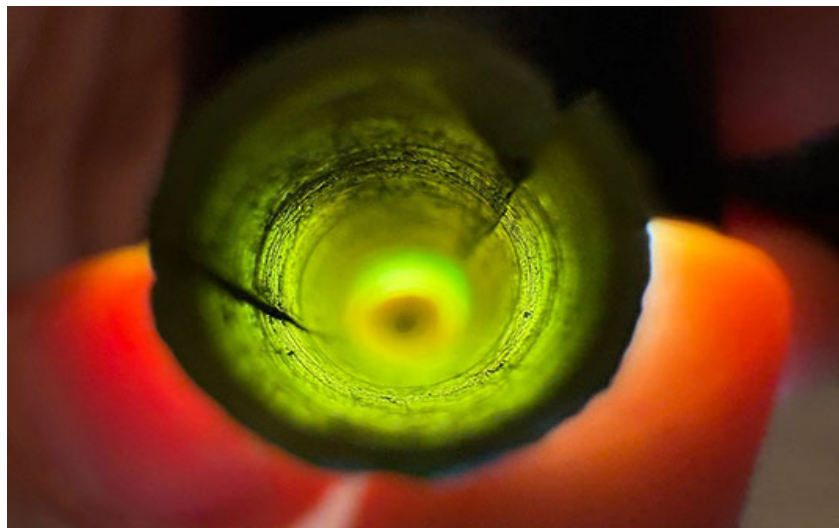


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The use of diacritical markings in the Bankes Homer Papyrus

This paper explores the use of diacritical markings in the Bankes Homer papyrus (P.Lond.Lit 28; TM 60500), which is one of the longest and best-preserved Homeric papyri that has been discovered to date (containing Iliad.24.127-804). This papyrus includes the text written by a professional scribal hand and diacritical markings written in a second hand. These diacritical marks include accentuation markings, breathing marks, apostrophes, diacritics, sublinear hyphens, and markings of quantity. The presence and characteristics of these diacritical markings has led some scholars to suggest that this papyrus was marked-up for educational purposes. However, others (e.g., Parsons 2011) have suggested that the lectional apparatus in some Homeric papyri (exemplified by the Bankes Homer) was placed to respond to performative needs within a Homeric performance tradition. This paper investigates the hypothesis that these markings were used to codify, guide, and teach some elements of the performance/reading aloud of the Homeric epics. A key characteristic of performance is the sound of the language and how it works together with the textual content to convey the intended emotion to the audience. The sonic characteristics of the pitch-accented Greek language were preserved by the written diacritical markings that have continued to be marked in today's editions. This paper focuses primarily on the accentuation marks in the Bankes Homer, examining their sparseness, analysing the patterns of their application, physical appearance, and comparing their use with modern rules of ancient Greek accentuation. In addition, this paper tests the hypothesis (posed by Laum and Nagy) of a possible connection between the accentuation marks and the peaks of the melodic contours of the Homeric verses. A further examination of the metrical markings and their positioning, the other diacritical markings, and the structure of the physical text (e.g., the stichometric numbers and characters names in the margins) leads to a more in-depth speculation regarding the characteristics of these diacritical markings as performance markings.

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A rare find of a whistle from the Early Bronze Age in Santovka in southwestern Slovakia

During the systematic archaeological exploration of a fortified settlement from the Early Bronze Age in the Santovka district of Levice in southwestern Slovakia in 2009, a unique artifact was discovered – a whistle made of antlers. This antler whistle with a ring-shaped thickening at the top ends in a seven-pointed crown. The surface is extremely richly decorated. The central part of the decoration is dominated by engravings of the so-called steep Mycenaean curl, combined with concentric rings. This is framed both in the upper and lower part with an engraved decoration consisting of two rows of miniature triangles facing each other, engraved in such a way as to create a zigzag decoration. The whistle was found in a building whose inventory indicates that it most likely housed a blacksmith who apparently also played the role of a shaman. This is also indicated by other artifacts: a stone mold for casting daggers, a clay spoon, a clay rattle in the shape of a water bird and an antler pedestal. The fortified settlement of the Maďarovce and North Pannonian culture, located on a travertine hilltop, is likely to have played an important role as a cult and religious center. Its existence is supported not only by the overall find profile but also by the immediate presence of hot springs, which undoubtedly gave this site a special atmosphere and setting. In order to understand how the whistle worked and produced sounds and which role the prongs at the lower end of the whistle play, several reconstructions were made from different materials. Furthermore sound recordings were carried out and acoustically analyzed.

Benedetta Bellucci

Notes on Neo-Assyrian harps and their players

Within the framework of the project MIAM – Musical Instruments in Ancient Mesopotamia, started in 2024 at the University of Würzburg – numerous finds with illustrations of musical instruments have been already identified and catalogued. Whenever often scattered in recent catalogues, these items are not duly published in dedicated studies in musicology. In this regard, I find myself particularly drawn to the case of Neo-Assyrian harps as depicted in the renowned wall reliefs from Assyrian palaces, showcasing them in various forms. In a few rare instances, these harps are portrayed being played by veiled female figures. In these specific examples, the harps themselves appear unusual compared to their "typical" representations, and the context of the performances is equally distinctive. Intrigued by this topic, I aim to explore it further in this paper. I will begin by analysing the quantitative data from the records already entered in the MIAM database. Following that, I will conduct a brief examination of the typology of Neo-Assyrian harps, which can be reconstructed through iconography and existing research in experimental sound archaeology. My central focus will be on the relationship between the musician, the genre, and the context of the performance.

Barnaby Brown and Marco Sciascia

Twelve doublepipe halves in the Turin Egyptian Museum: A re-pairing puzzle

The Turin Egyptian Museum possesses thirteen musical reed-pipes with a narrow bore (4–7 mm). Three are potentially singlepipes, which would require two hands to cover the six or eight fingerholes. The other ten appear to be halves of doublepipes: each has three or four fingerholes, which can be covered using one hand. The museum also possesses a cylindrical case which would have contained two, three, or four of them. Unfortunately, we do not know which pipes were found together, or where any of them were found. A divergent doublepipe, with a single player holding one pipe in each hand, is regularly portrayed in art between the New Kingdom and Ptolemaic periods. The number of finds, sometimes in beautifully decorated cases, exceeds that of any other type of ancient Egyptian musical instrument. This talk and musical demonstration asks two questions: Can we determine which of the Turin pipes were originally played together? Given that human hands are symmetrical, how certain can we be that the tonal configuration with three holes on one pipe and four holes on the other was a sacred tradition linking Egypt c. 1100 BCE with Sumer c. 2450 BCE? Progress is made by analysing museum records; by comparing the observations of Victor Loret (1889, 1913) with those of Marco Sciascia, who made the reconstructions used in this presentation (from measurements he made in 2019 and 2022); and by comparing the originals in Turin with comparable finds in Philadelphia, Berlin, Paris, and London: doublepipes that were not mixed up before or after burial, but are definite pairs.

Monika Ciura

Understanding Classic Maya musical practices through material and visual patterns

During the presentation, the author searches for patterns related to categories or values, considered significant within Classic Maya culture (250-900 AD). Drawing on archaeological, iconographic, and epigraphic data, the analysis aims to determine whether, and in what ways music was conceptually structured. Key areas of inquiry include:

- formation of musical ensembles – repeated ensemble types and instrument exchange within ensembles,
- archaeological contexts – differences in depositional treatment between specific instruments,
- iconographic contexts – varying representations of instruments and their contexts in visual media,
- use of symbols – symbolic elements placed on or near instruments that reflect broader cultural associations,
- language – terms and naming conventions used to describe instruments.

Together, these aspects illuminate the possible motivations for production and use of the musical instruments among the Classic Maya. The presentation also addresses various relations of symbolical values pertaining to the instrument as the object, its sound and the context of its use.

Gabriela Currie

Arched harps between the ancient rivers: The Middle Asian Interaction Sphere

The ancient ‘land between the rivers’ is often put forth as the place of origin for the arched harp, as attested by the presence of artifacts that stem from the Early Dynastic Periods I & II (ca. 2800-2500 BCE). It is from Mesopotamia—or so this diffusionist story goes—that the instrument dispersed not only to Ancient Egypt, but also to the South-Asian subcontinent. This diffusionist premise of the ‘passage to India’ narrative builds upon: 1) the presence of a unicate pictogram in the shape of an arched harp, which appears on a seal from the Indus Valley archeological complex—roughly contemporary to the Sumerian cases—and 2) the ‘re-appearance’ of an object in the hand of actual musicians and depicted almost two millennia later, in the art of the Shunga dynasty (ca. 185-73 BCE). The goal of my present paper is two-fold. First, I would like to introduce the lesser-known depictions of arched harps found in the chalcolithic rock art in central Indian sites (Madhya Pradesh). I contend that these representations not only help fill out the enormous chronological gap between the Indus Valley and Shunga eras, but also are linked to contemporaneous cultural, social, technological, and ethnic shifts that took place on the Indian subcontinent. Second, I would further argue that a comparative analysis of representations of arched harps on artifacts that stand at the intersection of the Oxus, Elamite and post-Harappan Civilizations reveals a set of transcultural dynamics that challenge theories of monogenesis and quasi-linear diffusion, and instead reflect the long-distance entangled interactions that facilitated the movement of material culture across The Middle Asian Interaction Sphere, the vast region stretching from the eastern shores of the Mediterranean Sea to the Iranian Plateau and Indus River basin, as well as Central Asia.

