

STUDIA INSTRUMENTORUM MUSICAE POPULARIS
VOLUME VIII

**STUDIA INSTRUMENTORUM
MUSICAE POPULARIS
(NEW SERIES)**

Volume VIII

**SERIES OF THE ICTM STUDY GROUP
ON MUSICAL INSTRUMENTS**

Edited by Gisa Jähnichen

SIMP VIII

Refining versus Simplification in Transmission and Performance

Humans and their Musical Instruments as Part of Nature

Edited by Gisa Jähnichen

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INTRODUCTION BY THE EDITOR

This collection of contributions is a choice of papers given at the 24th symposium of the ICTM Study Group on Musical Instruments held from 29th of March to the 1st of April, 2023, at the Faculty of Music, University of the Visual and Performing Arts, Colombo, Sri Lanka.

Only strictly double-blind-peer-reviewed and for print recommended article are included. The volume is, therefore, comprising just 15 Articles, all put in alphabetical order of the author's name(s), while local habits of writing names are considered. The 24th symposium of the ICTM Study Group on Musical Instruments had two wider topics: One was about **sound manipulation** and one about **musical instruments as nature**. These two topics were served the public in finding personal points of departure through careful listening and continued discussion. All registered participants could access their online or offline presentation through video sharing. The topic division was far less prominent in reality. So, we tried to keep and to discuss them together.

As musical instruments and their parts are often used and well known among the readership, the editor refrained from putting these terms in italics for a better flow of reading. Also, we used full footnote referencing plus a final reference list to accommodate all possible traditions in reading articles. Mainly this is to avoid scrolling through articles in order to find sources and hints and, at the same time, to fulfil all standard preconditions of article publications. The articles are also copy edited, which also changed some points. All authors agreed to a publication through their timely submission.

The volume is thought for deepening the understanding of diversity and the long-lasting impact of sound imaginations through sounding objects. The ICTM Study Group on Musical Instruments agrees democratically to the change of the organisational name from ICTM to ICTMD (International Council of Traditions in Music and Dance). Whatsoever, this will not really change approaches and factual inclusions that were always given in the past and will be so in the future. Adhering to the majority principles, the members are well willing to co-operate and to do the best in their fields as they always did. Further, the membership of this Study Group is open to discussions with anyone in- and outside the organisation and does not conform to strictness in choosing speakers or attendees at symposia. Anyone, who may have to say anything can attend, discuss, or speak up with contributions.

The focus of all efforts lies on the communication of knowledge, which finds its expression in the organisational meaning.

Regarding publication rules, we are very thankful for organisational support as more readers can be reached if the outcome is in better shape. However, most financial considerations come a long time before a publication is ready for control or reviewing, so, this rule of controlling outputs is colliding a bit with the work flow of commercial prints or even online publications.¹ This might be the reason for still printing this without using the ICTM (nowadays the not yet drawn ICTMD) label. We want to encourage fast printing as outcomes in our field can be outdated soon. Also, we do not appreciate the financial policy of applications for funding and the exclusion of large parts of potential members for example in China, Iran, and some other places of the world, through using google powered tools for calendars, platforms, or any payments and registrations.

Correspondingly, we do our symposia with a big emphasis on knowledge distribution. Offline or online attendees are always to be valued in the same way. The need for in-person meetings is decreasing, so are the financial means for many of our most promising contributors. We do understand this as a sign of the times we live in and try to change ourselves accordingly.

Last but not least, we wish all readers a wonderful experience with these selected articles.

We have here two members of this Study Group that we wanted to remember in a special way through short statements.

They are Terada Yoshitaka and Rūta Žarskienė. Both of them passed away in 2023. We are indebted to their efforts in contributing to the accumulation of knowledge. And both of them were long standing members of the ICTM working in manifold functions. Yoshitaka was an open-minded colleague who developed a very strict sense of possibilities in terms of organisational changes. He was a driving force of the colloquia on musical instruments along the Silk Road, that took place in Shanghai. Also, he had a strong personality in fighting the

¹ We welcome all possible solutions.

odds of language barriers within his own country and in Asia in general.

Rūta Žarskienė was also a praised scientist in her field. She contributed not only remarkable outcomes to the body of knowledge but also



functioned as an organiser, editor, and networker. Shortly before her last month, we were still in contact and gave each other assurances of a soon-to-be recovery. She also attended the 24th Symposium of the ICTM Study Group on Musical Instruments with a great paper about *The Lithuanian Diaspora Brass Bands in the USA* that could not be finished anymore for submission to this volume. However,

the presentation is available via a YouTube personal channel and everyone who attended got access to all recorded presentations.

We all remember Rūta's warm-heartedness and calm understanding of facts. Her shyness paired with her outgoing character. Her insistence and her search for solutions. She was unbelievably active and attached to her topics. We all loved her personality and say thank you for having been with us for so long! Her last words in a chat communication were: 'Thanks that you don't forget me.' We don't. Never.

Gisa Jähnichen

Editor of SIMP + Chair of the Study Group on Musical Instruments

The following obituary was thankfully written by Rastko Jakovljevic in September 2023.

TERADA YOSHITAKA, A LUMINAIRE OF ETHNOMUSICOLOGY, ANTHROPOLOGY OF MUSIC, AND ARCHIVING

The ethnomusicology, anthropology of music, and archival preservation world mourns the loss of a true luminary, Yoshitaka Terada (1954-2023). Terada Yoshitaka completed his studies in Economics at Kobe University (1974-1976), Ethnic Studies, Shoreline College (Seattle, USA, 1977), as well as a BA in General Studies (1979), M.A. (1983) and PhD (1992) in Ethnomusicology at the University of Washington (Seattle, USA).

Terada Yoshitaka was a Professor Emeritus at the National Museum of Ethnology, Osaka, Japan, and the Graduate University of Advanced Studies. He was a visiting professor at some of the American and European schools, among which are the University of Pittsburgh, New York University, Universität Bonn, and the University of Illinois. Terada Yoshitaka did also the Best Longer Film in the 3rd International Folk Music Film Festival (Nepal, 2013), and he was a laureate of the prestigious Jaap Kunst Award, honoured in 2000 by the Society for Ethnomusicology in the United States. He was a valued member of some of the most important professional organizations, among others the Society for Ethnomusicology, the International Council for Traditional Music, the Society for Asian Music, the Asia Pacific Society for Ethnomusicology, and the British Forum for Ethnomusicology.

He was serving as an editor of *Music and Society in South Asia: Perspectives from Japan*, a collection of essays on South Asian performing arts by Japanese scholars (National Museum of Ethnology, 2008), and his papers featured many edited volumes and renowned international journals.

Within his astonishing two-decade-long work, Terada established significant contributions with both audio and visual collections and works, producing many documentaries and archive materials on musical traditions from diverse locations, including those made in India, the Balkans, and the Philippines.

An erudite scholar, with extensive training and analytical precision in moulding complex theoretical and practical knowledge of music and society, Yoshitaka Terada was an impassioned advocate for the global understanding of music and culture of Asia, particularly India, The

Philippines, North America, the Balkans, and many other regions. As a result, his academic output delivered crucial research.

Through his immaculate work and findings, Terada Yoshitaka was able to exceed the expectations of the most sophisticated academic readers by bridging the narratives of many striking personalities and musicians, envisioning music as a holistic human experience. In his meticulous, and in many stances pioneering work, Terada Yoshitaka was able to anchor his narratives of music to vitally important aspects of the human experience, among which memory, nostalgia, power, and politics perplexed in forming critical layers of his inspiring interpretation.

In his writings on South Indian music, Yoshitaka Terada brought to light the trajectories and complex relationships of the Periya Mēlam and the Carnatic – two closely connected and distinctive traditions. As in many other contributions, Terada used his understandings to establish a critical dialogue between past and the present with his ground-breaking research of music from



the Balkans, such as a documentary on zurna player Samir Kurtov (2008), Croatian sopile performers from Istra, but an impressive number of documentaries on the musics of Nepal, Cambodia, Philippines, Japan, Korea, Portugal, Puerto Rico, South India, and North America as well. Notably, his theoretical and performative proficiency of the nagaswaram and thavil greatly contributed to understanding the Indian musical universe, thus moving the cornerstones of our disciplinary knowledge.

Terada Yoshitaka passed away leaving an unparalleled legacy that has forever enriched our collective appreciation of music's diversity and experience with his distinguished research and unparalleled dedication that delivered extraordinary results. Yoshitaka's scholarly contri-

butions were vast and impactful, garnering acclaim and respect within the academic community.

His academic prowess was only surpassed by his passion for archiving and preserving musical artifacts and documentation. He meticulously curated historical recordings, musical instruments, and manuscripts, ensuring their safeguarding for future generations. His dedication to this preservation was crucial in deepening our comprehension of the evolution of music and its cultural significance. He believed that in the symphony of human existence, every culture's unique notes contribute to a harmonious whole. He believed in people and humanity, and while his passing leaves a void in the academic and ethnomusicological communities, his greatness as a colleague, and a friend will only become brighter. Terada Yoshitaka's inspiring contributions and legacy will bring us closer to the wholeness we are all aiming for.

Rastko Jakovljevic

Vice-chair of the ICTM Study Group on Musical Instruments

September, 2023.

REFINING VERSUS SIMPLIFICATION IN SAPE PLAYERS' TRANSMISSION AND PERFORMANCE THROUGH SOUND MANIPULATION

Ahmad Faudzi Musib¹

Abstract

Sarawak distinguishes out with its multicultural flexibility in comparison to a larger Malaysian nation-state where pluralism is all-encompassing and dominant. That is, Sarawak society appears to be more open to appreciating the complex tapestry of its people's lives as well as their stated desire for an identity distinct from any dominant culture. The growth of regional music on audio carriers promotes the economics of a region. Aside from generating revenue, the music of Kayan and Kenyah and other groups of people living in the region can be shared with people in other countries, attracting tourists and social scientists from around the world. Among the main protagonists are Tusau Padan, Matthew Ngau Jau, Jerry Kamit, and Tuyang Tan Ngan. This study compares and contrasts performance ideas of their sape playing and productions, addressing simplification and refining of sound/devices/musical instruments and setting using some elements of Hendrix and Edge's (U2 guitarist). The analysis will be focused on specific sound qualities, gadgets employed, and musical instruments as a whole. The discourse encompasses both artists' perspectives as well as the audience's comprehension.

Keywords

Sape, Kayan, Kenyah, Sound production, Field recordings

INTRODUCTION

Sarawak stands out for its multicultural adaptability compared to a larger Malaysian nation-state where pluralism is all encompassing and

¹ Ahmad Faudzi Musib obtained his PhD at Universiti Putra Malaysia in 2015. He is successfully researching and teaching at this university in Malaysia.

Musib, Ahmad Faudzi (2023). Refining versus Simplification in Sape Players' Transmission and Performance through Sound Manipulation. *SIMP, Studia Instrumentorum Musicae Popularis, (New Series)*, 8. Edited by Gisa Jähnichen. Berlin: Logos, 1-18. DOI 10.30819/5685.01

dominating. Sarawak society is more open to understanding the intricate tapestry of its people's lives and their proclaimed desire for a distinct identity from any dominant culture.

