China, a bronze miniature house with six seated figures, including two zither players, was excavated in tomb 306 at Shaoxing in Zhejiang province (Zhejiangsheng 1984). These figures are also the first visual depictions of sedentary action in Chinese culture. There is another Warring States depiction of a clay zither player, one member of a large group of musicians and dancers from Zhangqiu Nülangshan, Shandong (B. Li 1993; fig. 69), on which the zither itself is not depicted but the musician kneels over an abstracted table in a position indicative of zither playing. During the Han dynasty, zither players are also a common motif on Han mirrors (Lawergren 2003a). While the Shaoxing musicians in Warring States depictions seem decidedly subaltern, kneeling unadorned and unclothed, the slightly later clay musicians and dancers from Zhangqiu Nülangshan appear clothed, and Han mirror zither players are decidedly elite. Korean figures playing zithers appear as pottery decoration from the Early Silla kingdom (fig. 69). Images of elite zither musicians – potentially seen by Kofun people on imported mirrors or Korean pottery, although to my knowledge no Han mirrors or Korean pottery with zither players have been excavated in Japan – may have inspired the creation of zither playing *haniwa* figurines, although the types of instruments portrayed have no precedent in China.





**Figure 69: Chinese and Korean figural representations of zither musicians**  
Top to bottom: miniature (less than 8 cm.) pottery musicians from Nülangshan (Shandong, Zhangqiu), Middle Warring States (B. Li 1993); Korean Zither player from Early Silla pottery vase, Early Silla (in Rockwell pl. 1)

## Chapter 6: Conclusions

Comparison of the musical material remains of Chinese prehistory and Japanese pre- and protohistory reveals patterns in how music both affects and reflects the formation of social complexity. These patterns may be unique to the regions and periods discussed, but they may also prove visible across other civilizational contexts. K.C. Chang interpreted music in the Shang dynasty (1600-1046 BC) as one of a set of ritual techniques that provided a path to political authority for elites (1983). These findings may support the extension of aspects of Chang's hypothesis to much earlier periods in prehistory, but my priority is correlating the material remains of musical practice with major shifts in prehistoric social institutions, rather than ascribing causality to the relationship between music and power accumulation *per se*. In this understanding, music is in a constant dialectic not only with individual expression but also with the structure of the society that makes it, an interpretation that some may resist. We who love and make music are perhaps particularly sensitive about the topic. Who would wish to think of a mother's lullaby as in part a function of impersonal social forces? Emotions aside, when I think of the lullaby my mother often sang to me and my sister – the lyrics of which describe a swallow flying over a farmer as he carts a calf to market, a reminder of the preciousness of freedom – neither the lyrics nor the melancholy melody make sense without the existence of animal husbandry, a market economy, and histories of state-sponsored oppression. One mother's intimate interpretation of a lullaby may not survive as such in the material record, but performances of what inspired that interpretation may have left traces. Those traces do not exist

in isolation from broader social structures.<sup>50</sup> Below, I draw several conclusions about the nature of music and the formation of complex society in China and Japan in hopes that the patterns identified might prove methodologically convenient to both music archaeologists and prehistorians, even if what is revealed proves idiosyncratic to East Asia, although I suspect it will not.

To summarize, this dissertation includes analyses of the bone musical instruments of diverse cultures of China, ca. 7000–2000 BC (Chapter 2); early mortuary musical ensembles excavated from the elite cemetery of Taosi, in Shanxi, China, ca. 2300–1800 BC (Chapter 3); dōtaku bronze bells of the Middle Yayoi in Western Japan, ca. 400/20 BC–200 AD (Chapter 4); and wood zithers excavated across the Japanese archipelago, ca. 1500 BC–600 AD (Chapter 5). I synthesize materials across approximately five millennia in the Chinese case and two millennia in the Japanese case. The reason for this three-millennia difference in scope is that cultures do not all change in the same way at the same pace, and effective juxtaposition of China and Japan at roughly parallel stages of development necessitates acknowledgement of the fact that social developments take hold at a comparatively accelerated pace in prehistoric Japan. Throughout the five millennia discussed, China moves relatively steadily from a conglomeration of Neolithic cultures into an Early Bronze Age then a Late Bronze Age, state-level society. Conversely, due to the simultaneous introduction of wet rice agriculture and metallurgy from Korea alongside an influx of migration into the Japanese archipelago at the beginning of the first millennium BC, there are no distinct Neolithic and Bronze Ages of Japan, where the institutional apparatuses of