Xuěyáng Fāng 方雪阳

The typological research on Chinese chime stones

Chinese chime stones probably originated in the region of Yellow River valley, and their creation may be related to a particular functional tool. Some slab-shaped stone tools can be struck to produce sound, which may have motivated people of this period to play them as sound tools or musical instruments. In the course of the development of this instrument, two periods were thus differentiated, with the coexistence of a Multi-type period and Uni-type period. The former ran from the Neolithic period to the Western Zhou dynasty (1046-771 BCE), while the latter, the unified pentagonal shaped chime stones, were established from the late Shang to the Western Han dynasty. The new typological system presented here distinguishes between two main types of chime stones: A (A-1, A-2) and B (B-1, B-2, B-3). By using this distinction, the shape evolution of chime stones has been examined. In the early stage of the Uni-type period, the unified type of chime stones was shaped with a straight base, which was gradually replaced by curved based chime stones in the Spring and Autumn period (770-476 BCE). The reason why the type B-2 superseded other types is that this type has unique advantages and characteristics: the gu part is naturally slanted when suspended, with a relatively uniform angle of inclination for easy striking. In addition, the curved bottom edge can be ground as a part of the tuning process.

Markus Foramitti

Ancient sounds and modern stress:

Effects of historical idiophones on psychological and physiological stress

Metallic idiophones, such as bells, played significant roles in ancient societies, yet their cultural relevance and psychoacoustic effects remain insufficiently studied. Building on recent findings by Mühlhans et al. (2024) indicating that historical idiophones as well as their replicas differ from each other in perceived emotional qualities – particularly in valence and arousal – the current study investigates their potential to influence stress responses. While the impact of auditory stimuli on stress-related biomarkers and psychological states is well established, the connection between historical sound artifacts and stress modulation has received little empirical attention. This two-part experimental study investigates both the stress-inducing and stress-reducing effects of historical idiophones, conducted within the FWF project “Metallic Idiophones in Central Europe between 800 BC and 800 AD” which integrates archaeological, acoustical, and psychological perspectives (Pomberger et al., 2021). In Study 1, participants underwent a standardized stress induction procedure before wearing either a replica of a copper pellet bell – characterized by a low-arousing sound – or a silent control bell, to assess potential calming effects. In Study 2, participants engaged in a stress-reduction protocol before wearing either a replica of an iron pellet bell – previously rated as highly arousing – or a silent control bell, to evaluate potential stress-inducing effects. The original pellet bells, used as models for the replicas, were excavated from a woman’s burial site in Komárno, Slovakia, dating to the Avar period. Sound arousal levels were based on prior assessments by Mühlhans et al. (2024). Stress responses were measured using hormonal, cardiovascular, and self-report indicators. All procedures were preregistered on the Open Science Framework. This study examines the dual role of idiophones in stress modulation and cultural contexts, offering novel insights into the interplay of sound, stress, and historical practices through a psychophysiological and archaeological lens.

Laura Gianvittorio-Ungar

Satyr play: A study in choreomusicology

For people performing or witnessing ancient choral spectacles, the distinction between stage movements and sounds was probably fuzzy at times but more often insignificant or largely abstract. This is because experiences of choreia were not agglutinations of diverse stimuli (e.g., kinetic, acoustic and visual) but multisensory experiences in which a wealth of (self)perceptions worked through and enriched each other. The point is not so much that physical agency, especially in group, inevitably produces sound as well, but that the ancients valued such sensorimotor synergies, exploited them in performance and maximized their spectacular import. Satyr play stands out as a perfect field of observation for these phenomena. Stagecraft-wise, the genre centered on the corporealities, agencies and sonorities of the satyr chorus. To further enhance choral hyperactivity and loudness, the satyrs were often equipped with unlikely stage props that encouraged bold movements and noise-making on the stage, as the choreuts suitably acted the part of clumsy craftsmen or apprentices. Thus, we will examine literary and iconographic evidence of stage satyrs rattling fishing-nets, handling weapons or swinging hammers in the capacity of fishermen, thieves and carpenters, for example, to try and assess the all-around theatrical implications of such bodily agencies and prosthetics-like equipment. In this as in other venues of research involved with music-making, choreia and molpe (to mention a few examples only), the time seems ripe to approach kinetic and acoustic phenomena along more radically integrated logics, especially by reappraising sensorimotor practices, experiences and aesthetics from choreomusicological perspectives and in the combined terms of movement-and-sound.

Richard M. Gramly

Description and absolute age of a Late Upper Palaeolithic, zoomorphic drum-beater from the Hiscock Site, Genesee County, New York State.

Excavations (1986-2011) at the Hiscock site, western New York State, encountered fragmentary skeletal remains of a presumed shaman (a woman, aged 27-39) together with a sled having tusk ivory runners, a dog associated with the sled, and many artifacts of ritual and practical nature. Among a heap of artifacts near the human remains – presumed to be personal property of the deceased shaman – was a drum-beater made of antler (caribou? extinct moose-elk?). Here we describe this ancient instrument and assess its significance.

Anna Gruszczyńska-Ziółkowska

Sounds to save the moon, or defences against the end of the world in the tradition of Andean cultures

One of the oldest, even atavistic fears, common to probably all cultures, past and present, is the fear of the End of the World. Of course, both the nature of this cataclysm, its predictions and, possibly, the possibility of reversing the course of events vary, depending on the worldview system underpinning a given culture. An extremely important component of the European Conquest of the Inca State was the struggle against established beliefs and practices particularly those relating to the structure of the Heavens and the nature and function of the heavenly bodies. This was justified by their position in the Incan state religion, but also in Pandan local beliefs. Of particular interest to the missionaries, was the behavior of Andean communities towards lunar eclipses, treated by them as a foreshadowing and preliminary phase of the End of the World. Ritual activities, undertaken to prevent the cataclysm, included the creation of an extremely intense sound space, whose task was to ward off the forces threatening the Moon. These were precisely planned activities, using all available acoustic means:

1. Screams, loud shouts (of the entire community)
2. Raising alarm-type and even battle-type noise with the use of sound tools for this purpose
3. Forced howling of dogs
4. Cries of the nature of mourning laments
5. Stirring up rumblings and other impacts of a subliminal nature.

Despite various forms of repression, and consistent attempts at eradication, these practices have persisted to this day in traditional Andean culture.

Rhythms in stone: The iconography of the 'Dappu Drum' in Indian art

Music holds a profound and enduring place in Indian culture, particularly in the context of special events, ritual ceremonies, and religious processions. Indian art, including paintings and sculptures, frequently depicts musical instruments in various ceremonial settings. Moreover, many indigenous musical instruments have remained in continuous use over time. One such instrument is the Dappu drum of Andhra Pradesh, primarily played during religious ceremonies such as offerings to deities, ritual processions, and funerary rites. It is commonly believed that this drum is closely associated with the spiritual realm. However, the nature of its music differs significantly between religious ceremonies and funerals. Interestingly, a similar type of drum appears in ancient Indian art, particularly at Buddhist sites. From the 1st century BCE, depictions of such drums are found at sites like Ajanta and Sanchi, followed by representations at Chandavaram and Phanigiri from the 2nd century CE onward. At Sanchi, the drum is portrayed in the context of stūpa ceremonies and religious processions, whereas at Ajanta, it is seen exclusively in stūpa-related rituals. In the southern sites of Chandavaram and Phanigiri, it becomes further integrated into ritualistic practices. Notably, depictions of this drum seem to vanish from Indian art's entertainment and celebratory themes by the 5th century. However, its imagery reappears between the 9th and 16th centuries in Hindu temple art, particularly during the Chola, Vijayanagar, and Nayaka periods. By incorporating a music archaeological perspective, this study seeks to analyze the Dappu drum's iconographic and cultural evolution through material evidence, tracing its representation across different periods and artistic traditions. Through a comparative approach, it aims to bridge gaps between musical traditions, visual culture, and archaeological findings, contributing to new perspectives in the field of music archaeology.