The cultural performances all around the state of Sarawak that draw domestic and foreign audiences demonstrate this. First, one must recognize the opportunity to view the genuinely different arts in Sarawak, which are rich in weaving, ceramics, painting, and music. There were performances at the Kuching Waterfront, the guesthouse, and the prestigious concert venue in the Sarawak State Assembly (DUN), all nearby. Visitors to the guesthouse can see this traditional art being created there and get a taste of what it is like to live in one of the many distant longhouses, including those Padawan, Bau, and Long Semiang, to name a few. The expansion of regional music on audio carriers benefits a region's economy. Aside from earning cash, Kayan and Kenyah's music and those of other groups of people living in the area can be shared with people in other nations, attracting visitors and social scientists from all over the world.

This study examines how Sarawak's sape music, played by Tusau Padan, Matthew Ngau Jau, Jerry Kamit, and Tuyang Tan Ngan, reflects the cultural practices, values, and beliefs of the region. The study also compares their methods to those of Jimi Hendrix and The Edge and shows how their views on music production fit into the larger cultural context. Finally, by using cultural theory, the study investigates how power dynamics influence the creation and consumption of music, such as the music industry's role in supporting specific genres and styles and how these dynamics relate to cultural practices and values.

CULTURAL THEORY

The cultural capital of Pierre Bourdieu² refers to the information, skills, and cultural practices that are valued and rewarded by a specific social group or institution. Knowledge of musical genres, instruments, production methods, social networks, and relationships that support success in the music industry could fall under this category. This study looks at Sarawak sape music performed by Tusau Padan, Matthew Ngau Jau, Jerry Kamit, and Tuyang Tan Ngan to discover how it re-

² Smith, Vicki, ed. (2013). *Sociology of Work: An Encyclopedia*. SAGE Publications online, 143.

flects local customs, values, and beliefs. Their techniques were compared to those of Jimi Hendrix and The Edge, and their viewpoints on music creation fit into a larger cultural framework. Furthermore, the research examines how the music industry's role in supporting specific genres and styles affects music production and consumption and how these dynamics link to cultural practices and values. Cultural capital in society is unequally allocated, with those in power and privilege having greater access to and influence over cultural resources. Applying this theory to the study of sape music in Sarawak could entail investigating how cultural capital is distributed within the region's music business and how this distribution of cultural capital influences music creation and reception.

KAYAN AND KENYAH GROUPS

Sarawak in Borneo, Malaysia, is home to the indigenous ethnic groups known as the Kayan and Kenyah, whose name derives from the phrases Orang Ulu, Dayak Orang Ulu,³ is a term used to designate all of the communities who reside upriver in Sarawak's vast interior. According to Lindell⁴ and Welman⁵, these groups include the significant Kayan and Kenyah groups and the smaller, nearby Kajang, Punan, Ukit, and Penan groups. The groups have shared cultures and traditions, a long history of habitation in the region, and a predominance of farming and fishing as ways to make a living. The musical tradition of the Kayan and Kenyah is vast, and music is a significant part of their social and cultural life. The sape, a plucked lute-like zither, with a body designed a bit like a boat and constructed from a single piece of wood,

³ Orang Ulu means upriver people and is a term used to collectively describe the numerous groups of people that live upriver in Sarawak's vast interior. It is not meant to be derogative, but a bit indifferent. Such groups include the major Kayan and the Kenyah, and the smaller neighboring groups of the Kajang, Punan, Ukit, and Penan." Welman, Frans (2011). *Borneo Trilogy Sarawak. Book 2 (2)*. Bangkok: Book House, 138; Lindell, Pamela N. (2010). *A Critique of William Geddes' the Land Dayak of Sarawak. Representation, Identity and Multiculturalism in Sarawak*. Edited by Zawawi Ibrahim. Kuala Lumpur: Vinlin, 45-73.

⁴ Lindell, Pamela N. (2010). *A Critique of William Geddes' the Land Dayak of Sarawak. Representation, Identity and Multiculturalism in Sarawak*. Edited by Zawawi Ibrahim. Kuala Lumpur: Vinlin, 45-73.

⁵ Welman, Frans (2011). *Borneo Trilogy Sarawak. Book 2 (2)*. Bangkok: Book House.

is one of the most distinctive musical instruments connected to these communities.

Traditionally, men play the sape during significant cultural occasions, including weddings, funerals, and festivals celebrating the rice harvest. In recent years, the music of the Kayan and Kenyah, particularly the sape music, has gained greater recognition and appreciation beyond the local community. This has been partly due to local musicians such as Tusau Padan, Matthew Ngau Jau, Jerry Kamit, and Tuyang Tan Ngan, who have worked to promote and preserve traditional music while incorporating their contemporary elements and styles. Their work has helped bring the sape music of the Kayan and Kenyah to a broader audience, both within Malaysia and internationally.

The study analyses the sape playing and productions of Tusau Padan, Matthew Ngau Jau, Jerry Kamit, and Tuyang Tan Ngan. Hence, the aim is to compare and contrast their performance ideas, focusing on simplifying and refining sound, devices, musical instruments, and settings, using some elements of Hendrix and the Edge's (U2 guitarist) style through phenomenology. Through this assessment, the study was able to distil information on the guitar playing style of Hendrix versus the Edge of U2 from the perspective of complexity versus simplicity.

THE EDGE OF U2

David Howell Evans, better known as The Edge, was a guitarist and musician born in Barking, Essex, England, on 8th of August, 1961. The rock band U2, which he co-founded with Bono and other bandmates in 1976 when they were still in high school in Dublin, Ireland, is where he is most recognized for his work as the lead guitarist. The Edge experimented with various guitar styles in the early years of U2, including punk and post-punk, and created a distinctive sound by combining effects of pedals and echo units. He is renowned for using delay and echo effects to produce a 'wall of sound', a distinguishing feature of U2's music. The Edge's use of traditional Irish music in U2's music reflects his desire to connect with his Irish heritage and to pay tribute to the music that has influenced him throughout his career. The Edge's use of traditional Irish music can be heard in several U2 songs, but some notable examples include in the following table (Figure 1).

The Edge's connection to his Irish heritage was an essential aspect of his identity that impacted his artistic decisions. He incorporated traditional Irish elements into U2's music, expressing his identity and connecting with his roots. Drawing from phenomenology, he intentionally incorporated his personal experiences and emotions into his music, focusing on exploring conscious experiences.

No	Compositions	Descriptions of some elements
1	Sunday, Bloody Sunday	The Edge's characteristic guitar tone, which is seemingly impacted by Irish music, can be heard in the song's entrance along with a military snare drum.
2	Van Diemen's Land	The song features an acoustic guitar and mandolin, giving it a distinct Irish folk feel.
3	Running to Stand Still	The song's opening features the slide acoustic guitar, and towards the ending, a harmonica fills in, which are so-called standard instruments in traditional Irish music.
4	Pride in the Name of Love	The Edge's use of "delay" effects that imitates a mandolin and other traditional Irish instruments in this version showcases some Irish heritage.

Figure 1: Traditional Irish music as understood by the imagined audience in U2's music reflects Irish heritage in several U2 songs.

He also aimed to capture the liveliness and spontaneity of a live performance in the studio, immersing himself in the present moment and remaining open to new possibilities. Using traditional Irish music elements that involve improvisation and an emphasis on live performance, The Edge created a sense of immediacy and presence in U2's recordings. This allowed the listener to feel as if they were experiencing the music in the moment rather than listening to a pre-recorded product.

JIMI HENDRIX-JIMI HENDRIX EXPERIENCE

American guitarist, singer, and composer Jimi Hendrix was born in Seattle, Washington, on November 27, 1942. Johnny Allen Hendrix was the name he used at birth; he later adopted James Marshall Hendrix. One of the essential rock guitarists in music history is considered to be Jimi Hendrix. Hendrix played in several rhythm and blues bands at the beginning of his career, most notably with the Isley Brothers and

Little Richard. Then, in 1966, he relocated to England, where he joined forces with drummer Mitch Mitchell, bassist Noel Redding, and others to form the Jimi Hendrix Experience. The band immediately became well-known in the UK and Europe with their distinctive fusion of rock, blues, and psychedelic music.

Here is a collection of songs that Jimi recorded in his early years as a sideman with various well-known bands. Jimi Hendrix was renowned for his avant-garde methods of making music, which included establishing a club-like environment in the studio. He thought that the key to creating excellent music was to capture the vigour and spontaneity of a live performance.

Noel Redding the bass player, he said quote, I came in the studio and there's like, 30 people in the booth when we're trying to work and I said, can I sit down? I am just the bass player. You couldn't even move. It was a party, not a session. Jimmy wanted to create the atmosphere of an informal Club Jam. So, the studio guests would provide the additional crowd sounds, which were recorded⁶.

To achieve this, Hendrix would often invite a small group of friends and musicians to the studio and set up the equipment in a way that resembled a live show. For example, he would position the drums, bass, and guitar amps in a circle, with the musicians facing each other and playing together in real time.

This setup allowed for more natural and organic interaction between the musicians, producing a more realistic, livelier, club-like sound. Hendrix also encouraged his bandmates to experiment and take risks during recording sessions. He would often jam with the band and improvise new ideas on the spot, which he believed kept the music fresh and exciting. He was also known for incorporating unconventional sounds and techniques into his recordings, such as user feedback and distortion, to create unique textures and tones.

⁶ Shapiro, H. and C. Glebbeek (1995). *Jimi Hendrix: Electric Gypsy*. New York, St. Martin's Griffin; First St. Martin's Griffin Edition. This is a detailed biography of Jimi Hendrix that includes information about his life, music, and legacy. It also examines Hendrix's guitar playing and production techniques. A track was recorded for *Voodoo Child* at the Record Plant in New York City on May 2nd, 1968. During a late-night jam session, Jimmy Hendrix collaborated with his drummer Mitch Mitchell, Steve Winwood on Hammond B3 (who was then a member of 'Traffic'), and Jack Cassady, the bassist for Jefferson Airplane. At 6 minutes and 53 seconds into the track, a mockup crowd cheering can be heard after Winwood's organ solos.

According to phenomenology, Jimi Hendrix used this technique to emphasise the importance of subjective experience and perception in his music and to give it a community-based, interactive feel. This also clarified why Hendrix believed it was essential for his music to preserve the vitality and spontaneity of a live performance while being recorded. The following table (Figure 2) describes some elements of his works.

No	Compositions	Descriptions of some elements
1	Voodoo Child (Slight Return)	In the introduction, the Jimi Stratocaster melody accompanied by the voices of the Jimi singing in a unison section creates a dynamic and lively sound. The song was recorded in a jam-style session with Hendrix and his bandmates playing together in real-time which lasted for 15 minutes.
2	Purple Haze	Features a distinctive guitar riff and a powerful, driving rhythm section. The song was recorded live in the studio, with Hendrix and his bandmates playing together to create a dynamic and interactive sound through combination of <i>Phaser</i> and <i>Fuzz box</i> in a stereophonic sound field
3	Fire	The track features a live recording in the studio, with Hendrix and Noel in unison with Mitch Mitchell's two bar drum break in the introduction.
4	Machine Gun	This epic track from Hendrix's Band of Gypsy's album is a showcase for his virtuosic guitar skills and his band's tight, improvisational sound. The song was recorded live at the Fillmore East in New York City and features extended solos and improvisations from Hendrix and his bandmates.

Figure 2: The recordings showcase Hendrix's commitment to creating a communal, interactive sound in his music and his ability to capture the energy and spontaneity of a live performance in the recording studio.