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<sup>50</sup> In the case of this anecdote, “Donna, Donna” was popularized in the United States by Joan Baez in her eponymous 1960 album. The song was originally written in Yiddish (דאָנאָ דאָנאָ “Dana Dana”) by Aaron Zeitlin and Sholom Secunda as part of Zeitlin’s 1940–1941 stage production *Esterke*, based on a Polish legend about a relationship between a Jewish woman named Esther and King Casimir the Great in the 14<sup>th</sup> century.

state-level society were imported before the end of the first millennium AD. Given the interconnectedness of early Japanese and Chinese sociocultural foundations, one may wonder if comparison as such is even possible. This depends, I think, on the materials at hand. In the case of music, I hold that fundamental differences are evident despite the entanglement of the two societies, as indigenous musical traditions existed in Japan long before contact with China. The idiosyncrasies and commonalities of each become lost when the narrative is always about transmission rather than juxtaposition.

Major shifts in the nature of musical performance throughout Chinese and Japanese prehistory can be basically summarized in two broad trends that occur across three phases. These trends are:

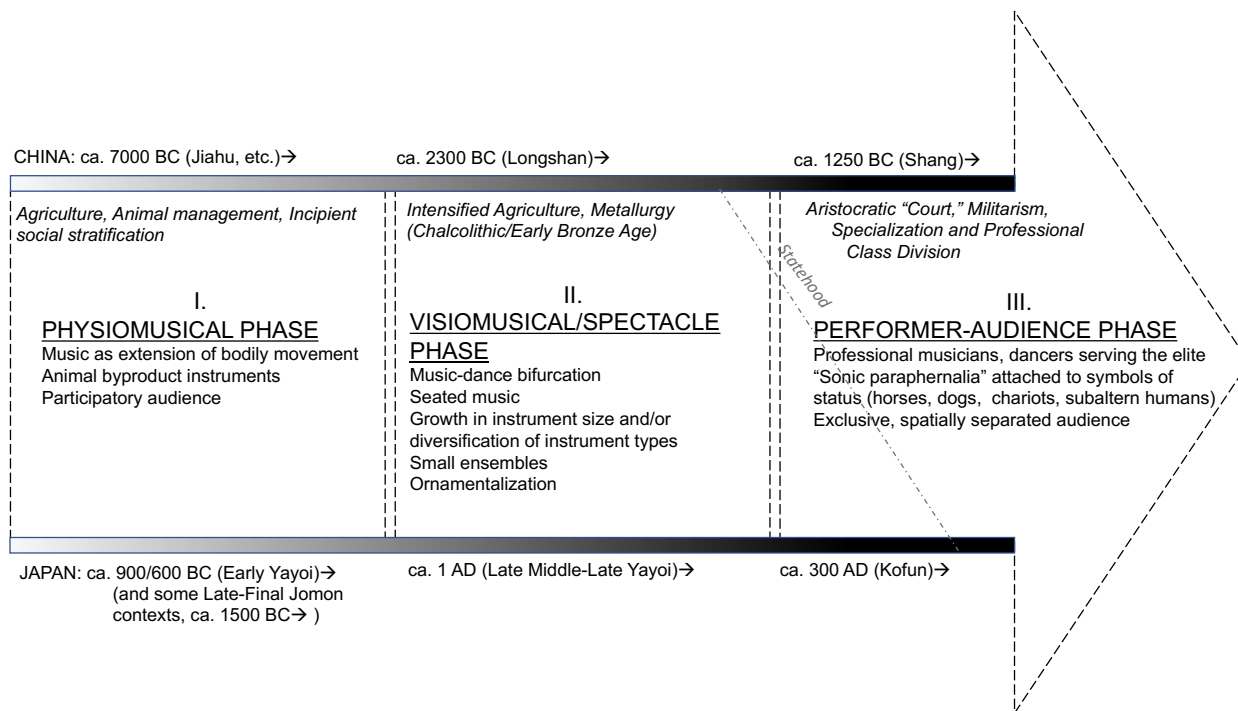
- 1) Increase in the size, number, and diversity of instruments in an assemblage, and
- 2) Bifurcation between music and dance and distancing of music from the elite body.

These trends occur gradually with some fluctuations, but crucial developments occur at the junctions between what I interpret as:

- 1) A physiomusical phase (associated with either a pre-agricultural or Neolithic society)
- 2) A visiomusical or “spectacle” phase (associated the Early to Middle Bronze Age)
- 3) A performer-audience phase (associated with a Late Bronze Age or “state” society)

The final period moves chronologically beyond most of the materials addressed directly, but I will include some comments about the beginnings of state ritual music here for the sake of the discussion. To stress once more, I do not believe these are static divisions against which one