Mark Howell

A comparison of the music used for two Pre-Columbian Maya dance-plays

Although there is no known written music composition detailing how ancient Maya (250 BCE-1524 CE) instruments (and or extra-instrumental music) were used, my study of ancient texts, iconography, along with information obtained from interviews, transcriptions, and recordings and videos have led me to conclude that the Maya retained certain pre-Columbian music practices in the music used to accompany two dance-plays, or bailes, historically and currently performed in Guatemala: the Ra'bin'al Achi and the Tz'unun. In this presentation I will point out the pre-Columbian music elements in each, compare and contrast those with European music prevalent in Guatemala at the time, and conclude with a comparison of the music of the Ra'bin'al Achi to that of the Tz'unun. A primary purpose for this analysis is to see if a codified system of ancient Maya music can begin to be discerned. The best evidence for a continuation of Precolumbian dance-play traditions in performance is found in the tun, or sacrifice, type baile, exemplified by the Rab'inal Achi. Prehispanic Mesoamerican iconography suggests that the choice of the slit-drum and valveless trumpet over other instruments for this dance-play is due to a long association of these instruments with the practice of human sacrifice. Maya pictorial evidence of the valveless trumpet accompanying sacrificial acts dates back at least to AD 800 and similar evidence of the trumpet and slit-drum at ceremonies of a sacrificial nature dates to at least AD 1200. By the time European writers began describing K'iche' customs during the mid-1500s these two instruments were listed as providing the music for several bailes with themes of sacrifice, including the Lotzo Tun, the Quiche Uinac, and eventually the Rab'inal Achi. Concentration on the instruments identified with four dance-play types has raised a number of questions

that have not previously received extensive coverage. One concerns the origins of the currently used K'iche' slit-drum and skin drum, for which evidence has been given that identifies the western coast of the Gulf of Mexico as the probable place of origin for the former, and Europe for the latter. Another, interest in the materials used in the construction of Prehispanic valveless trumpets, has led to the assessment that some were made of ceramic but most were constructed from an organic material—probably wood—and that various methods were employed to piece together sections of material in order to form culturally preferred long-tube horns. In addition, flutes of bone have been proposed for the K'iche' warrior dance of the Postclassic era, a suggestion based on the evidence in the written records, although ceramic flutes are the only ones that have been identified archaeologically in highland Guatemala. In the Prehispanic past, as today, particular instruments or instrument combinations probably helped announce the commencement of specific dance-plays; cued certain events, such as war cries or speeches enacted within them; and provided the music for dancing in play performances. Such associations cannot be absolutely confirmed, but certain other information can, such as instrument placement in productions, postures of instrumentalists, and accouterments used with instruments. In the Postclassic document Codex Becker I the slit-drum is illustrated as resting on a small round object similar in appearance to the cushion used today to support the slit-drum in performances of the Rab'inal Achi. Similarly, in Precolumbian Maya paintings and sculptures, trumpeters are often shown holding their valveless trumpets at their back ends, perhaps because it allowed the musicians more ease in reaching the pitches or melodies needed for ancient Maya music, or perhaps because it was a visually impressive way to perform. For whatever reason(s), it is a performance technique continued by certain Mexican and Central American trumpeters. In the case of the duct flute currently used for the Baile de los Moros y Cristianos, the framed aperture recognized in performances at Coban is a characteristic of edgetone-instrument design also found on Prehispanic models from the region. As noteworthy as the continued use of some instruments or the persistence of Prehispanic concepts in some instrument designs is the discontinuation of others. For instance, although there were at least two indigenous drum types in highland Guatemala (the pax and kai yum) that could have been used for Posthispanic conquest bailes, the ones now used are descended from European-introduced drum models. Perhaps these latter instruments displaced indigenous ones because they were the types played by the victors in the wars between the two cultures, or perhaps they were chosen simply because they were louder, or easier to make, or for any number of other reasons. At present there is no definitive answer to this question. In fact, instrument artifacts themselves offer limited answers to most questions concerning the music practices of Prehispanic peoples. A more detailed understanding would have to include a Prehispanic musician in discussion—a performer aware of the performance techniques needed to make the sounds on the instruments in a way that would have met with the approval of his audience. Although this person is long gone, there are ways to bring back, at least partially, his music skills. The way proposed here is through informed awareness of the wide array of techniques available for producing sounds on a given instrument added to information concerning performance techniques and preferences based on a culture's writings and/or artworks. Such an approach in conjunction with a scientific method of comparison known as ethnographic analogy has proven effective in archaeological studies. Its application to the study of ancient music, called ethnoarchaeomusicology, can supplement music archaeology. But as ethnographic analogy is a comparison between archaeological material with contemporary materials, it is a somewhat risky research method. Ultimately it relies on the assumption that time has not erased the memory of past music for the modern performer on instruments of the type used in the past; an assumption that is controversial and trusted only if crucial questions can be answered in the affirmative. In particular, is today's performer part of a society near in culture and time to the one in question?

Does this culture have records that can corroborate the continuation of its ancient music traditions? Do witnesses who are outside the culture validate these records? For the K'iche' the answer is yes to all three questions. They still live in the highlands of their ancestors and many continue the customs of their predecessors; they had cultural custodians who recorded the stories of their past; and they tolerated European witnesses to their society, some of whom described K'iche' traditions. In this dissertation, information derived from ethnographic analogy was combined with archaeological information on instruments and performance practices to unveil a more definitive view of Prehispanic Maya music than the instrument artifacts or their depictions in ancient art alone could give. As a result, conceivably of equal if not more value to scholars than an inventory of archaeologically recovered K'iche' instruments is the discovery that the predominant intervals between vibrating tongues of the slit-drums now used for the Rab'inal Achi, major or minor thirds, are the same as found for most presumed Prehispanic models analyzed, just as G and A are common pitches for those same instruments. It has also been discovered that the biggest difference in the music of the European-introduced Moros and the indigenous Rab'inal Achi was that the former emphasizes melody while the latter focuses on rhythm, music aspects that may be indicative of cultural preferences. It is relevant to this conclusion to note that the K'iche' word for skin drum, k'ojom, is also sometimes translated as music. Other ethnoarchaeomusicological evidence suggests a Postclassic K'iche' preference for a rather loud unchanging volume level, a wide range of timbres, a use of specific melodic contours, pitches derived from the harmonic series, and heterophonic textures. Furthermore, music's use of numbers considered sacred by the K'iche' (thirteen fanfares in the Rab'inal Achi, and binary divisions found in instrument design, ensemble size, and tonal choices) suggests that this contemporary phenomenon had roots in the Prehispanic past. In addition, the 260 drum rolls played by the K'iche' prince in the Rab'inal Achi may be representative of Precolumbian performance practice. Ultimately, as is often the case in studies involving multi-disciplinary methods, additional avenues for study become evident only after the limits of the work have been established, when efforts outside those parameters are not feasible. I conclude this dissertation, therefore, with a few modest suggestions for future ethnoarchaeomusicological-related research in the Guatemalan highlands.

Patrick Huáng 黃璜

Blind men and an elephant: An exploratory study of ancient Chinese music from newly discovered bamboo slips

With advances in modern archaeology, scientific artifact preservation, and rapid developments since 1976, over a quarter million bamboo slips have been unearthed. These discoveries have provided invaluable new insights into musical traditions of antiquity. This presentation explores key musical texts from these findings and examines their broader implications in a cross-cultural context.

1. Caifeng Qumu (采風曲目) – Shanghai Museum Bamboo Slips (上博簡), Volume 4

This text presents a list of musical piece titles categorised by several “keys”, making it possibly the earliest known music catalogue in China. It offers an important opportunity to compare with VAT 10101, a Mesopotamian clay tablet that also catalogues musical works, and medieval Western Tonaries, which classified melodies by mode. These parallels suggest a shared cross-cultural approach to organizing and categorising music.

2. Wuyintu (五音圖) – Tsinghua University Bamboo Slips (清華簡), Volume 13

This text features a pentagram illustrating the five-tone Chinese system, closely paralleling CBS 1766, a Mesopotamian tablet that depicts a heptagram for tuning. Such geometric representations may indicate a shared conceptual framework for pitch organisation across civilisations.

3. Yuefeng (樂風) – Tsinghua Vol. 13 & Fragments from Wangjiazui (王家咀) Tomb 798

Unlike known early Chinese notational systems – such as the drum notation in Liji (禮記) or the text-based Guqin tablature in Youlan (幽蘭) – Yuefeng represents musical pitches using single-character note names along with a few “decorative terms”. Meanwhile, the Wangjiazui fragments contain undeciphered simplified symbols. Structurally, these systems may instead offer a potential comparison with Ancient Greek syllabic notation.

This presentation will briefly analyse these texts through a comparative framework to highlight their significance and potential avenues for further study. However, challenges remain: How do we determine whether these excavated texts reflect “mainstream” or “authentic” musical thought compared to transmitted sources? How can we assess the historical influence of texts that were lost before excavation? And how should we navigate contradictions between excavated and transmitted sources? Addressing these questions is crucial for advancing our understanding of ancient Chinese music.