COMPLEXITY VERSUS SIMPLICITY

Jimi Hendrix and The Edge of U2 are highly influential guitarists with different playing styles. Hendrix is known for his complex, innovative guitar playing, while The Edge is known for his minimalistic, straightforward process.

Hendrix's guitar playing is characterized by his virtuosic technique, innovative use of effects, and ability to blend different styles of music

into a unique, cohesive sound. He was known for using feedback, distortion, and other products, which allowed him to create a range of sounds and textures that had not been heard before. Hendrix's playing was also highly improvisational, and he was known for his ability to create complex, extended solos that pushed the boundaries of what was possible on the guitar.

In contrast, The Edge's guitar playing is simple and minimalistic. He often uses basic chord progressions and repetitive riffs to create a foundation for U2's music. In addition, the Edge is known for his use of delay and other effects, which allow him to make a layered, atmospheric sound that complements the rest of the band's instrumentation.

SAPE PLAYING STYLES AND MUSICAL IDEAS OF TUSAU PADAN, MATTHEW NGAU JAU, JERRY KAMIT, AND TUYANG TAN NGAN

Tusau Padan was born in 1933 in Long Nawang, Apo Kayan, Kalimantan, Indonesia, and is a member of the Kenyah ethnic group⁷. Together with 60 other members of the Long Nawang Kenyah group, he arrived in Sarawak in 1959. Alena Murang⁸, the author, quotes from the article: "A combination of distinctive plucking techniques, percussive effects, and vocalizations characterizes Tusau's style of playing. Similar to what was described by Matthew Ngau Jau as a student of the late Tusau Padan. Unlike the technique of 'hammer on and pull off' on a guitar, the effects are produced as the fingers hitting the wooden body of the sape that was made with *arau*⁹ wood, thus creating the percussive results as shown in a waveform view of Figure 1a and the spectrogram analysis of Figure 3b.

⁷ Lim Keh Nie, Connie, Narawi Haji Rashidi, and Saufi Aiman Yahya (2016). *Alat Muzik Tradisional Sarawak*. Kuala Lumpur: Dewan Bahasa dan Pustaka, 117.

⁸ Murang, Alena (2022). *The Keeper of the Song: Tusau Padan*. Available at alenamurang.com, last visited 28 September, 2023.

⁹ The common Malaysian name, which is of Sarawakian origin, for the timber of *Austrobuxus*, *Cephalomappa* and *Drypetes* (Euphorbiaceae). Vernacular names applied *gelugor salak* (Peninsular Malaysia), *kayu mapa* (Sabah), *lidah-lidah* (Peninsular Malaysia), *mentulang* (Sabah) and *adapon puteh* (Sabah). Major species include *Austrobuxus nitidus*; *Cephalomappa mallotica*, *penangensis*; *Drypetes longifolia* and *pendula*. The sapwood is not well defined from the heartwood, which is pale straw-coloured when fresh, darkening on exposure to a light yellow. Wong, T. M. (1982). *A Dictionary of Malaysian*

Tusau Padan has experimented with various string types and tunings to create a unique sound. Later recordings, titled *Masters of the Sarawakian sape*¹⁰, introduced electronics into his sape by adding an electric guitar pick-up for amplification. While comparing and contrasting these talented musicians, one factor to consider is the setting and musical instrument perspectives by seeing the environments in which they perform and the additional instruments they use to create their songs.

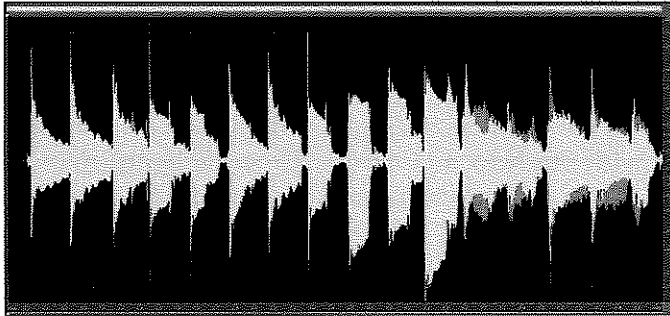


Figure 3a: Percussive effect technique used by late Tusau Padan (viewed via waveform analysis in mono) – Intro of Det Diet by Matthew Ngau Jau 13th of September 2010.

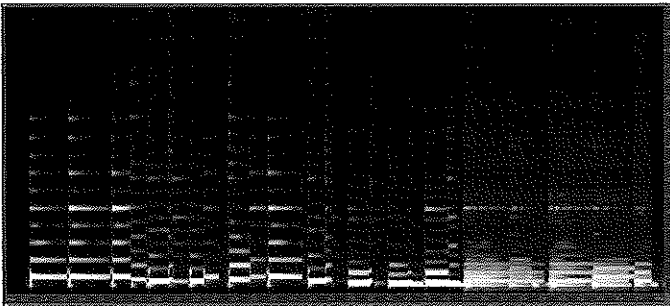


Figure 3b: Percussive effect technique used by late Tusau Padan (viewed via spectrogram analysis in mono) – Intro of Det Diet by Matthew Ngau Jau 13th of September 2010.

Timbers. Malayan Forest Record No. 30. Kuala Lumpur: Forest Research Institute Malaysia, 201. Also accessible via [http://mtc.com.my/wizards/mtc_tud/items/report\(126\).php](http://mtc.com.my/wizards/mtc_tud/items/report(126).php), last accessed on 18th February, 2023.

¹⁰ Padan, Tusau (1999) *Masters of the Sarawakian Sape*, Netherlands, PAN Records (3) – PAN 2068 <https://www.discogs.com/release/7817852-Tusau-Padan-Masters-of-the-Sarawakian-Sape>.

Tusau Padan performs in small, casual spaces like cafes and bars. During his early years, Tusau was hired as a musician, dancer, and craftsman at the Sarawak Museum, which was run by the Ministry of Culture and Youth at that time and is currently run by the Ministry of Social Development and Urbanization. When the Sarawak state government promotes tourist attractions in Sarawak, the late Tusau services as a musician and dancer were invaluable. Music and dance activities have taken him to the United States, England, Germany, Australia, Japan, and Korea¹¹.

MATTHEW NGAU JAU

He is a Kenyah of Long Semiang, Ulu Baram, Sarawak. Ulu Baram is associated with traditional Orang Ulu settlements, which includes Kayan, Kenyah, Saban, Punan, and Kelabit groups of people. In 2004, he produced a sape album as a compact disc containing 14 pieces of sape music: *Lan-e' Tuyang*, Ngorek and his teacher Uchau Bilong¹². His uniqueness and greatness are his ability to play various strings to diversify the variations of the tone of the sape, enabling him to employ more melodic and meditative qualities than expected in his sape playing. Matthew Ngau Jau's musical expression relates to his being innovative with his sape.



Figure 4: Sape with wooden tuning pegs, guitar machine heads to substitute the wooden pegs. The transformation makes for easier string replacement and precision of tuning. Photo by Ahmad Faudzi Musib 2012.

¹¹ Lim Keh Nie, Connie, Narawi Haji Rashidi, and Saufi Aiman Yahya (2016). *Alat Muzik Tradisional Sarawak*. Kuala Lumpur: Dewan Bahasa dan Pustaka, 121, 122.

¹² Lim Keh Nie, Connie, Narawi Haji Rashidi, and Saufi Aiman Yahya (2016). *Alat Muzik Tradisional Sarawak*. Kuala Lumpur: Dewan Bahasa dan Pustaka, 143.

He made some improvements to it, such as swapping out the wooden tuning pegs for a guitar machine head¹³ in Figure 2 for tuning stability and precision and adding a single coil pickup¹⁴ in Figure 5 with the help of amplification to play for a larger audience at prestige annual events like the Rainforest World Music Festival, in Sarawak.

As the string is plucked, the nickel composition in the metal strings, along with a magnetic pickup installed in the sape's body cavity, translates the vibration of the strings into sound at the amplifier. The result is a more distinct high overtone produced by the fluctuation of the string in the magnetic field of the pickup. This phenomenon can be explained by the pickup placement. Placing the pickup near the bridge (Figure 18) results in a brighter string sound.



Figure 5: Sape with single-coil pickup installed. Photo by courtesy of Chan Cheong Jan, 2010.

¹³ Ngau Jau, Matthew and Ahmad Faudzi Musib (2010). Interview in person. Serdang. using guitar machine heads allows for precision tuning and provides a convenient method for string replacement. Machine heads and guitar strings did complement each other in producing the desired sound. As the series is plucked, the nickel composition in the metal strings and a magnetic pickup installed in the sape's body cavity translate the strings' vibration into sound at the amplifier. The result is a more distinct high overtone produced by the fluctuation of the sape string in the pickup's magnetic field. The pickup placement can explain this phenomenon. They placed it near pickup bridge 13 (Figure 18), resulting in a brighter string sound.

¹⁴ - Musib, Ahmad Faudzi (2016). Reviewing the Recording Quality of a Local String Instrument (Sape) From the Perspective of Sound Preservation. *Malaysian Music Journal*, 5 (1): 110.

JERRY KAMIT

Jerry Kamit, a sape player from the Iban group, holds the position of Senior Musician at the Sarawak Cultural Village and is a member of the Tuku Kame group, which means “our rhythm” in Sarawak. The multi-instrumentalist and composer from Sarawak, who goes by the stage name “Jimmy Hendrix,”¹⁵ is well known for fusing traditional and current music. As a result, he has grown significantly in popularity and is acknowledged as one of the most significant sape musicians in the international contemporary music scene. His remarkable achievements include winning the championship in original instrumental works and modern instrument categories at the 12th World Championship of Performing Arts (WCOPA) in Los Angeles in 2009. In addition, he released several albums of original music that blended elements of traditional music with jazz, blues, and other genres. Furthermore, Jerry Kamit often performs with an ensemble of drum machines, loops, synthesizers, and electric bass, incorporating instruments alongside the sape.

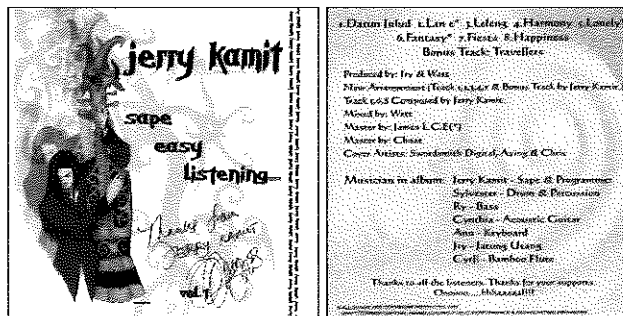


Figure 6: Jerry Kamit-Sape easy listening 2007, Volume 1

Jerry Kamit's album *Akai Nyamai*, which was recorded at Zanzibar Studio in Sarawak, presents a contemporary sape music recording that defies the conventional notion of traditional Orang Ulu musical instruments as being restricted to the longhouse community.

¹⁵ This name was used for him, although the original name of the idol is Jimi Hendrix.



Figure 7: Jerry Kamit-Akai Nyamai, *Sape, Volume 1*.

Through the composition “Akai Nyamai,” the album features a blend of backbeat loops and rich sound synthesis, demonstrating an innovative approach to sape music production. This recording challenges the prevailing perception of the sape instrument as a traditional tool, instead highlighting its potential to be utilized in contemporary musical expressions.

TUYANG TAN NGAN

Tuyang Tan Ngan, a Chinese yoga teacher and music enthusiast, has innovatively produced his version of the sape instrument by adding eight strings. This modification enables the sape to cover a broader range of tones, allowing for greater creative possibilities in composing pieces. Despite the enhancement, the traditional pentatonic scale in sape playing remains preserved.