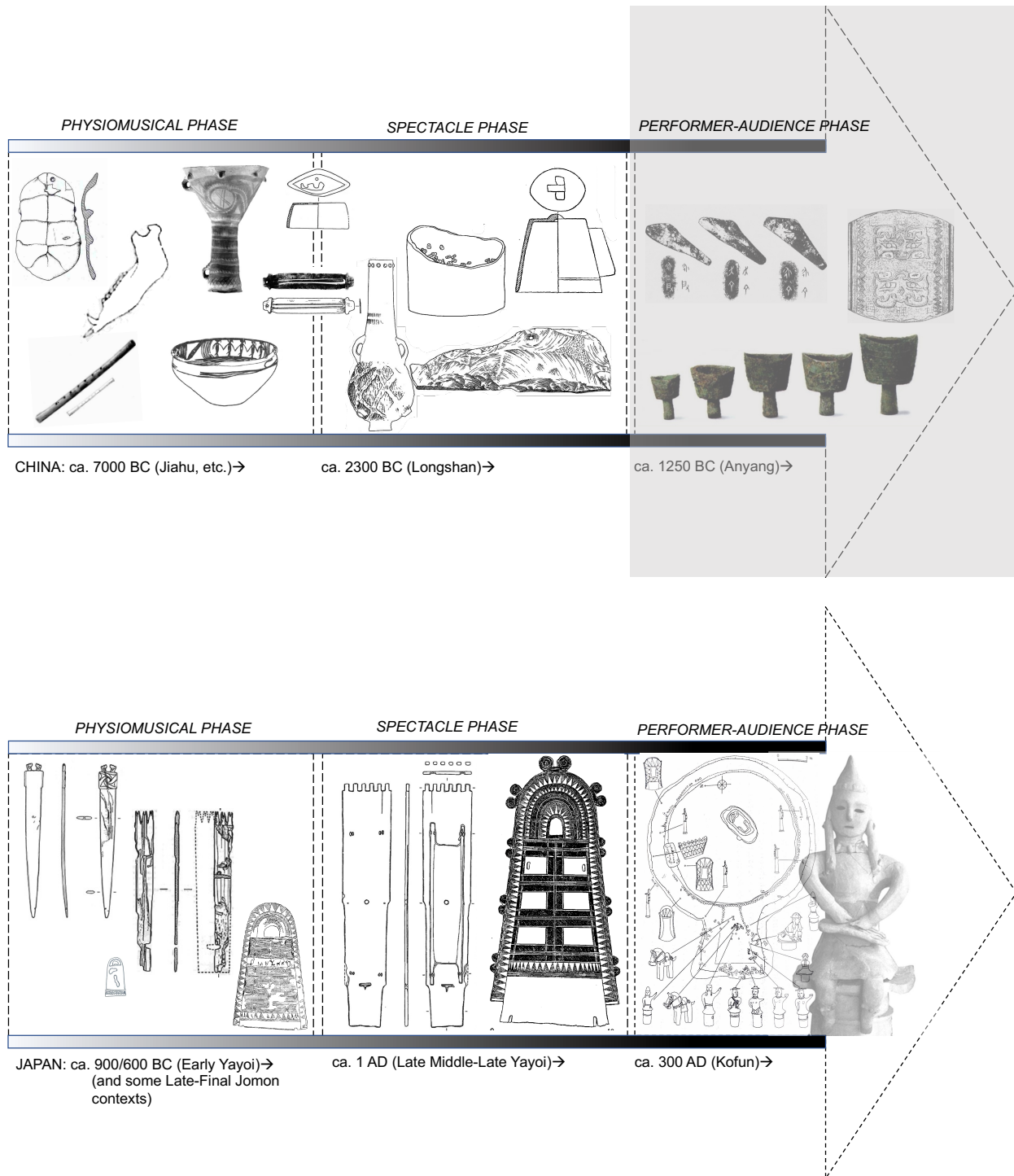
cannot raise exceptions. I will raise a few complications myself below, after describing each phase in more detail.



**Figure 70: Proposed phases in the relationship between music and the formation of complex society in China and Japan**

Before the Longshan period in China and before the Late Middle Yayoi in Japan, excavated musical instruments – such as bone instruments in the Chinese case, or small zithers and bells in Japan – are relatively small, likely played directly while either held or affixed to a person’s body. What remains of the instruments of these early periods indicates that music may have been interpreted as an extension of bodily movement; in the case of bone instruments in China (Chapter 1), the instruments are in fact derived directly from animal bodies. In cultures that saw music as an extension of movement, the elite body was on display as an integral part of the performance. The ability to make effective music may have been one means of establishing power over both the natural world and others, as K.C. Chang writes (albeit in his interpretation

about a much later period) through ostensibly privileged “access to the means of communication” to spirit and other realms (1984, 3).