Loren Isotalo

Marching migrating auloi: The arrival and development of the aulos in early Greece

This paper analyzes the evidence for auletic performance in the prehistoric through early Archaic periods, positing that despite apparent circulation of auloi in the Near East before the Greek mainland, many questions remain concerning early auloi and where they were first utilized. In the wake of Andrew Barker's stimulating 2017 talk ‘Migrating Musical Myths: The Case of the Libyan Aulos’, a wealth of new archaeological and literary evidence has come to light relevant to the search for a historical genesis of the aulos. Recent approaches to this question are examined which connect primary sources and the archaeological record, yet no single clear conclusion emerges which explains when and how the aulos arrived among Greek-speaking peoples. Major theories of the aulos' dissemination to Greece, including the Phrygian versus Libyan question or whether the Pelasgians knew the aulos are addressed in the context of a large body of organological and visual evidence ranging from c. 2600 BCE up until the Classical period from all around the Mediterranean. While many volumes on ancient music have addressed the aulos, its organology, and to some extent its mythic origins, seldom have they articulated the many disparate elements of evidence needed to trace the aulos' existence and development before it had already reached peak popularity in Greece. This talk addresses this serious gap, proposing a consolidation of evidence that allows for comparative, collective analysis, while acknowledging the inclusion of new discoveries.

Raquel Jiménez Pasalodos and Stefan Hagel
New aulos evidence from the Iberian Peninsula

As part of an ongoing research project aimed at identifying possible aulos fragments in the Iberian Peninsula, where these instruments have been well represented in iconography since at least the 4th century BCE but remained absent from the archaeological record until recently, a significant new find has been identified. This marks the third known aulos discovery in the Peninsula—and the second dating to Iberian times. Despite its fragmentary nature, the artifact's provenance from a major Iberian settlement and its organological characteristics reinforce previous interpretations regarding the presence and use of the aulos in pre-Roman Iberia. This paper will not only present the new discovery but will also reexamine two earlier finds, integrating a musicological perspective to assess their broader implications for understanding musical practices from the Iberian world to Roman Imperial times.

Gjermund Kolltveit and Riitta Rainio
**Echoes in Scandinavian landforms:
Forgotten traditions of more-than-human voices**

The names and stories associated with certain rocks, fells, and lakes in southern Norway suggest that these landforms once had their own voice and sonic agency. Svaraberg (Answer Rocks) answered people's questions, Talatjenn (Talking Lakes) talked, and valleys with the epithet Dvergsmål—were places to hear the language of dwarves, some kind of underground beings. At the boulder called Tussekyrka (Tusse Church) people heard the underground beings singing and holding their church service. In this paper, we examine such sound-related places from the perspective of archaeoacoustics, hypothesizing that sound reflections played a key role in the formation of the cited traditions. We search for suitable study sites from local historical sources, folklore databases, and map services with place names, and locate them in the terrain. We perform in situ impulse response measurements and analyze the acoustic characteristics of the sites using spectrum analysis, angle-of-arrival estimation, and Dietsch and Kraak's echo criteria. Moreover, we conduct experiments to recapture the auditory experiences described in the old sources. This interdisciplinary paper combines ethnographic and acoustic approaches to bring out the Scandinavian tradition related to echoes, which is largely forgotten and unexplored. In this tradition, unlike in our modern world, sound reflections were relatively equal to direct sounds, allowing people to interact directly with landscape elements and the underlying entities of the more-than-human world.

Marcin Kotyl
Peculiarities of musical instruments in Greek documentary papyri

The advent of papyrology has unveiled a world of unique and unprecedented evidence, sparking intrigue with its insights into all aspects of everyday life in Greco-Roman Egypt. Our understanding of Mediterranean antiquity, previously gleaned from literary, archaeological, and visual sources, has been significantly enriched with hitherto unknown details, including the peculiar names of musical instruments such as different types of auloi (τερείτης and Αἰγύπτιος τερείτης, συριστηρίδιον, ὑπότρητος, ἀριστερός (sc. aulos), and θρήναυλος*) and temple instruments (κανόνιον, χαλκίον, and δίσκος). The present talk aims, therefore, to answer whether the presence of instruments found exclusively in papyri was a matter of sociocultural dynamics,

simply nomenclature, or both. This investigation will lead us to delve into more specific topics, including the physical appearance of musical instruments often inferred from the etymology, regional and temporal variation, purpose and function, and the social environment and gender identity of their users. At least a partial answer to our questions lay within 1) the specifics of papyrological evidence, which often provides details characteristic only of a specific region and/or time in Egypt biased in addition by local cultural influences; 2) the state of papyri preservation, constituting only a fraction of the whole, may introduce distortions in the general picture. 3) the simplification, confusion, or lexical particularities of papyri nomenclature leads to calling some well-known objects with different, otherwise unknown terms or synonyms.

Graeme Lawson
**Body image. Representations of musicianship in funerary tableaux,
circa 400-800 CE**

Today we are accustomed to explore ancient musicianship through images and descriptions of musicians in action, and few musical actions have been more comprehensively explored than those of string players. One series of texts and images from post-Roman Europe preserves (among other things) evidence for early medieval performance on the lyre. But texts and images may not be the only ancient sources of information available to us. In the 1970s, archaeologists excavating an inhumation cemetery in Norfolk, England, discovered a grave in which a dead person and his instrument appeared to have been laid out to evoke a pose characteristic of lyre players in life: his knees drawn up as if sitting, and the instrument placed upright on his lap. Until recently it seemed to be unique, but then excavators in the neighbouring county of Suffolk discovered another like it. The paper will tell the story of these curious discoveries, and others, and of the bigger picture that they are beginning to paint, as tableaux for traditional funerary display. Who composed them, and what might their study tell us about musical performance – and knowledge of musical practice – in the communities that they represent?

Máo Yuè 毛悦
**Southeast Asian connection through music archaeology:
Revisiting the mystery of unearthened bronze bells in Malay Peninsula**

In the early 20th century, four bronze bells were unearthed in British Malaya. Archaeologists have specifically dated the origin of these bells to those of Đông Sơn culture in ancient Vietnam from 1,000 BCE until the 1st century CE. However, historical statements on the bronze bells further obscure the understanding about the connection between both distant civilizations during the Bronze Age, the actual use or function of the bells, and the ultimate typological origin of the bells, raising more questions for scholarly debates: How possible could they be elephant bells (Linehan, 1951) as no record of Malayan elephants is found yet? How possible could they be Buddhist ritual instruments (Loewenstein, 1956) as none of them are identical to any Buddhist bell in today's Malaysia? In addition, it is surprising to find that no historian has ever linked the bells with musical functions so far through the organological perspective. Through a combined methods of historiography, archaeological typology and visual analysis on exhibited artefacts in the British Museum and the National Museum of Malaysia where the bells are now located, this study aims to derive the connection of the bronze bells with those of ancient Vietnam, and even ancient China with a high probability through its structural dimensions, to review their use and function through an inspection of historical documents, and to investigate possibilities of the bronze bells as musical

instruments instead. This study offers an insight in the interdisciplinary field comprising archaeology, organology and music history with an argument that the bronze bells were an important discovery to indicate the existence of musical instruments as trade commodities dated around the beginning of the 1st century CE, probably for the needs of ritual worship or the purposes of accentuating social status.

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Claudio Mercado Muñoz

The bell stones of the Aconcagua

The Aconcagua Valley in central Chile has been densely occupied for some 8000 years. Bands of hunter-gatherers and sedentary agricultural groups developed their lives there. The valley is surrounded by the Andes mountain range and the hills to the north and south, where there are innumerable roads that form a road network of several thousand years, including the famous Inka trail –the same trails that were and still are used by muleteers and now by trekkers. Rock art is a constant in this network of roads. They mark territories, spread ideas, shape realities. At the top of a small hill in Putaendo there is a rocky outcrop with a great profusion of engravings on the rocks. They were produced between 1000 and 1536 AD by local inhabitants called Aconcagua by archaeologists. They marked this space before and after being incorporated into the Inca empire. The interesting thing about this place is that the same rocks that were engraved were used as musical instruments. The points in the rocks are clearly and deeply marked, where it was hit with another rock. It is a stone marimba. I played it and the stones vibrated filling the air with harmony. From this place you can see the whole valley, a privileged place without a doubt, maybe an Andean huaca, a place of pilgrimage? Who played the stones? Who listens to these sounds? When? There is no memory of traditional use in the present people of the place, where few families live. This community is trying to take care of the site because it is beginning to be known for tourism. On the other hand, a local who participates in the current ritual flute groups of central Chile, the Bailes Chinos, tries to revitalize the space as a spiritual center, a place of power. Who can touch the stones now? Some can and some cannot? Is the heritage used or is it looked at and not touched?