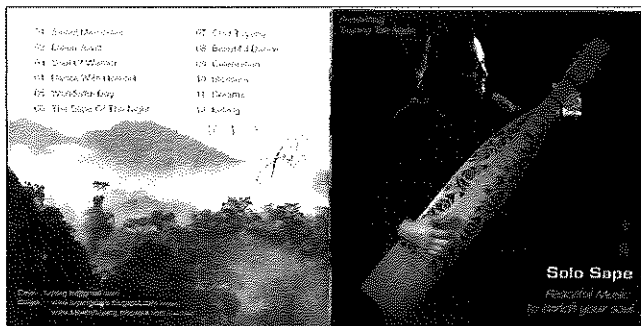


Figure 8: *Solo Sape: Peaceful Music to Enrich Your Soul* by Tuyang Tan Ngan, 2008.

The added strings also provide the potential for playing accompanying chords and the customary drones. This improvement is exemplified in

tracks 02, *Datun Julud*, 05, *Wonderful Day*, and 09, *Celebration*, of the album, which displays a diversified melody played on eight strings, four-string sape, because of these reforms.

It is worth noting that Tuyang Tan Ngan has a unique approach to incorporating proper contexts into his music¹⁶. He takes inspiration from natural sounds such as waterfalls and the sounds of the rainforest to create an immersive and tranquil atmosphere in his compositions. This approach highlights his creativity, innovative spirit, and deep connection to and appreciation for nature, a fundamental aspect of the Orang Ulu culture.

COMPARE AND CONTRAST

Tusau Padan's similarities between sape's music and the sound recordings of Hendrix and The Edge may lie in using distinctive techniques to create a unique sound. For example, Tusau's style of playing, which combines plucking techniques, percussive effects, and vocalizations, may be comparable to Hendrix's use of distortion and feedback or The Edge's use of delay and echo effects. However, the differences between Tusau's sape music and Hendrix and The Edge's sound recordings are significant. Tusau's music is influenced explicitly by the cultural practices, values, and beliefs of the Sarawakian people and their landscape, making it a unique representation of their culture. In contrast, Hendrix and The Edge's sound recordings are rooted in Western music traditions and do not have the same cultural significance as Tusau's sape music.

Matthew Ngau Jau employs more melodic and meditative qualities in his sape playing style, while Hendrix and The Edge are known for their use of distortion, feedback, and other effects to create a more aggressive and experimental sound. There are several sound recordings by Hendrix and the Edge that feature melodic and meditative qualities. For example, Hendrix's *Little Wing* and *Castles Made of Sand* are known¹⁷ for their melodic and introspective qualities. Similarly, the Edge's guitar work on songs such as *Bad* and *With or Without You* by

¹⁶ Track No 01, 06, 07, and 10 of the recording taken from the album of Tuyang Tan Ngan (2008). *Solo Sape: Peaceful Music to Enrich Your Soul*. He used waterfalls and the sounds of the rainforest to create an immersive and tranquil atmosphere.

¹⁷ Known to those who discuss specific issues from their viewpoint as guitar musicians or related cultural areas.

U2 features a more meditative and atmospheric approach to guitar playing.

However, a similarity between them is their ability to incorporate their cultural heritage into their music. Matthew Ngau Jau draws on the traditional music of Sarawak, while The Edge incorporates traditional Irish music into U2's sound. Both artists use their cultural background as inspiration for their music, resulting in a unique and authentic sound.

Jerry Kamit incorporates modern musical elements such as jazz and blues into his sape music, which gives his music a unique sound. Similarly, Hendrix and The Edge have been known for incorporating various musical styles into their recordings. Another difference is the level of experimentation and innovation in their music. Hendrix and The Edge are known for pushing boundaries and exploring new sounds and techniques. For example, the Edge's innovative use of delay units in creating memorable guitar riffs reflects his departure from traditional guitar techniques and stereotypes and adds a unique and distinctive element to U2's sound. Similarly, Jerry Kamit's exploration of contemporary sounds in sape music on his Akai Nyamai album pushes the boundaries of tradition and appeals to new generations.

Tuyang Tan Ngan emphasizes the connection between the sape and indigenous spiritual practices, as seen in his use of traditional melodies and rhythms. In contrast, Hendrix and The Edge's sound recordings do not typically incorporate such elements. However, one similarity between Tuyang Tan Ngan and Hendrix/Edge is their use of music to express cultural identity and promote social awareness. Tuyang Tan Ngan's sape music reflects the traditions and values of his indigenous community, while Hendrix and The Edge's music often addresses political and social issues.

- Jimi Hendrix's *Machine Gun* is a protest song against the Vietnam War, with lyrics that reference soldiers and casualties.
- U2's *Pride (In the Name of Love)* is a tribute to civil rights leader Martin Luther King Jr.
- U2's *One* is a song about unity and coming together, with lyrics that address issues of poverty, war, and AIDS.

CONCLUSION

The four well-known sape players in Sarawak have been the subject of much discussion as we have examined their musical genres and playing methods. We have also discussed how Hendrix and The Edge employed traditional Irish music and jazz and blues influences in their songs to speak to political and social themes, respectively. In contrast, their indigenous communities' traditional practices and values are promoted and preserved through the music of Tusau, Matthew, Jerry, and Tuyang Tan Ngan. Through the publication of albums and appearances at various festivals and concerts, local recording productions have significantly contributed to promoting domestic and global music. The Borneo Jazz Festival and the Rainforest World Music Festival are venues for notable performances. In conclusion, with their distinctive musical styles and methods, Tusau Padan, Matthew Ngau Jau, Jerry Kamit, and Tuyang Tan Ngan are significant personalities in the Sarawak sape music scene. Ancient cultural customs and beliefs inspire them, but they also include contemporary musical aspects to appeal to a broader audience. They conserve the rich musical history of Sarawak for upcoming generations by using their music to spread social consciousness and cultural identity.

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REMARKS

All depictions are freely accessible and used with permission. There doesn't exist any conflict of interests.

THE TUVAN KHÖÖMEI THROAT SINGING AND ITS IĞIL ACCOMPANIMENT AS INSTRUMENT OF NATURE

Choduraa Tumat and Bernard Kleikamp¹

Abstract

This essay introduces the vocal art of Tuvan throat singing – khöömei – and also the musical instrument – ıgil². These two are important in the musical culture of the Tuvans. In the Tuvan worldview, khöömei and ıgil are connected with nature. Tuvans say that man is a child of nature. Everything that sounds is subordinated to and equal to the highest standard of sound: the sound of nature. In this essay, we show that the human voice is a body instrument when performing khöömei. When traditional musicians accompany their khöömei with the ıgil, the fullness of the whole symphony of nature is shown. In legends about the origins of khöömei and ıgil, we read that the sound is sacral and khöömei and ıgil were given to the Tuvans by the spirits of nature. Khöömei and ıgil are not human products.

Keywords

Tuva, Throat singing, Body instrument, ıgil, Nature

INTRODUCTION

Tuvan throat singing khöömei and ıgil playing today are known all over the world. From the end of the 1980s onwards, Tuvan khöömei has become known under various names (biphonal singing, overtone singing, guttural singing) and many recordings of khöömei music were released by international record companies³. But before that, from 1936 till the end of the 1970s, many interesting sound carriers (both on

¹ Choduraa Tumat is a famed Tuvan performer. She is known for her inspiring performances. Bernard Kleikamp is responsible for PAN records and he is an active member of the ICTM. They got to know each other during recordings of Choduraa Tumat's last album.

² ıgil (egil) is the Tuvan traditional two-string bowed musical instrument.

³ Among the first record companies to release Tuvan khöömei were Folkways/Smithsonian (USA) and Pan Records (Netherlands).

shellac and on vinyl) of Tuvan traditional music were also published in the Soviet Union on the state label Melodiya. In recent years, a lot of world music record companies published CD albums with Tuvan throat singing and igil music. World-renowned Tuvan music bands actively use in their music different styles of khöömei, and their music may be listened to in concerts in all parts of the world (Figure 1).

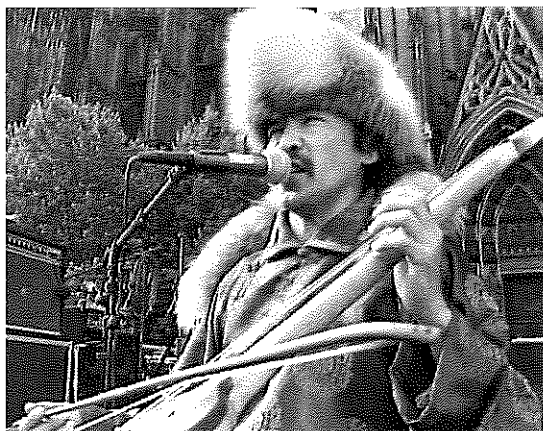


Figure 1: Kaigal-ool Khovalyg playing on Cologne's Domplatz on 5th of July 1991. Photo by Bernard Kleikamp.

The Tuvan people live in the Republic of Tuva, which is part of the Russian Federation in south Siberia, in the Sayan-Altai region, practically in the center of Asia. Their nomadic culture is closely related to Central-Asian culture. Tuvans have an ancient history. Their religion is based on animism and shamanism. In the late 18th century, Tibetan Buddhism (also known as Lamaism) arrived in Tuva. Shamanism and Lamaism are still part of modern Tuvan life.

Today, one can observe shamans using khöömei throat singing techniques as a part of their rituals. The distinctive culture of the nomadic Tuvan people is closely connected with their religious perceptions of the world and with the perception of space and time. The Tuvan nomads believe that everything in nature has a living soul or spirit: mountains, taiga, rivers, lakes, and trees.⁴

Two of the mysterious phenomena of the traditional musical culture of Tuva are throat singing – khöömei – and the music of the bowed

⁴ Beahrs, Robert Oliver (2021). Gifts of the Sygytchy-Sons: Tethering Melodies to Land, Kin, and Life Energy at the Khöömei Ova, Tyva Republic. *Asian Music*, 52(2): 72-107.

instrument igil (also known as egil). These two factors, khöömei and igil, are of major importance in Tuvan traditional music culture.

HISTORICAL OVERVIEW

Various clan tribes⁵ have lived on the territory of Tuva over the centuries, and all have preserved their traditional culture. Traditional music is one of the central driving factors in the revival and development of the spiritual culture of the Tuvans.

In pre-revolutionary times, the traditional musical culture of the Tuvans, as well as of other peoples of the Sayan-Altai region that were part of Russia, was little studied. In research studies of Russian ethnographers and travelers,⁶ there are mentions of the unusual vocal technique and musical instruments of the Tuvans. The first sound recording of Tuvan throat singing was made in western Tuva by A. Anohin in 1909 on a wax cylinder. Early researchers such as Aksenov have made significant contributions to the study of traditional musical culture of the Tuvans. In the period 1940 to 1960 in the Soviet era, Aksenov was the first to give an accurate detailed description of the four styles of Tuvan khöömei throat singing: kargyraa, borbangnadyr, sygyt, and ezengileer. But he writes that:

“Tuvans do not put throat singing in any connection with shamanism, (they) regard it in purely everyday aesthetic terms, and bring it closer

⁵ Скифы, хунны, уйгуры, кыргызы (Scyths, Huns, Uighurs, Kuryzes).