**Figure 71: Proposed phases in the relationship between music and the formation of complex society in China and Japan (with images of musical instruments)**

The decline of physiomusical practice and beginning of the visiomusical “spectacle” phase roughly accompanies the beginning of the Metal Ages in both China and Japan. In both cases, the transition is not straightforward and is not a direct result of the entrance of metallurgy. One could also argue that the beginnings of visiomusicality and a certain multi-sensory performativity begins before the Bronze Age in China, manifesting in the large mandible sets of the Qujialing in the Yangzi River valley (Chapter 2), also later present in second-tier Taosi tombs (Chapter 3) – although I contend that the inextricability of the human-animal relationship and performance belies a fundamentally embodied conception of music. In addition, by setting this phase at the beginnings of the Bronze Age, I do not mean to imply that the musical practices that entered China or Japan from across the steppe did not involve the paraphernalia of sonically enhanced movement or dance. In fact, a preeminence of physiomusicality in pastoral, metal-making cultures of the steppe may be precisely why we observe apparent motion *away* from the multi-player spectacle of ensemble music alongside early evidence of metal objects at one late phase Taosi tomb. The elite tombs at Erlitou with their turquoise accoutrements are also visually stimulating to be sure, but the placement of bells on the pelvis of occupants clearly evokes a movement-oriented conception of elite musicality. The fact that no multi-instrument musical ensembles have been found in tombs from after the early phase of Taosi through the Middle Shang may be due to a bias in the record, but this absence could also be a result of a clash between musical traditions that lasted for several centuries.

In Japan, instruments remain relatively small and intimate throughout the early stages of the entrance of both agriculture and metallurgy into the archipelago (ca. 900 BC – 400 BC). It is not until the late middle Yayoi in Japan that a *dōtaku* bell network including multi-bell sets, in

addition large wooden zithers found throughout the archipelago, indicate that musical performances had come to serve as social spectacle. The fact that full-size *dōtaku* and other musical instruments are never found in mortuary contexts in Japan reminds us that although the existence of metal bells in Japan can ultimately be traced back to connections with Chinese cultural institutions through the Korean peninsula, the way that ritual-musical spectacles developed in Japan was clearly uniquely tailored to the metaphysical beliefs of the Yayoi culture. Thus the proliferation of the metal bell heralds an acoustically self-reflexive moment, a motif distinct variations on which played out at the endpoints of the transmission of metallurgy beyond the steppe in East Asia. The earliest bells of China and Japanese *dōtaku* both served as reifications of the novel acoustics of a *chaîne opératoire* as each society began experiencing the sounds and sights of metal.

In addition, Bronze Age groups in both China and Japan adjusted to the realities of living in closer-knit communities with greater levels of diversity in both the identities and roles of inhabitants. Musical spectacles would have allowed for cohesion, as individuals could come together to see themselves as part of the same “audience.” The increase in size of instruments and necessity of suspension devices for chimes and bells also suggests that sometime during the Longshan period in China and Middle Yayoi in Japan, musicians needed to be relatively stationary, or at least could not have easily danced while performing. Dance likely emerged as a separate category of activity during this time. With all these elements at play, a leader would also have needed to coordinate the musicians, dancers, and an audience into a coherent event, a set of managerial skills no doubt also useful in other contexts. During the visiomusical phase, music also therefore becomes less necessarily participatory, accompanied by the emergence of a preliminary division between performer and audience. The function of elites moves away from



performance to management. The Early to Middle Bronze Age – specifically the Taosi period in China, and the Late Middle Yayoi in Japan – is therefore the most appropriate point I see to mark the beginnings of a new, spectacle-oriented engagement with music in East Asia.

This incipient spatial separation between performer and audience is a development that becomes institutionalized in the subsequent “Performer-Audience” phase, which I address to some extent in discussion of Kofun period *haniwa* zither players (Chapter 5). This phase is characterized by the clear emergence of divisions between an elite audience and professional, ritual specialists and musicians, as evident in *haniwa* figural depictions in Japan. In the Chinese case, although the materials are beyond the scope of the instruments addressed here, the elaborate nature of instruments in late Shang tombs emerges alongside the development of a concept of ritual music recorded in the oracle bone inscriptions (Tong 1984). Interestingly, in Japan this transition occurs during the Kofun, *before* the period during which most archaeologists have come to agree that state-level society begins; in China, we only have clear evidence of such developments (at Anyang, ca. 1250 BC) well after the establishment the state. Rulers in Japan likely heard reports of the elaborate musical performances essential to politics of China and actively decided to incorporate music into their own state-building projects. By the sixth century AD at the latest, ritual-musical institutions were therefore cross-culturally considered an essential component of governance at the culmination of an over seven millennium-long path to political authority across East Asia.

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