Short video of the stones sounding:

<https://youtu.be/uNIWXXik8qs>

Mirco Mungari

The Roman tympanum: A status quaestionis

The Roman tympanum is a kind of ghost in music archaeology, shrouded in uncertainty. This elusive instrument, whose resounding voice might have roused souls and minds during sumptuous rituals, has no archaeological substance. It appears in only muddled, obfuscated ways in literary sources and iconography. The aim of my research is, first, to give an overview of sources and testimonies regarding the tympanum, and to sketch a status quaestionis of our knowledge of this object and its real use. Furthermore, I intend to outline a research framework focused on the physicality of the instrument itself and the range of its acoustic possibilities. The main question I try to answer (or at least to approach) is about identity: did the Roman tympanum have a proper, idiomatic identity, different from its Greek sibling tympanon, or was it rather a translation of an exotic Greek instrument into Latin culture? Looking back even further, was the tympanum considered a proper musical instrument, or was it instead a merely symbolic object, without a musical connotation (like, for example, the sistrum)? This research inevitably requires a multidisciplinary approach. Literary sources, and particularly iconography must be thoroughly analysed; Roman wall paintings show several examples of tympana depicted in different situations (realistic musical scenes, symbolic scenes, simple decorative elements) that require a careful interpretation. The lack of archaeological evidence can be partially compensated by a comparative study of playing techniques of modern frame drums, but with a strict and careful application of a scientifically valid method.

Arsenio Nicolas

Musical terms in Old Javanese and Old Balinese inscriptions

Twenty-three musical instruments in Old Javanese and Old Balinese inscriptions from the ninth to the fourteenth century, covering the Central and East Javanese periods, are presented in this paper. Sixteen Old Javanese and Old Balinese musical terms and eight Sanskrit loanwords are identified from this corpus. Musical data gathered from inscriptions, based on studies by Kunst, Zoetmulder, Casparis, Damais, Boechari, Atmodjo, Sedyawati, Haryono and others, – as well as literary works in Old Javanese and Old Balinese, not discussed in this paper – comprise a unique set of musical data unique to this period. Inscriptions describe musical scenes, rituals, and the cultural setting of the period. Sanskrit loanwords of musical terms in the inscriptions appeared during the Central Javanese Period, and have since then slowly fell out of use during the East Javanese Period, the period when literary and architectural styles of temples in East Java depart from the Central Javanese models, concurrent with the emergence of kidung literature, alongside the continuity of kakawin and kawya literature from the Central Javanese period.

Simon O'Dwyer

Wicklow Pipes – tone generators for the new fipple pipes: A techno-logical analysis

Early in 2004, six wooden pipes were uncovered at Charlesland, Co. Wicklow, Ireland during a rescue archaeology dig. A team from Ancient Music Ireland were approached to identify the artifacts. One of the three members was Dr. Peter Holmes. The pipes were clearly parts of a single instrument or of more than one. Following a request from Ancient Music Ireland, Dr. Holmes wrote the first, and to date, the only paper on the new find in conjunction with Dr. Bernice Mulloy, rescue archaeologist on site, who had made the discovery. Dr. Holmes made accurate reproductions of the original six yew wood pipes which he fitted with simple fipples. These were presented as part of the paper at the 4th ISGMA, Michaelstein in 2004. His paper includes carbon dating and a detailed examination of the originals of which are 4,125 +/- 30 BP. Subsequently, he bestowed the reproduction pipes to Ancient Music Ireland so that further exploration of their musical attributes could take place. To this end, Ian Lambe (a professional low whistle maker), was commissioned to design and make the best possible tone generators, to realise the most accurate tone and tuning from the six pipes. Lambe designed new advanced fipples using an applicable software and 3D printed them, thus allowing for the reconstruction of musical technology. When these new fipples were fitted to the reproduction pipes, an unmistakable musical scale could be played. A presentation to the 13th ISGMA of 2025 by Simon O'Dwyer of Ancient Music Ireland will demonstrate this scale. The likelihood of it being either close to or accurately depicting that which was in the original set will be examined. This will include a submission by Ian Lambe as to his reasons for designing the fipples as he did. The reproduction pipes set made by Dr. Holmes in 2004, fitted with the new fipples will be demonstrated and played for the presentation. The resulting scale and intervals will be compared to the most commonly used in music today. It is our belief that the exercise of accurately reproducing the original complete set and combining the new pipes with the best optimum tone generators gives us the closest musical scale and intervals possible in the 3rd millennium BC.

José Pérez de Arce A.

Were there organological specialists in Pre-Hispanic Ecuador?

The question in the title suggests the existence of specialists in the creation of sound designs in pre-Hispanic America. Organology is understood as the science that studies musical instruments. It is assumed that the instrument maker is looking for a certain type of sound that the musician requires. This leads the craftsman to improve a certain type of instrument. In pre-Hispanic Ecuador we find several clues that tell us about another type of organology specialist, in which its purpose was not to improve the musical quality of an instrument, but to create new ways to produce sounds. This presentation is based on Amerindian thought about sound as a living being, and accordingly, its creation was mediated between the manufacturer, the object, and the movement (of the object, of air). Organological study reveals some clues to this type of activity in the archaeological record. I will show some of them, such as utilitarian objects in which sound is introduced as another layer of meaning, some body objects whose sound is heard only by the person carrying them, and some acoustic flute designs that do not seem to obey sound searches. These examples come from a great organological activity on the Ecuadorian coast between approximately 1000 BC and 500 AD. that will mark the protagonism of sound in American cultures previous to the invasion time.

Sylvain Perrot

New evidence on the Boeotian “foreign” soundscape: Two *sistra* from Thisbe and Chaeronea

The National Archaeological Museum of Athens holds a bronze *sistrum* in arched shape, which I could re-examine in September 2024. This artifact had never been properly studied, even though it displays rich iconography on the handle and frame. The museum's archives helped me to identify its provenience: the agora of Thisbe in Boeotia (Central Greece). Therefore, this discovery sheds new light on the spread of the Isiac cult in Boeotia, where another *sistrum* was found, in Chaeronea. This city is the birthplace of Plutarch, who devoted a treatise to the cult of Isis and Osiris, which includes a description of the symbolic functioning of the *sistrum*, within the framework of the so-called *interpretatio Graeca* of Egyptian features. Both instruments belong to cultic performances, which are also exemplified by some funerary monuments depicting Isiac priestesses with *sistrum* from Tanagra, another Boeotian city. Interestingly, a Late-Hellenistic inscription from the same place testifies to the organisation of Greek musical competitions worshipping the Greco-Egyptian god Sarapis. The *sistra* as well as the graves of Tanagra were not known to Françoise Dunand (1973), when she reconstructed the dissemination of the cult of Isis in Greek mainland from the classical period onwards. Therefore, thanks to these new elements, it is possible to re-establish partially its sound components. Moreover, the iconography of the Boeotian *sistra* may be compared to the other artefacts from Greek mainland and islands, which were actually mainly found in funerary contexts: one *sistrum* from the Hellenistic necropolis of Delos in Rhenea (study planned in May 2025); two *sistra* from the Hellenistic southwestern necropolis of Ambracia; two other *sistra* (Roman times) from the necropolis of Patras. Considering this small but significant corpus, we may write a new chapter on the hybridization of the Greek ritual soundscape in Hellenistic and Roman times.

Beate Maria Pomberger and Maria Hackl

A quest for a classification method. A study on how to approach Prehistoric and Early-History musical instruments using the example of aerophones (wind instruments)

Archaeological finds of musical instruments are oftentimes brought to light fragmented or as isolated single components. Therefore, it is difficult to classify and address them correctly and, further, to compare and contextualize them. This is especially true for wind instruments as their blowing mechanism determines their mode of operation. A classification for musical instruments proposed by Eduard von Hornbostel and Curt Sachs in 1914 and revised by – among others – Roderic C. Knight (2015/17) more than a hundred years later is a numeric system, grouping musical instruments according to how the air is set in motion. Aerophones were originally defined by air being made to vibrate (although this is apparently not the case for all aerophones). In further subdivisions, the blowing device represents the primary decisive criterion for the detailed classification of wind instruments which creates a problem for archaeological wind instruments. Moreover, archaeologists usually focus on other categories such as material, time period, production technique, etc. when typologizing instrument finds. Although attempts for typologies for different kinds of instrument finds had been undertaken by different researchers in the past, music archaeological research lacks an overall system for addressing finds, especially fragmented instruments, in a standardized and international way. As a result, the goal of our ongoing studies is to design a coherent and expandable classification system for archaeological finds of musical instruments applicable by both archaeologists and musicologists.