⁶ To name a few: Anokhin, A.V. (n.d.) Tuvan Institute for Humanities Research Manuscript Archive, f. 864; Kenin-Lopsan, M. (2013 [1995]). *Algyshi Tuvinskich Shamanov* [Songs of Tuvan Shamans]. Kyzyl: Novosti; Yakovlev, Evgeniy Konstantinoviç. (1900). *Etnograficheskie Obzor Inorodçeskogo Nasele-niya Dolini Yujnogo Eniseya i Ob'yasnitel'nyy Katalog Etnograficheskogo Muzeya*. Minusinsk: Tipografiya; Kornokova B. I., Grumm-Grjimaylo, Grigoriy Efimoviç (1926). *Zapadnaya Mongoliya i Uryanhayskiy Kray*. Leningrad: Gosudarstvennoe Russkoe Gograficheskoe Obşestvo; Carruthers, David (1996 [1913]). *Unknown Mongolia: A Record of Travel in N.W. Mongolia 1910–11*. *Asian Educational Services*. Beahrs, Robert Oliver (2021). *Gifts of the Sygytchy-Sons: Tethering Melodies to Land, Kin, and Life Energy at the Khöömei Ovaa*, Tyva Republic. *Asian Music*, 52(2): 72–107; Aksenov, A.N. (1964). *Tuvinskaya Narodnaya Muzyka*. Moskva: Muzyka Moskva; Aksenov, A. N. (1973). *Tuvin Folk Music*. *Asian Music*, 4(2), 7–18. DOI 10.2307/833827; Levin, M.G. and L.P. Potapov, eds. (1964). *The Peoples of Siberia*. Chicago: University of Chicago Press. Maslov, V.T. and B.P. Chernov (1979). *The Secret of a “Solo Duet”*. *Soviet Anthropology and Archaeology*, 18: 82–89.

to the quite everyday art of playing the music instrument khomus (jews harp)”⁷.

In this same period, shamans in Tuva used the khomus and throat singing as part of their shamanic rituals. But in Soviet times, shamanism and other religions were forbidden.

Since the 1980s, the question of the origin of throat singing was considered by historians, ethnographers, musicologists, culture specialists, folklorists, and linguists.⁸

An historical and ethnographic approach to the study of the religious views of Tuvans and their connection with traditional culture is applied in the works of Potapov, Weinstein, M. Kenin-Lopsan, E. Taube, and other ethnographers.

Kenin-Lopsan, Kyrgys, Samdan, and Suzukei consider worldview aspects in the spiritual culture of Tuvans from different angles.⁹

⁷ Aksenov, A.N. (1964). *Tuvinskaya Narodnaya Muzyka*. Moskva: Muzyka, 55.

⁸ For instance, in the works of Taube, Erika (1972). *Die Widerspiegelung religiöser Vorstellungen in Alltagsbrauchtum. Traditions Religieuses et para-religieuses des peuples Altaïques. Permanent International Altaistic Conference, Strasbourg*: 119-138; van Tongeren, Mark (2022). *Overtone Singing: Harmonic Dimensions of the Human Voice*. Newark: Terra Nova; Weinstein, Sevan and Mannai-ool, Mongush, ed. (2001). *Istoriia Tuvy* [The History of Tuva]: 2 vols. 2nd edition. Novosibirsk: Nauka; Yakovlev, Evgeniy Konstantinovič (1900). *Etnografičeskie Obzor Inorodčeskogo Naseleniya Dolin Yujnogo Eniseya i Ob'jasnitel'nyy Katalog Etnografičeskogo Muzeya*. Minusinsk: Tipografiya B. I. Kornokova; Beahrs, Robert Oliver (2021). *Gifts of the Sygytchy-Sons: Tethering Melodies to Land, Kin, and Life Energy at the Khöömei Ovaa, Tyva Republic. Asian Music*, 52(2): 72–107; Kyrgys, Z. K. (2002). *Tuvan Throat Singing: An Ethnomusicological Study*. Novosibirsk: Nauka. [Кыргыз, З. К. Тувинское горловое пение: этномузыковедческое исследование. Новосибирск: Наука, 2002.]

⁹ Kenin-Lopsan and Mongush, B. (1997). *Shamanic Songs and Myths of Tuva*. Budapest, Akadémiai Kiadó / Los Angeles: International Society for Trans-Oceanic Research; Kyrgys, Z. K. (2002). *Tuvan Throat Singing: An Ethnomusicological Study*. Novosibirsk: Nauka. [Кыргыз, З. К. Тувинское горловое пение: этномузыковедческое исследование. Новосибирск: Наука, 2002.]; Samdan, Z. B. (2011). *The Ritual and Magical Function of Khöömei in the System of the Traditional Worldview of Tuvans. Selected works: Tuvan Literature: Myth - Fairy Tale - Literature. Scientific publication*. Abakan: Journalist LLC. [Самдан, З. Б. Ритуально-магическая функция хоомей в системе традиционного мировоззрения тувинцев / Избранные труды: Тувинская словесность: миф – сказка – литература. Научное издание. - Абакан: ООО «Журналист», 2011.];

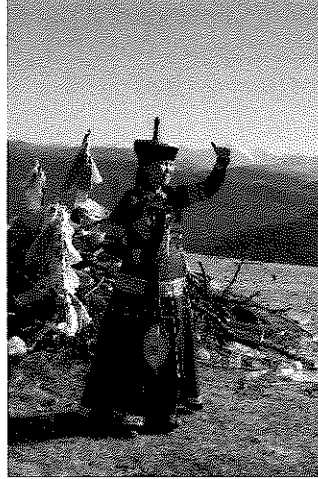


Figure 2: Female khöömei singer and igil player Aylanmaa Damyrán from the Tyva Kyzy ensemble, in front of an övaa. Photo by Olga Korotkaya, in Shui, Bay-Taiga region of Tuva, August 2015. From the archive of Choduraa Tumat.

The history of the study of throat singing is most fully presented in the monograph ‘Tuvan throat singing’ by Z. K. Kyrgys. She writes that Tuvan khöömei styles were used in special ceremonies like the Övaa Dagyyry (the Consecration of the övaa), which is one of the important sacral events in the traditional life of Tuvans until nowadays (photo 2). The Övaa Dagyyry is praying to the spirits of the high mountains and the taiga. On analyzing khöömei in the context of shamanistic culture, Z.K. Kyrgys concluded that Tuvan throat-singing khöömei

“...was originally connected with various ritual practices”¹⁰

BODY INSTRUMENT

Tuvan people believed that their singing (performing) khöömei and its styles kargyraa, sygyt, and ezengileer were always heard and enjoyed by the spirits of nature.

Suzukei, V. Yu (2006). The configuration of the development of the musical culture of Tuva: the dynamics of the actiological aspect. Kemerovo: Kemerovo State University of Culture and Arts.

¹⁰ Kyrgys, Z. K. (2002). Tuvan Throat Singing: An Ethnomusicological Study. Novosibirsk: Nauka. [Кыргыс, З. К. Тувинское горловое пение: этномузиковедческое исследование. Новосибирск: Наука, 2002.]: 67.

So, for example, considering the connection of throat singing with the world outlook of nomadic peoples from the point of view of a ritual-magic function, Z.B. Samdan¹¹ writes:

“The fact of occurrence of mythological and fairy-tale images and stories about khöömei singers tells that it is not only an external formal verbal decoration but an internal world outlook feature of Tuvans’ consciousness”.

Putting forward the idea about the ritual origins of the khöömei, Z.B. Samdan relies on the idea of ‘chosenness’ (избранничества), as defined by V.M. Zhirmunsky according to Samdan.¹² He also says that

this idea

“...penetrates all evolution of these types: from diviner-shaman, storyteller, epic singer, chronicler up to modern poets”.¹³

Also, V. Darzhaa’s position in explaining the connection of khöömei with cult rituals of antiquity is interesting. He underlines that throat singing in the past, as a rule, was performed

“...at a gathering of people, at carrying out of those or other cult actions”.¹⁴

When studying traditional sound representations of Tuvans and their world outlook basis, V. Suzukei singles out an image of nature which occupies a central place in the art creativity of the Tuvans. Suzukei writes that the origin of the ideal sound comes from nature, and us humans – Tuvans – are just trying to copy it. She further mentions that

¹¹ Samdan, Z. B. (2011). The Ritual and Magical Function of Khöömei in the System of the Traditional Worldview of Tuvans. *Selected works: Tuwan Literature: Myth - Fairy Tale - Literature*. Abakan: Journalist LLC: 204.

¹² Samdan Z. B. (2011). The Idea of “Chosenness” in the Ancient Turkic Monuments and the Performing Tradition of Tuvans / *Tuwan Literature: Myth - Fairy Tale - Literature. Scientific publication*. Abakan: Journalist LLC: 85.

¹³ Samdan, Z. B. (2011). The Ritual and Magical Function of Khöömei in the System of the Traditional Worldview of Tuvans. *Selected works: Tuwan Literature: Myth - Fairy Tale - Literature*. Abakan: Journalist LLC: 90.

¹⁴ Darzhaa, V. K. (2007). *Secrets of the Worldview of Tuwan Nomads*. Kyzyl: N.p., 204.

“...the ideal of pure sound is the harmonious sounds of nature, there is no cacophony or imbalance”.¹⁵

Suzukei’s interesting opinion is that khöömei – and the body of the artist – is also a ‘musical instrument’ which can ‘play’ (but not ‘sing’) a melody like a music instrument.¹⁶ She also mentions that “instrumental music without instrument” in vocal imitations is like the wind instrument shoor.¹⁷

The Russian researcher Yushmanov, when writing about the body instrument in the vocal art, is of the opinion that

“Singing and vocal-technical work are psychically initiated and psychically regulated human activities, during which the singer’s organism, which adapts differently to the various types of singing activity, becomes his musical instrument”.

He also puts forward the idea that

“...during singing the singer’s organism, whose functional organisation may vary according to the type of singing activity, becomes such an instrument”.¹⁸

Thus, previous researchers concluded that throat singing was closely connected with the traditional worldview of the Tuvans in the following ways:

– as a necessary attribute of heroic tales;

¹⁵ Suzukei, V. Yu (2006). The configuration of the development of the musical culture of Tuva: the dynamics of the actiological aspect. Kemerovo: Kemerovo State University of Culture and Arts, 27.

¹⁶ Suzukei, V. Yu (1993). Bourdon-overtone basis of traditional Tuvan instrumental music-making. *Kyzyl*. N p., 10.

¹⁷ Suzukei, V. Yu. (2007). *Musical Culture of Tuva in the XX Century*. Moscow: Publishing House "Composer". [Сузукей, В. Ю. Музыкальная культура Тувы в XX столетии. – Москва: Издательский Дом «Композитор», 2007.]

¹⁸ «Пение и вокально-техническая работа есть психически инициируемая и психически регулируемая деятельность человека, во время которой музыкальным инструментом певца становится его организм, по разному приспособляемый в различных видах певческой деятельности» Он же выдвигает идею о том что «во время пения таким инструментом становится организм певца, функциональное устройство которого может варьироваться в зависимости от вида певческой деятельности». Yushmanov, Viktor Ivanovich (2004). *Singing instrument and vocal technique of opera singers*. Abstract of the dissertation for the degree of Doctor of Arts, St. Petersburg, 2004. Unpubl. ms., 7.

- as a form of sound and mythological thinking;
- as a factor of cognition of one’s inner world;
- as a body instrument.