Michael Praxmarer

The traceology of possible bullroarers from the European Palaeolithic. Sound and applications

Free aerophones called "bullroarers" have been recorded in cultures on every inhabited continent. The earliest archaeological trace of a possible bullroarer comes from a Neanderthal site (Tata, Hungary). In the TNF project (Tiroler Nachwuchsforscher:innen Förderung), which ends on 30.06.2025, Dr. Michael Praxmarer is investigating the acoustic function of twenty-three artefacts (including eight-teen Palaeolithic, three Mesolithic and two Neolithic significant finds). The manual and 3D-printed reconstructions of the project are presented to demonstrate the variations in timbre and amplitude. The 3D laser and microCT scans, as well as digital microscopic analyses allow comparison of wear marks and help to reveal the multiple functions of these artefacts. The modern ethnographic record, together with the associated archaeological material and experimental archaeological research, suggests possible uses as pendants, hand tools (digging sticks, polishers, shuttles, baits), weapons (daggers, rope darts, spearheads), sound tools (animal hunting, signalling, musical instruments), ritual objects to children's toys. This extraordinary group of finds can be used for various activities, like a "Swiss army knife". The aim of the project is to experimentally demonstrate the different uses and to show how traces such as scratches, notches, pecking, polishing and grinding marks are related to these activities.

Eleonora Rocconi

The musical heritage of the Vesuvian Area in Italian museums: The Project POMPEI (Pompeian Musical Pipes Investigations)

This paper intends to present an interdisciplinary project started in early 2022, whose purpose is to document, study, preserve, and promote the Pompeian musical pipes kept in the National Archaeological Museum of Naples (MANN) and the National Museum of Musical Instruments in Rome (MNSM). The tibiae/auloi came to the two museums by different routes. In the case of the MANN, most of them came to Naples between 1738 (first to the Herculaneum Museum in the Reggia di Portici, the summer residence of the Bourbon Family, and then to the Real Museo Borbonico of Naples, which became 'National' from 1860) and 1980, when the Soprintendenza Autonoma di Pompei was created and the more recent finds began to be permanently diverted there. In the case of the MNSM, the Pompeian provenance of at least some of the pipes of the so-called Gorga Collection is highly probable on the basis of historical data (we know that the antiquities collector Evangelista Gennaro Gorga, to whose work the museum owes much of its current collection, brought quintals of ancient objects from Naples between December 1897 and January 1898) and scientific investigations (some analyses on the pipes have revealed the presence of volcanic dust). The project involves four institutions: the museums themselves, the Department of Musicology and Cultural Heritage of the University of Pavia/Cremona (Italy) – including the Arvedi Laboratory, devoted to non-invasive diagnostics of musical instruments – and the Archaeological Institute of the Austrian Academy of Sciences in Vienna (Austria). My personal contribution is tracking down as much information as possible on these musical artefacts, their excavation contexts, and their arrival at the museums through the study of archives, inventories, and historical documents, in order to get a more complete picture and identify fragments that currently do not have an inventory number or have been damaged.

Claudina Romero Mayorga

Ithyphallic lyre-players in Hellenistic Egypt: beyond iconography

A group of terracotta figurines, all found in Lower/Middle Egypt and roughly dated from Hellenistic to Roman times, show a very specific iconography: they are ithyphallic and/or macrophallic characters that play the lyre, using their own phallus as a plectrum. Authors have usually understood them as evocations of fertility, regeneration, and prosperity, considering the lyre as a mere "prop" and neglecting the sense of music-making of the object. This contribution, however, seeks to complement the iconographic analysis with alternative and new methodological approaches, inspired on the principles of "new materialism" 1 and "lived religion" 2 to assess the role of music in these representations. These figurines are part of the so-called "Fayum terracottas", a mostly unprovenanced, serialised-moulded production that became popular in Lower and Middle Egypt (300 BCE – 300 C.E.). While scholars have traditionally interpreted them as votives, toys, souvenirs, and funerary goods, these terracottas showcase a series of syncretic beliefs, focusing on divinities, their cult servants, and offerings. This contribution will be based on three case studies, all of them showing ithyphallic lyre-players: the god Harpocrates, "grotesque" slaves, and animals/actors with animal mask. This proposal aims to elucidate the role of music-making and its symbolic values in Hellenistic Egyptian terracottas by first, examining the presence of chordophones within religious, ritual, and artistic contexts; and second, assessing the "ithyphallic character + lyre" formula to understand the association between music and non-normative bodies. Ultimately, this approach seeks to investigate the function of these musical figurines among users (worshippers, ritual participants, children), and receivers (deities, the deceased, wider community), delving into their social relevance.

Peter Rozs

Avar double pipes from the Early Medieval Ages in an interdisciplinary context – music archaeological perspectives

This paper aims to introduce the Avar double pipes - bone-made wind instruments from the Carpathian Basin - to the field of music archaeology. These early medieval finds not only provide insight into Avar musical traditions but also highlight their role in funerary rites, as evidenced by their presence in burial contexts. The research will present a comprehensive overview of known Avar double pipe findings, examining their technological and contextual characteristics. Given the limited textual and iconographic sources on Avar music, this study adopts an interdisciplinary approach, incorporating archaeological evidence, ethnographic parallels, and comparative analysis with other early medieval double-reed or twin-pipe instruments from Europe and Central Asia. Special attention will be given to possible iconographic representations, despite the general scarcity of depictions of Avars. Furthermore, the study explores potential cultural connections with similar aerophones used in the nomadic traditions of Central Asia, broadening the scope of historical comparison. In addition to these perspectives, the paper will apply music archaeological methodologies to perform an acoustic analysis of the Avar double pipes. This research aims to assess their possible tonal range, playing techniques, and functional roles within Avar society. By synthesizing archaeological, iconographic, acoustic, and ethnomusicological data, this paper contributes to the understanding of early medieval musical practices and instrument-making traditions. The findings not only enrich our knowledge of Avar cultural heritage but also provide a broader framework for discussing cross-cultural influences in music archaeology.

Marco Sciascia and Felipe Aguirre

The horn as a resonance element in Ancient Greek chordophones: A theoretical-experimental approach

Drawing on the theoretical analysis of primary sources and experimentation with different applications of horns on chordophones, this paper explores the acoustic implications of the horn as both an artefact and a resonance material. Particular attention is given to iconographic evidence, alongside an examination of descriptions found in treatises such as the Peripatetic *De audibilibus*, the pseudo-Aristotelian *Problems*, Porphyry's citations of Theophrastus, and Ptolemy's *Harmonics*. By integrating these sources into practical experiments, this study aims to establish parallels that offer new insights into the function and characteristics of essential components of ancient chordophones, such as the arms and the bridge. Additionally, an experimental demonstration of sound examples is proposed using instruments such as the kithára, phórmnix, and bárbitos.

Dahlia Shehata

The many names of lutes in ancient Mesopotamian records: A multidisciplinary approach

Ancient Mesopotamian iconography reveals only very few types of lutes that are mostly identifiable as the spike-necked version. They are preferably depicted in clay figurines and reliefs and thus reflect a rather popular setting for this type of instrument, as was suggested by Theo Krispijn. Unfortunately, no original finds of lute instruments have survived from the regions of Iraq and Syria, nevertheless, the ancient Mesopotamian depictions suggest they were similarly constructed as the contemporaneous New Kingdom (1550 bis 1070 BCE) Egyptian lutes. In contrast to iconography, cuneiform manuscripts retained a multitude of names and terms that seem to have designated at least lute related types of instruments. The most promising candidate to be identified as the name of the lute in ancient Mesopotamia was according to Anne Draffkorn Kilmer and Theo Krispijn Sumerian gu3-di/de2 with a literal meaning “wood(en) speech/call/sound”. Since it was also rendered as “sounding wood”, some scholars have hypothesized this term to be some kind of precursor to the Arabic ʿūd (عود) “(wooden) stick”. However, in recent translations of the relevant passages, the translation of gu3-di/de2 as a general term for “musical instrument” has been more convincing (ETCSL). Mesopotamian Lexical Lists, an important encyclopedic-like text genre revealing all kinds of ancient terminology, the Sumerian name gu3-di/de2 is given the Akkadian equivalent ī/ēnu . This is entered as an equivalent of more than 20 different Sumerian instrument names, among these dim2 “wood(en) create(ed)”, tun3 “wood(en) fringe”, or su-gal “wood(en) big hand”. In my presentation I will first argue that lute iconography only reflects a reduced excerpt of reality and that in Mesopotamia far more lute forms were distinguished than can be identified from the images. Furthermore, using a selection of the ancient probable names for lutes, I will demonstrate that the Mesopotamian lists also included lute-names from other cultures, which is very likely given the multicultural background of this geographical area, but also its trading connections with East and West. Finally, I will argue that the ī/ēnu -list also includes instruments that, according to today's Hornbostel-Sachs classification (1914), would be more likely to be classified as zithers or even harps.