The vocal art of *khöömei* and of the musical instrument *igil* (*egil*) has a twin philosophical basis that has a connection with nature in the worldview of the Tuvan people¹⁹. This ancient art full of mystery invokes the spirit of the musician’s talent. After listening to *khöömei* with *igil* accompaniment (photo 3), the audience usually admits that in the listening process, they felt sound of the taiga, the steppe, or the mountains. The river sings, and even the noise of the mountains can be heard in it. In the names of *khöömei* styles, *khovu-kargyraazy* (steppe *kargyraa*), *dag-kargyraazy* (mountain *kargyraa*), and *khöömei* itself, we detect the power of taiga sounds. And in the melodies of the *igil*, we can hear the noise of the trees in the taiga when it is windy, birds singing, and horses galloping.



Figure 3: Igil player and *khöömei* singer Otkun Dostay in Tuvan landscape. May 2015. Photo by Mai-ool Choodu ordered by Choduraa Tumat.

¹⁹ An example of the connection between nature and *khöömei* was witnessed by Kleikamp during one of his travels in the 1990s as impresario accompanying Tuvan throat singers. In between concerts in North America in 1992, a sightseeing stop was made at the Niagara Falls. Upon hearing the impressive thundering sounds of the falls, the singers immediately started singing *khöömei*. Their reaction to the Falls was probably instinctive. (Kleikamp, Bernard. (2022). The First USA Performance of Tuvan Throat Singers. *Asian European Music Research Journal (AEMR)*, 9: 117.

V. Suzukei writes on the traditional music of the igil as part of the music culture and its worldview aspects (see Suzukei: 1989, 1993, 2007). The musical instrument igil is also connected with the mythical beliefs of the Tuvans. The origins of the instrument igil are reflected in many Tuvan legends. Every legend says that the instrument was passed down from the spirit of nature, the spirit of the horse. Tuvans played on the igil (egil) by imitating the voices of animals (camels, bulls, horses, birds). Another factor involved is that the sound of the igil (egil) is the closest to the human voice. Traditionally, it is always played in two voices (bourdon/drone and overtone).

CONCLUSIONS AND SOME METHODOLOGY

The study of the art of throat singing in relation with traditional beliefs and how this art is connected with nature through the prism of Tuvan worldview led to the research question of this essay²⁰.

Tuvan throat singing, as one of the types of traditional musical culture of the people, was its 'spirit', the core of the matter. With its uniqueness, the khöömei promoted the aspirations of people to study and preserve the musical culture as a whole. Through the consideration of the early forms of religious and mythological beliefs and their connections with the traditional musical culture, it is possible to decipher the traditional prohibitions. The tasks of this work are to study the spirituality of sound (the sound of nature and of the human voice – khöömei) in the worldview of nomadic people and to study the source of sound as a means of world perception of the Tuvans. It is also important to consider the transformation of the Tuvan worldviews in relation to sound in modern conditions.

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²⁰ The ethnomusicological research studies of Z. K. Kyrgys devoted to the fundamental question of throat-singing study in connection with different spheres of Tuvan traditional musical culture belong to the main sources in the coverage of this essay.

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LISTENING SOURCE

Tuva: Voices from the Centre of Asia CD. Liner notes by Eduard Alekseev, Zoya Kyrgys and Ted Levin. Smithsonian Folkways, 1990.

REMARKS

This essay is a reworked version of a presentation at the 24th Symposium of the ICTM Study Group on Musical Instruments in March 2023 in Colombo and is based on research that Choduraa Tumat initially started around 2020 for her PhD. In the presentation for the symposium, the workload was more evenly divided. Choduraa Tumat filled in the framework, and Bernard Kleikamp added examples. In this essay version, the emphasis is on Choduraa Tumat's research, so her textual input is crucial. Bernard Kleikamp restricted himself to adding some details, some language preparations of the submission, and bibliographical searches.

THE IDEALS OF NATURE IN GUQIN PERFORMANCE PRACTICE: THE 7-STRING CHINESE ZITHER

Hoh Chung Shih¹

Abstract

In this paper I will examine the interactions between 3 aspects of guqin music: its aesthetics, techniques, and the sonic-performance medium, which is the performance practice. For the first aspect, I shall explore the Chinese notion of nature - "道法自然", "the way following nature", as written in Chapter 25, 道德经, its manifestations in aesthetics - 溪山琴况 Xishan Qinkuang (1641) - with its 24 categories of aesthetic aspects, including interesting pairings of opposites, and how ideas from these texts might apply to re-creations (打谱) through the performance of several pieces (山居吟, 听泉吟, 良宵引) in 大还阁琴谱 Dahuange Qinpu (1673). Xishan Qinkuang and Dahuange Qinpu are specifically chosen for a closer study as they share the same authorship of 徐上瀛 Xu Shangying, an important late Ming qin master of the Yushan School (虞山派). Examples of acoustics properties of guqin in both silk and steel strings used nowadays, and various fingerings with considerations of possible rhythmic outcomes will be examined alongside descriptions of fingerings with gestural and kinaesthetic references to fauna and natural phenomena in 太古遗音 Taigu Yiyin (1511) as approaches to techniques, and the sonic-performance medium. Movement-sound-perceptive relations as often described in various literature will play an important role in this kind of workshop essay.

Keywords

Dapu (打谱), Dahuange qinpu (大还阁琴谱), Xu Shang Ying (徐上瀛), Xishan Qinkuang (溪山琴况), Performance Practice, Kinaesthetics

INTRODUCTION

This essay collates, and to some degree² summarises my experiences of learning the guqin, alongside my practice as a contemporary music

¹ Hoh Chung Shih is an independent researcher, who obtained his PhD at University at Buffalo, The State University of New York.

² Here, I shall set the preliminary context for discussing and analysing guqin music. Other aspects of guqin performance to be explored further include

composer. As a composer, I deal with issues of how music speaks, how music is made, how the requirements of performance engage the performer, and how music is received within acoustic settings. In a bi-cultural way, I explored the realms of Chinese thinking in music making, reconciling with my Western training and modern practices. The key questions I want to address in this paper are:

- What are the (musically) organising principles in a guqin work?
- What are the aesthetics informing the understanding, reception, and interpretation of a guqin work?

These questions will be addressed through a series of analyses of a selection of guqin works, examining the patterning of finger and hand movements, and how that corresponds with the patterning of pitch materials that resulted. Then, through studying the seminal guqin aesthetics treatise, *Xishan Qinkuang* (溪山琴况), I shall try to understand how the time aspect of guqin music is arrived at, in conjunction with the kinaesthetic, the psychosomatic, and the concept of *qi* (气) in performance.

In a way, looking at guqin music in this way is also the process of *dapu* (打谱³), a process of sounding the notated score through performance. So, in this essay I would also like to explore and establish systematically a way of analysing guqin music using both ways at once revealing their interactions in performance, creating musical⁴ meanings.

BASICS OF NOTATION AND MOVEMENTS

Below (Figure 2) is an example of *jianzi* (减字) notation used in guqin music. *Jianzi* is a composite character consisting of representative parts of different Chinese characters, which could be the top part, the right or left side, or just a stroke. And each location in this composite carries different information. The top part of the *jianzi* is to indicate instructions for the left hand, carrying with it symbolic parts of characters for

compositional styles and ideas from different historical periods that can be better understood through the approach I propose here.

³ Where possible, I will use simplified Chinese characters, unless quoting original texts in traditional script.

⁴ What is considered musical is also something to be discussed further in a dedicated essay. I hope that this essay sets the context for further discussion on this topic. Hoh Chung Shih (2021). *Guqin Playing Now: Re-inventing the Past as a Creative Way of Sustaining an Instrumental Practice*. *SIMP, Studia Instrumentorum Musicae Popularis, (New Series)*, 7. Edited by Gisa Jähnichen. Berlin: Logos, 21-34. DOI: 10.30819/5319.02

the left-hand finger, and the position along the string on which to apply the fingering. In summary, the finger to be used is indicated on the top left and the position on the top right. The fingering position indicated by numbers on the top right, also often with decimal notation, refers to hui positions marked along the qin (Figure 1). The lower half of the jianzi carries the instruction for the right hand for the fingering to pluck the string along with the string number to be plucked.

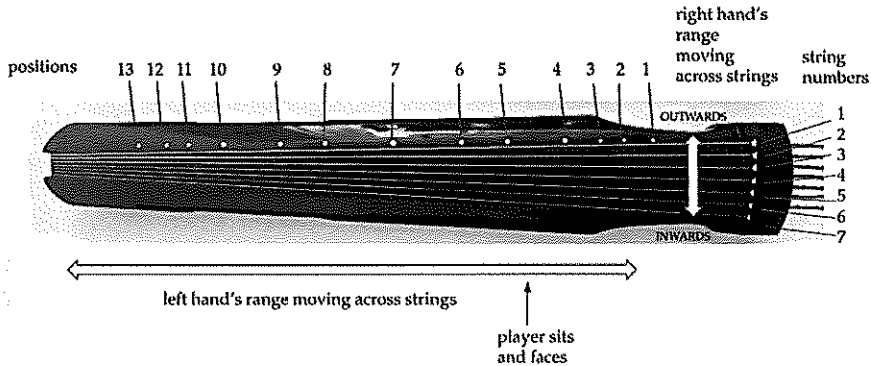


Figure 1: Scheme of a guqin. Layout by the author.

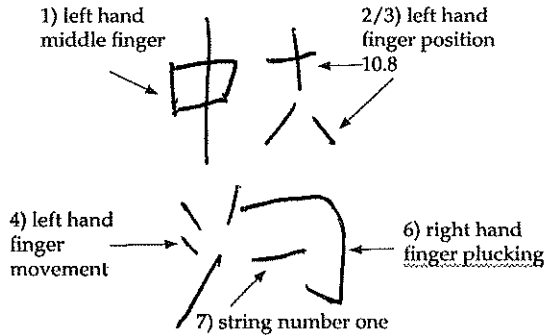


Figure 2: First explanation.

To illustrate, in the top part of the notation is indicated the left-hand middle finger (segment 1) be placed on the 10.8th position of the qin (see Chinese numbers indicated in segment 2 and 3 in Figure 2 respectively). This 10.8th position would be somewhere closer to the 11th position between the 10th and 11th position. The lower part of the jian zi indicates further that the middle finger is to slide down, as indicated by the three strokes (see segment 4), towards this 10.8th position on the first string (see segment 7). And the entire movement is to be sounded with gou technique (see segment 6), which is using the middle finger plucking inwards.

Physiologically, it is perhaps important to note that the right hand plucks the strings and therefore is the activator of sounds, and the left hand, if called for, stops the strings at various positions (hui positions) and depths (for example, depressed lightly for harmonics and fully depressed for stopped notes). The right hand moves in an inward (towards oneself) and outward (away from oneself) manner, while the left hand moves parallel to the strings along their lengths, as well as inwards or outwards relative to the performer from string to string. A key element in the left-hand motion is the transfer of weight from finger to finger when there is a change of fingering, or from string to string. When the same finger is used to move from string to string, some special techniques have to be mastered to achieve smooth transition of movement leading to smooth transition of sounds without breaks. One such technique would be the use of gaogu 高骨, the first joint of the thumb, when quick alternation between adjacent strings are called for. So, in learning the qin, there is great emphasis on how fingers and hands move from position to position indicated by notation, involving a sensitive awareness of weight transfer, hand angle position relative to the string/instrument, and speed-force balancing in the movement.

It is clear that jianzi notation and the learning of guqin really privileges movement over the usual pitch and duration aspect of music.⁵ And it is in this kinesthetic-sonic relation, that I hope to explore the process of music making with reference to source texts on guqin aesthetics.

Currently, guqin music is presented with Western notation, either staff or cipher, along with jianzi, with each character placed under the corresponding sound of the staff notation. Bar lines are employed, usually to indicate units of musical material smaller than the phrase, and so the apparent metre of the bar, even when time signature is employed, does not necessarily have the same metric connotation as understood in Western music. Hence, I read the bar as a container of a unit of musical content. And often the sonic content within a bar would be designed with a sequence of movement that is kinesthetically flowing.

My following approach will consist of musical-kinesthetic analysis and then relate the observable findings to aesthetics with reference to Ming

⁵ In my first essay on the topic, I posited that this emphasis on movement leading to music is related to the link between li 礼 (ritual) and yue 乐 (music) in ancient China. Hoh Chung Shih (2021). *Guqin Playing Now: Re-inventing the Past as a Creative Way of Sustaining an Instrumental Practice*. *SIMP, Studia Instrumentorum Musicae Popularis (New Series)*, 7. Edited by Gisa Jähnichen. Berlin: Logos, 21-34. DOI: 10.30819/5319.02

Dynasty's Xu Shang Ying's (徐上瀛), *Xi Shan Qin Kuang* (溪山琴况)⁶, an important text which consists of 24 aesthetic qualities. This text is significant in consolidating thinking behind guqin practices, inheriting important aesthetics models applied in the Sung and Tang dynasties. As Xu Shang Ying is also a founding and key figure of Yu Shan School, and as the school has significant standing and influence on qin playing, this work has become a central text in guqin practice.

ANALYSIS 1: PITCH-MOVEMENT CORRESPONDENCE, PHRASING, AND DEVELOPMENT OF MUSICAL IDEAS IN XIAN WENG CAO 仙翁操

$\frac{3}{4}$ 6 3 | $\frac{3}{4}$ 6 \nearrow 6 - | | $\frac{3}{4}$ 6 3 5 5 | 6 \nearrow 6 - |
 茫 勾 茫 韵。 茫 勾 韵 茫 韵。

Figure 3: Phrase 1⁷ → Figure 4: Phrase 2⁸

This work was at first conceived as a little study for tuning the qin⁹ employing open and stopped notes in corresponding pitches. It also employs right hand techniques of gou 勾 (middle finger plucking inwards) and tiao 挑 (index finger plucking outwards) with simple upwards and downwards slide. The work thus expresses the idea of he 和, harmony or union 合, both in sound and pitch, and in movement.

In the first phrase the right-hand patterning is tiao-gou-tiao-gou plucking the string number pairings of |7-5 |7-5|.

This patterning of fingering and string pairings becomes |7-5 6-4 | 7-4 | in the next 2 bars.

⁶ Can be found in Ji Zhiqun [纪志群] (2018). *Dahuangge Qinqu Quanyi* [大还阁琴谱全译], Beijing: Wenhua Yishu Chanbanshe [文化艺术出版社], 365-370; original text from late Ming, early Qing period, ca 1644, 1673.

⁷ Note the phrase ending is indicated with the Chinese period sign [。]

⁸ Note missing $\frac{3}{4}$ -time signature in the second measure of this example.

⁹ Shen Caonong [沈草农], Zha Fuxi [查阜西], Zhang Ziqian [张子谦] (1961). *Guqin Chujie* [古琴初阶] Yinyue Chubanshe [音乐出版社]. Original composer is Yang Biao Zheng [杨表正] (ca. 1520-1590).

	Bar 1		Bar 2		Bar 3				Bar 4	
String	7	5	7	5	7	5	6	4	7	4
R finger	tiao	gou	tiao	gou	tiao	gou	tiao	gou	tiao	gou
R hand	out	in	out	in	out	in	out	in	out	in
L finger/ position	open	open	open	ring /10	open	open	open	ring /10	open	thumb /9
pitch	6	3	6	6	6	3	5	5	6	6
timbre	open	open	open	stop- ped	open	open	open	stop- ped	open	stop- ped

Figure 5: showing hand-finger patterning in bars 1-4. Scheme by the author.

Noting the 3 planes of movement: 1) Right hand in, moving towards player, and out away from player; 2) Left hand moving left to higher position number and right to lower position; 3) Right hand-left hand pairings and sequencing; movement configuration becomes simple and clear enough to appreciate how the physical patterning resonates with the melodic and timbral one. This can be seen in the score of Figure 6 as the following measures in this passage follow this pattern of string sequence set up in b1-4, down to string 1, in b. 10. See video ¹⁰ for a performance of this passage.

1-F

$\frac{2}{4}$ 6 3 | $\frac{2}{4}$ 6 \nearrow 6 - | $\frac{2}{4}$ 6 3 5 5 | 6 \nearrow 6 - | $\frac{2}{4}$ 5 2 3 3 |

芭 旬 芭 箭。 芭 旬 芭 箭。 芭 旬 芭 箭。

仙 箭。 仙 箭。 得 道 陈 特 仙 箭。 得 道 陈 特

$\frac{2}{4}$ 5 \nearrow 5 - | $\frac{2}{4}$ 3 1 2 2 | $\frac{2}{4}$ 3 \nearrow 3 - | $\frac{2}{4}$ 2 6 1 1 | $\frac{2}{4}$ 2 \nearrow 2 - |

芭 箭。 芭 旬 芭 箭。 芭 箭。 芭 旬 芭 箭。

仙 箭。 得 道 陈 特 仙 箭。 得 道 陈 特 仙 箭。

¹⁰ Hoh Chung Shih (2023). Video 1. Available at https://www.academia.edu/107505062/Guqin_Video_examples?source=swp_share, last accessed 3 October, 2023

Opening: |7-5|7-5|
Model: |7-5 6-4| 7-4|
Sequence: |6-4 5-3| 6-3|
Sequence: |5-3 4-2| 5-2|
Sequence: |4-2 3-1| 4-1|

Figure 6: Example of string pairing patterns by bars.

AESTHETICS 1: HARMONY 和 AND UNION 合

In Xian Weng Cao, an elementary work, one can find several key guqin musical features: using the ideas of 和 (harmony) and 合 (union), one can see how such ideals are expressed in the design of fingerings, hand movement, resulting also in corresponding melodic pitch patterning.

How does one determine the durational and expressive attributes from a guqin score? How does the movement-focused notation along with its particular aesthetics condition the player to arrive at an interpretation or *dapu*?

One important aspect of guqin music is the nature of 和 (he) or harmony. And, in my last paper, I also pointed out that in classic texts, the role of music is 'harmony'. In the aesthetics treatise, *Xi Shan Qin Kuang* 溪山琴况 (XSQK), the first quality mentioned is that of he, and it is also the central and unifying one for all the 24 qualities.

In the he 和, quality of harmony in XSQK, Xu Shangyin, the author wrote:

吾复求其和者三，¹¹⁾ 曰弦与指合¹²⁾，2) 指与音合，3) 音与意合，而和至矣。

There are three ways I look for harmony, 1) the strings and fingers are in union, 2) the fingers are in union with the sound, 3) the sound is in union with the meaning/intention, and so harmony is perfected.¹³⁾

¹¹⁾ The numbers were added by me.

¹²⁾ Here, there is a pun on the word he.

¹³⁾ Translation by me. Note here, 和 and 合 both sounding the same, has significant differences. The former being the title of this quality in the XSQK, refers to the harmony of the different elements, such as fingers, strings, sounds, and meaning/intention, whereas the latter refers to the union of elements becoming one, a nod to the non-dual concept in Buddhism. I would like to thank my friends and colleagues, Khoo Kiak Ern, and Sun

These 3 categories of unions will prove to be crucial in our discussion of *dapu*, from which the durational or time aspect of sounds can be derived.

With regards to 1) the strings and fingers being in union, and 2) the fingers being in union with the sound, Xu, the author, explained in various ways, through many qualities within the 24, how one should apply the fingers on the strings leading to the ideal sounds, or sonic and psychosomatic results. This, in turn, will have to be considered in conjunction with 3) the sound is in union with the meaning/intention, to throw light on how *dapu* works in practice.

In Xian Weng Cao, as mentioned above, the musical intention is for harmonious tuning, the corresponding same pitches in each phrase has a pairing of open and stopped timbres, and using different strings and fingers. Metrically, the pairing gives rise to a duple time (2/4) configuration, and at phrase endings, an additional beat is added to give finality of the phrase resulting in triple time (3/4).

If this duple grouping, with its different string-finger-timbre pairing having the same pitch, corresponds to the dualistic nature or opposing qualities of Chinese thinking as in yin-yang, which has to be 'harmonised' 和 or 'balanced' 中和 or 'united' 合, the triple time can be seen not just as an extended duple with the aim for durational finality in a phrase ending, but also as music arriving at union transcending duality. Thus, it is with the concept of union (合), that one sees a deeper dimension of Chinese thinking¹⁴: that of non-dualism (不二), that of dependent arising (缘起), that of returning to tao (归根-道), balancing the extremes (中和, 中庸).

Ping Yu, both trained in Chinese language studies, who helped me with the etymology of both words.

¹⁴ Chinese thinking traditionally includes the 'Three Teachings' 三教 of Daoism, Confucianism, and Buddhism, as over the long history, the three schools of thought have intermingled in various ways leading to differences in the understanding of how much the three schools of thought overlapped and integrated. For some references, see Paracka, D. J. (2012). China's Three Teachings and the Relationship of Heaven, Earth and Humanity. *Worldviews*, 16(1), 73–98. Brook, Timothy (1993). Rethinking Syncretism: The Unity of the Three Teachings and their Joint Worship in Late-Imperial China. *Journal of Chinese Religions*, 21(1): 13-44, DOI: 10.1179/073776993805307448; Qing Xuqi [清徐祺] (2020). *Wūzhǐ zhāi qín pǔ* [五指斋琴谱], 8. Hangzhou: Xiling Yinshe, [西泠印社], 1-9.

I will explain further the durational/rhythmic expression of the movement as a result of such a union to be experienced physiologically and then manifested sonically, especially in the aspect of time or duration, as this is one significant aspect of sound or performance not explicitly present in the guqin jianzi notation.

ANALYSIS 2: PROSODY OF NOTATION-TEXT, PHRASING, AND EXPRESSIVE RHYTHM IN 双鹤听泉 SHUANG HE TING QUAN

	Jianzi	R finger/hand	L finger/hand	Sound	Pitch
phrase 1	I	tiao / out	open string		D
	II	gou / in	T / 9		D
	X	dayuan / alternating in-out	alternating above	rhythmic articulation	D
	III	tiao / out	open string		D
phrase 2	I	tiao / out	open string		A
	II	gou / in	R / 10.8		A
	X	yin /	R undulating	pitch articulation	A
	III	tiao / out	open string		A

Figure 7: Table of movement patterns.

One can read the notation-text¹⁵ like a poetic text.¹⁶ In this work's opening phrases, there are 3 main jianzi (I, II, III) and an 'ornament'¹⁷ between jianzi II and III. See table in figure 7. In the first phrase it is a

¹⁵ Xu Qingshan [徐青山] (also known as Xu Shangyin) (2020) *Dahuangge Qipu* [大还阁琴谱]. Hangzhou: Xiling Yinshe Chubanshe [西泠印社出版社], 3 and 38.