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Wael Sherbiny

Egyptian music-archaeology at the crossroads of science and modern reception: Limitations, risks, and possibilities

Postcolonial and decolonization studies are late comers in the field of Egyptology and ancient Egyptian archaeology. Nevertheless, there is only a very faint echo of these approaches on the modern scene of Egyptian Egyptology, while they are almost non-existent in their Egyptian music-archaeological counterpart. This situation inevitably has its repercussions on Egyptian (experimental) music-archaeology on one side and its local modern reception on the other. The paper addresses the current trends and challenges facing Egyptian music-archaeology in the modern Egyptian setting that are entangled in a net of conceptual, ideological, methodological issues. A more nuanced and balanced approach, on seriously scientific and interdisciplinary grounds, is discussed, where Egyptian voices are encouraged to participate and form the narrative with a critical, informed, and contextually-sensitive manner. The results of these endeavors should benefit the music-archaeological research on ancient Egypt in general as well as its modern Egyptian reception on a wider scope.

Julia Shpinitskaya and Riitta Rainio

Archaeology of sound media: Echophones of the Skolt Sámi sacred sites

In European history the Sámi spiritual heritage represents the only living Indigenous culture relating to echoing rocks. The Sámi sacred sites, typically comprising rocks, cliffs or boulders with smooth vertical surfaces appear as exceptional sound reflectors. Our acoustic studies of several such places in northernmost Fennoscandia showed that they work as tone producers when a direct sound source is located in front of their surfaces. The Sámi stories and practices tied to these sacred landscapes regularly link them with an invisible sound agency, conveying the idea of direct relationship between the rocks, enchanted sounds, spiritual beings, and echoes as their sonic manifestations. In the Skolt Sámi native lands traditions of sacred sites were well registered still a hundred years ago. This paper attempts to reconstruct the Skolt Sámi ritual sonic practices served to unlock the acoustic potential of sacred sites. In doing so, we follow interdisciplinary approaches by gathering ethnographic data from archival sources and historical accounts, conducting new interviews with the support of the Skolt Sámi community, and applying acoustic methods to study sacred sites. We are also working with the Skolt Sámi artists to revive and revitalise this tradition. Our study of the interactive acoustics

of the Sámi sacred sites offers an insight into the function of echoing rocks as a certain sound media, which can create audible frequencies and be played by adjusting one's own sound-making to induce sound reflections. This feature prompts us to consider sacred rock sites as echophones — an entirely new category of sound instruments — that produce sound by reflecting direct sound signals adapted to the echophone's acoustic capabilities.

Maria Stamatopoulou and Christos Terzis

Tomb Z at Demetrias: Women in Luxury and the Fragments of a Stringed Instrument in a Hellenistic Royal Foundation

Demetrias was founded by King Demetrios Poliorketes (the Besieger) in the early third century BCE, by the synoecism of various nearby and distant communities, at a strategic location at the mouth of the Pagasetic Gulf, the largest harbour of central Greece (near modern Volos). Famously characterised as a 'fetter of Greece', it was a military stronghold, a seat of royal Antigonid power, and a multi-ethnic thriving port. The city was largely investigated by the first director of antiquities of Thessaly, Apostolos Arvanitopoulos, in the early twentieth century. He found the famous painted tombstones and excavated large parts of the southern cemetery of the city. In March 1917, a burial cluster of four richly furnished graves was discovered near the city gates, by the road leading south. One of these graves, the so-called Grave Z, stands out for the variety and wealth of the grave goods. Until recently, it was known only through preliminary – and often contradictory – reports. Thanks to a longstanding research project that aims to publish these old excavations, and which relies heavily on archaeological legacy data, it has been possible to locate and recontextualise these finds in the repositories of the National Archaeological Museum (NAM). 'Grave Z', reportedly a single undisturbed inhumation burial of a female, contained a rich assemblage of valuable grave goods, datable to the third century BCE. These include: gold wreaths and jewellery, silver perfume vessels and a silver folding mirror, a small jewellery box with ivory decoration and figurative scenes on its double-sided lid, gold-woven textile, and a musical instrument characterised by the excavator as a 'wooden phorminx' or 'harp'. This paper will discuss the contents of this grave, still one of the most elaborate assemblages of the early Hellenistic period in the city, offering a rare insight into burial practices, social values, and the commemoration of women in third-century Demetrias.

Among the rediscovered items is a cylindrical, elongated bar with a series of tapered through-holes drilled transversely along its length, each precisely fitted with 24 pin-like pegs featuring triangular heads. This paper aims to document and interpret this find within the broader context of angular harps, an instrument type attested in the Mediterranean since the second millennium BCE. Drawing on iconography and the archaeological record of musical finds, a geometrical reconstruction of the instrument will also be attempted.

Lucy-Anne Taylor

Recent music/instrument finds from Cookham Abbey in geographical and material context

In August 2024 an Early Medieval bone flute was discovered at Cookham Abbey, an elite, religious site. The Abbess of Cookham Abbey was Queen Cynethryth, an important figure in Northwestern Europe who corresponded with Charlemagne and the Pope. What does this new find tell us when looking at it in its context? Are there any specific features of this instrument which make it different to or the same as other similar instruments, and is there a reason for this given the context? The fingerholes on the

bone flute are all of the same size and exact same distance apart, something which is not always seen on the other bone pipes from the period, and comparison with these other instruments will help understand why that may have been. The geographical context of Cookham Abbey is important to assess. The site is located along the Thames, on the opposite bank of that river to the 'princely' burial at Taplow (which included similar objects to those found at Sutton Hoo) where a lyre was found. The author has recently had the opportunity to look at the Taplow assemblage, and analysis of material types found at that site. This has raised questions which this paper seeks to address, about how and why similar materials are used across different places, and what the links are between those locations. Experiments in the sound carrying around the river, along with looking at the materials from which the bone flute and Taplow lyre are made in relation to other similar instruments will be used to show the link between the natural world and life at the time. It will seek to demonstrate why specific materials may have been chosen, as well as both trade and knowledge links which can be seen from the instruments.

Wáng Xīdān 王希丹

Two different kōnghóus found from the murals of the Xiexing Stone Coffin

In 2014, the Xiexing stone coffin (解兴石堂) was excavated from a construction site on the east side of the Yuhe River, Datong City of Shanxi Province, China. The ink inscription confirms that it was made for Xiexing and his wife, and was completed in the fourth year of the Tai'an period (458 CE) of the Northern Wei Dynasty. No other remains were found in the stone coffin, but the four walls are full of paintings. Especially, musical instruments and ensembles shown on both sides of the walls and the main wall, including Dǐ (笛, vertical flute), Pípa (琵琶, round-shaped lute), Zhēng (箏, plucked zither) and so on. There are two Kōnghóus (箜篌, harp) found in these paintings. One was behind the female owner on the main wall, and a man played it (Type A). The other was on the west wall (Type B); a man played it in an ensemble with another man who played Zhēng. The two Kōnghóus show different shapes and also different ways of playing. Type A was similar to the unearthed Kōnghóu remains in Xinjiang Province, China. Type B was like the angular-shaped harp and was easier to find in other iconographic materials of similar dates, such as murals, figurines, grottoes, etc. This article focuses on the two Kōnghóus, including basic description, shape comparison, possible performing way, ensemble with other musical instruments, and comparative discussion, in order to fill them into the different transmission lines of Kōnghóu in the middle period history of China and other Eurasian regions.

Wáng Yǒuhuá 王友华

Musicological analysis of Zeng Houbao's chime bells

Zeng Houbao's Chime bells were unearthed from the Zaoshulin Cemetery T168 in Yidigang Cemetery, Suizhou, Hubei Province, China. The Zaoshulin Cemetery is a tomb site of the Zeng State during the Spring and Autumn Period. T168 is one of the five large tombs that have been excavated in the central core area of the Yidigang Tomb Group's Zaoshulin Cemetery. The tomb owner is Zeng Houbao, ruler of Zeng State during the Spring and Autumn Period. The tomb dates back to about 650-623 BC, later than the tomb of Zeng Gongqiu in the early period of the middle Spring and Autumn Period, but earlier than the tomb of Zeng Houde in the late period of the middle Spring and Autumn Period in the same cemetery. The excavation of this tomb fills the gap in the history of Zeng State in the middle period of the Spring and Autumn Period, and is of great significance for the research of the history. Fifteen bronze bells were unearthed from the

tomb, and two bronze bells were recovered by the public security department. I conducted sound measurements on this set of bells in the warehouse of Suizhou Museum in early September last year. The inscriptions, sound measurement data, and volume of this set of bells indicate that this set of bronze bells was made of sufficient materials and was finely cast. The arrangement of this set of bells is very standardized. However, the entire set of bells had not been finely tuned and has poor musical performance, making it funerary objects. The original sequence of Bo was 4 pieces, and the original sequence of Yong Bell was 2 sets of 8 pieces. Currently, 1 piece of Bo and 2 pieces of Yong Bells are missing. The Zeng Houbao's Chime bells are binary combination chime bells, with the combination form being: Bo (4 pieces)+Yong Bell (8 pieces)+Yong Bell (8 pieces).

W□ *Tiān* 武天 and Zhāng Y□ 张宇

Reconstructing ritual soundscapes: Musical iconography in Yao “Dadao Bridge” (大道桥) Scrolls

“Dadao Bridge” (大道桥) scrolls are a distinctive form of Yao shenxianghua (神像画, deity iconography), central to funeral rites among Yao communities in southern China. These long ceremonial scrolls depict the soul's journey across a cosmic bridge into the afterlife, accompanied by deities, ancestors, shamans, musicians, and dancers. As material carriers of ritual knowledge, they preserve richly encoded religious, cosmological, and sonic elements, making them a vital archive of visual-musical tradition. This study investigates how musical iconography in Dadao Bridge scrolls can inform reconstructions of the ritual soundscape in traditional Yao funerary practice. It asks how such imagery reflects processes of continuity and transformation shaped by the interaction of Yao indigenous belief systems with Han Chinese and Daoist musical frameworks. The research aims to trace the embedded sonic knowledge within scroll imagery — not to replicate extinct sounds, but to understand how intangible musical heritage is preserved and reshaped through visual culture. Methodologically, the study combines iconographic analysis of 19th–20th century scrolls with ethnographic fieldwork in Guangxi and Hunan provinces. Sources include interviews with ritual specialists, audio recordings, and participant observations of funeral ceremonies. Findings reveal enduring correspondences between depicted instruments and live ritual practices. Ensembles shown in the scrolls—featuring barrel drums, gongs, flutes, and suona horns—remain active today, albeit with adaptations. The scrolls serve not only as historical representations but as active ritual objects that encode and transmit sonic knowledge. By situating the Dadao Bridge scrolls within both historical iconography and contemporary ritual practice, this study demonstrates that visual representations can serve as primary sources for tracing the diachronic transformation of musical performance. The scrolls do not merely document past sonic forms but actively participate in shaping current ritual soundscapes. Their compositional structure—such as the positioning of musicians, instrument clusters, and embodied gestures—provides insight into the performative logic of Yao funerary music across time. This research thus offers a concrete case study of how musical meaning is encoded, transmitted, and transformed through visual media, contributing directly to music archaeology's efforts to reconstruct performance contexts through iconographic analysis.

Kamila Wystucha and Stefan Hagel

Revisiting the ‘Silver Pipes’ from Pompeii MANN inv. 76891+76894

Although the ‘Silver Pipes’ from Pompeii are among the most extensively studied aulos finds, they warrant renewed attention due to recent research revealing previously overlooked design features. Conducted as part of a joint interdisciplinary project between the University of Pavia and the Austrian Archaeological Institute, this study has identified sections containing multiple toneholes that were discovered through an endoscopic survey. These components, partly neglected in earlier examinations, offer new insights into the instrument's construction and potential performance capabilities. Building upon existing organological interpretations of this possible pipe pair, our paper re-evaluates its musical characteristics in regard to the newly identified design features and in reference to other recently studied aulos finds.

Zhāng Y□ 张宇 and W□ *Tiān* 武天

Virtual strings, real heritage: Interactive digital revitalization of the Yazheng

The yazheng (轧筝), an ancient Chinese bowed string instrument documented since the Tang Dynasty (618–907 CE), is richly described in historical texts such as the Old Book of Tang (《旧唐书》, *Jiutangshu*) and the Yue Shu (《乐书》), and vividly depicted in Ming Dynasty iconography, including Guo Ziyi Baishou Tu (《郭子仪拜寿图》, Birthday Tribute to Guo Ziyi) and Xianzong Yuanxiao Xingle Tujuan (《宪宗元宵行乐图卷》, Ming Emperor Xianzong's Celebration of Lantern Festival). Despite its historical prominence, surviving examples are rare today, with a notable exception preserved by the Guo family in Wugang City, Henan Province, where the instrument has been continuously transmitted since the Qing Dynasty. This study employs interdisciplinary methods—combining textual analysis, iconographic interpretation, and ethnomusicological fieldwork—to examine the yazheng's historical significance and contemporary status. Field observations reveal significant acoustic degradation in the Qing-era instrument due to material aging and structural deterioration, posing challenges to preserving its authentic sound and cultural value. To address these constraints, the study proposes a digital revitalization model that integrates advanced digital technologies with established content production workflows and interactive social media applications. The proposed platform aims to enable historically informed virtual reconstructions of the yazheng and offer enriched user experiences. While similar digital heritage approaches have been applied to virtual exhibitions of cultural relics, traditional musical instruments remain underrepresented, often lacking academic rigor, accessibility, and interactivity. This digital approach offers twofold theoretical contributions: advancing scholarly inquiry into the authenticity of historical instruments and promoting broader public engagement and cultural transmission through immersive digital experiences.

Posters

- **Felipe Aguirre:** (1) The “organic” connotation of musical instrument: A philosophical and semantic analysis (2) The semantic spectrum of *χρᾶω* / *χρησις* in musical performance
- **Luboš Chroustovský:** Experimental making of shell horns
- **Ireneusz Czajka – Katarzyna Tator:** Computer methods in artifacts reconstruction
- **Isuru Dehideniya:** The chest monochord zither instruments in ancient Sri Lanka
- **Dōng Jìngyí 董静怡:** Tracing ancient melodies, exploring new sounds in objects: A review of domestic publications on Chinese music archaeology
- **Sandra Fleury:** Booming tympana: the healing sound of ecstatic gods
- **Eva Fock:** Between knowledge and nonsense
- **Anna Gandossi-Boshnakova:** Between reality and imagination: rethinking the reliability of musical instrument depictions in Greek vase iconography
- **Dylan Lawrence Gibson:** A tablaturisation methodology for the Hurrian music: Tablets and fragments
- **Anna Kocánková:** Carnyx from a central European perspective
- **Aniruddha Ramamurthy Kondi:** The Mānasollāsa of Someśvara: Reconstruction of musical instruments and role of textual criticism
- **Heidi Köpp-Junk:** The sistrum, the snake, and Tutankhamun
- **Florian Leitmeir:** The loud limes!? Surveying sound artifacts at the border of the Roman Empire in Rhaetia and Germania Superior
- **Liú Xi 刘小彤:** The name ‘Yōng’ of Shang Bells: Oracle-bone inscriptions
- **Mohamed Maged – Abdul Basset Hatab – Eman Elbably:** Scenes of concerts in the tombs of West Thebes - Luxor
- **Beate Maria Pomberger – Sergey Makhortykh:** Idiophones from the Caucasian collection at the Natural History Museum Vienna
- **Rèn Tóng 任彤 – Yóu Hóngbīn 游红彬:** Rhythms of the Homeland: An ethnographic study of Renli Village drum traditions
- **Sabine Réto:** The wind instruments in ancient Germania from an organological and archaeological perspective
- **Sòng Yíméng 宋怡梦:** The configuration of “Zhong ju” and ritual music evolution
- **Wáng Ruòyáng 王若阳:** Musical figurines with wind and percussion instruments from the tomb M3 of the Sixteen-Kingdoms Period at Dengjiazhong Village, Xi’an City, Shaanxi Province, China
- **Alessia Zangrando – Elena Braidotti – Annalisa de Franzoni:** Echoes of elegance in Aquileia: Exploring the auditory dimensions of Roman jewellery
- **Zhāng Míng 张明:** Iconographic study of the Yuexuan (musical suspension system) in Mawangdui silk paintings

13th Symposium of the International Study Group on Music Archaeology New Approaches in Music Archaeology

The symposium will explore innovative research and methodologies in music archaeology, fostering interdisciplinary dialogue and collaboration. Its thematic scope encompasses recent investigations into the musical cultures of the past, with particular emphasis on archaeological finds of musical instruments, including new discoveries, technological analyses, and contextual evaluations. Attention will also be given to textual evidence – literary and epigraphic sources that shed light on musical practices, philosophies, and education in historical cultures – and to iconographic representations of music and performance, examined for their cultural, social, and ritual significance. Another key strand will be experimental music archaeology, with reconstructions of ancient musical technologies and performance practices. In the tradition of ISGMA, the symposium places special emphasis on integrative approaches that combine archaeological, textual, and iconographic evidence, aiming at a holistic understanding of ancient music-making.

Organisers: Stefan Hagel, *Austrian Academy of Sciences, w.M*
Florian Leitmeir, *University of Würzburg*
Beate-Maria Pomberger, *Museum of Natural History, Vienna*
Kamila Wysłucha, *Austrian Academy of Sciences*

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