¹⁶ The literary quality in guqin notation including using the textual punctuation for phrases also suggests its connections to prosody in literary texts. Both the music unit and phrasing in guqin music are fascinating topics to explore more fully in a separate paper to understand better its phraseology as musical content.

¹⁷ I call it an 'ornament' in a conventional sense, but it is an integral part of the sound to be executed, hence not optional, as may be the case usually with ornaments. One may note that the jianzi is indented in the layout and of a smaller font size, it does not suggest a lower hierarchy in importance,

rhythmic and tone colour articulation called *dayuan* 打圆, and in the second phrase it is a pitch articulation called *yin* 吟; akin to a vibrato.

Looking at the first 2 phrases in conjunction with the movement-pitch analysis above, one notes that the opening motif on D with rhythmic articulation is being echoed in the second phrase by the motif on A with pitch articulation. In this way, the main pitch centres of D and A for section 1 are established.

Looking through the whole of the first section, one can see how these 2 pitch centres are articulated each time either with pitch or rhythmic articulation.

This staff notation is a transcription of a performance my teacher arrived at through *dapu*.¹⁸ A video can be seen here¹⁹, for a performance of this passage²⁰.

Figure 8 shows four staves of musical notation in 3/4 time. The notation includes various rhythmic and pitch articulations. The first staff starts with a fermata over a note, followed by eighth and sixteenth notes. The second staff features a prominent pitch articulation (vibrato) over a note. The third and fourth staves continue with rhythmic patterns. Below each staff is a line of Chinese characters representing the notation. Several notes in the first and second staves are circled in red, highlighting the main pitch centres A and D.

Figure 8: Example with all pitch and rhythmic articulations on the main pitch centres A and D circled.

but as an extended instruction to the main *jianzi* that precedes it. This is a common notational practice and such extension can sometimes be quite extensive and melodic rather than mere articulations of the given sound, as is the case here.

¹⁸ Ji Zhiqun [纪志群] (2018). *Dahuangge Qinpu Quanyi* [大还阁琴谱全译], Beijing: Werhwa Yishu Chanbanshe [文化艺术出版社], 80.

¹⁹ Hoh Chung Shih (2023). Video 2. Available at https://www.academia.edu/107505062/Guqin_Video_examples?source=swp_share.

²⁰ I am playing as I have learnt from my teacher, Ji Zhiqun. The difference in time in the performance as compared to the notation will be discussed.

We need to examine further how he may have arrived at the durational aspect of the music through the *dapu* process. Before proceeding, I need to also emphasise that the *dapu* process is an ongoing one, meaning the notated score is often a dictation of a performance at a given time, and later performances may deviate from the Western notated rhythm or tempo.²¹

In another video, the second tone of the second phrase has been elongated in performance, differing from the Western notated score. The reason I speculate is to balance or 'rhyme' with the corresponding ornament in the first phrase, as suggested by the *jianzi* notation, if we were to read it like a literary text, as illustrated in the second table (Figure 7).

In addition to prosodic reading of *jianzi* notation, here are some more obvious, and therefore, physically natural rhythms that inform the *dapu* process.

COMPOSITE FINGERING AS KINAESTHETICALLY SUGGESTIVE RHYTHMS, AND ITS USAGE AS GESTURAL MOTIVE

- a) *Dayuan* 打圓²² usually is executed with a short-short-long-long rhythm using the preceding 2 tones. In this case, my teacher sped up the usual short tones to generate the drive towards the responding second phrase. See bar 2/*i*²³.
- b) In bar 4/*i*, the notated grace notes are derived from *li* 历²⁴ across strings 3 and 2 ending on F with a *gou* 勾 in the first string. So, the *li-li-gou* (pitches F-D-F) gesture becomes one kinaesthetic gestural unit on its own. Note

²¹ I am playing as I have learnt from my teacher, Ji Zhiqun 纪志群. The difference in time in the performance as compared to the notation will be discussed.

²² *Dayuan* 打圓 is a composite fingering, traditionally extending the preceding 2 sounds/pitches by rhythmically articulating them through repeating twice; once faster, once slower.

²³ 2/*i* indicates bar 2 beat 1 (everything refers to the notation in Figure 8).

²⁴ *Li* 历 is a right-hand technique of plucking the string with the back of the index fingernail moving outwards. If there is a succession of a few *li* across neighbouring strings, usually written in *jianzi* with the string numbers stacked on top of one another as in these 3 examples, it does suggest playing them through like a harp glissando.

quickenings involving 8th note motion in bar 3? (Compare b1/ii-iii and b3/ii) Is it just an act of creativity on the guqin performer doing the dapu?

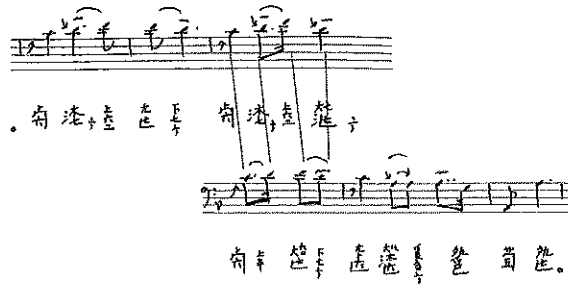


Figure 10: Example extracted from line 3 bar 4 to line 4 bar 3, in the first half of the work, to show motivic relationships and development within a phrase.

- b) The music continues, as shown above, and we can see the quickened motion of more 8th note motion towards the end of phrase.

In the next example (Figure 11), I shall share a personal experience grappling with the notated movement leading to rhythmic adaptations in performance.



Figure 11: Second half of the work, beginning. T: tiao 挑; M: mo 抹; G: gou 勾.

Figure 11 shows my teacher's dapu of the second half of the work. In the first bar, I have struggled with understanding why the movement starts with a tiao 挑 (index finger plucking outwards) on the 7th string as if suggesting a movement out towards the 6th string. What follows, is instead, a series of plucking on the 7th string continuing all the way into the second bar. More commonly found in guqin movement in situations like this would be to start with 抹 (index finger plucking inwards) followed by tiao 挑. An example of this is found in bar 2 of this example, where mo and tiao are notated into one single composite

character (similar to the gou-ti gestural unit mentioned earlier). So, this sequence of tiao followed by mo on the same string suggests a longer duration of tiao note as the hand has to reposition back to 7th string for mo²⁵. Hence, in the notated dapu score, the tiao note is an 8th note followed by a 16th note for the mo.

In addition, considering that the end of the first half is done with a tiao, starting the second half with a tiao again on the same string perhaps suggests a pause between the two tiao²⁶, as kinesthetic dictates a physical retake of tiao fingering.

The second notated movement that concerns me is the yin 吟 in the second notated 16th note, D in the first bar. As yin usually takes some time to execute and sound, it would seem rushed to realise the yin in a 16th note duration.

So, how I have been playing it is to sometimes follow closely to the staff notation as representing my teacher's dapu or performance, thus leading to a quicker yin than what I would have liked, and sometimes changing the duration of the third note to a longer duration, to give the yin time to 'breathe'.

Indeed, in my teacher's recording²⁷, he stretched the pulse, at this point, to accommodate all that. This is a clear case of how dapu is an ongoing process where a Western notated dictation of a performance may not correspond with a later performance, as further insights are gained through further kinesthetic and musical experiences.

In fact, if we analyse the right-hand motion of the first bars of 2 specific lines, we can see their relatedness in rhythm, melodic contour and fingering movement. Note how gou-ti 勾踢 (line 2 beat 1) appears as a variation of earlier tiao-mo 挑抹 (line 1 beat 1) and, probably because of kinaesthetic reason mentioned above, the rhythmic interpretation is

²⁵ Traditionally, mo 抹, then tiao 挑, is the common pairing in sequence, rather than tiao followed by mo. Kinaesthetically, it seems mo-tiao requiring the closing and then the opening of the palm is more 'natural' in execution than the other way around. More on this needs to be explored, along with its gestural/rhythmic, and hence musical implications.

²⁶ Akin to the repeated gou 勾 in Figure 8.

²⁷ Ji Zhiqun [纪志群] (2018). *Dahuang Qinpu Quanyi* [大还阁琴谱全译], Beijing: Wenhua Yishu Chanbanshe [文化艺术出版社], 80. On this page one can find a URL as a QR code leading to that recording.

slightly different. Gou-ti seems to be the kinaesthetic equivalent of mo-tiao, albeit with the middle finger (compare to footnote 25).

With these particular considerations, I wonder if such subtle deviations from the norm in movement design in a guqin work, suggest allowances for corresponding deviations from what would ideally be a constant beat in articulating a melody.

Musically speaking, also, does having the yin, which serves to highlight the key note of D in the middle of a bar (see figure 11, bar 1, second half beat, indicated with the wavy line), and on a weak part of the beat as shown in the staff notation, suggests a deviation from the norm? Or is this a very subtle way of destabilising the D as pitch centre, as we move into this second half of the work where F will progressively become more important, finally displacing D as the new pitch centre? If so, then it seems for guqin music, although rhythm is not explicitly notated, these subtle variations in finger/hand movement design can lead to shifts within the context of pulse, suggesting subtle and nuanced changes in the hierarchy of pitch structure, within a work. This to me, as a Western trained composer, is a composition technique as sophisticated as the harmonic and tonal ambiguities in the Common Practice Period.

ANALYSIS 3: RHYTHM AND PULSE IN 良宵引 LIANG XIAO YIN

-段

色 竹 笛 自 王 楚, 琴 色 楚 笛 四 匀 四 匀 正 楚, 奏 楚 十 空

楚 楚 楚 十 楚, 楚 楚 楚 楚 楚, 楚 楚 楚 楚 楚

Figure 12: Example 9²⁸

²⁸ Ji Zhiqun [纪志群] (2018). *Dahuange Qinpu Quanyi* [大还阁琴谱全译], Beijing: Wenhua Yishu Chanbanshe [文化艺术出版社], 168.

To further explore the time/duration aspect of performing a movement-based notation, I shall look at another work *Liang Xiao Yin*.

Looking at example 9 in Figure 12, I have marked 2 corresponding phrases with letters A-F comparing the main pitch/position movements of each phrase. If we compare both B and C locations in the music for both phrases, we noticed the second phrase lengthened pitch-position B and shortened position C. This seems to be prompted by the addition of the word, *ji* 急, (see double asterisk) which means, 'quickly' or 'hurried', informing how one should move up to position 6.2 on the same string. It is interesting to note that the quickness is created by lengthening the note before and shortening the note marked *ji*, thereby still preserving the same pulse duration at the completion of movement. Also, do note that the effect of this 'quickness', characterising or differentiating this phrase from the previous one, results as well in the shortening of pitch-position E. This shortening is prompted by the omission of *yin* in the second phrase (see asterisk). As a result, the duration of location F is adjusted to fit the pulse.²⁹

Another interesting thing to note here is the interpretation of technique in the opening of each phrase at location A. The first phrase has *beisuo* 背锁, which usually would sound like the second phrase opening *lunzi* 轮指: three quick notes in succession usually interpreted as a kind of triplet to fill the pulse/beat. But here, the *beisuo* has been interpreted as *ti* 踢 (quarter note), then *mo-tiao* 抹挑 (grace note - quarter note). In looking at a related version of this work in *Songxianguan Qinpu* (SXGQP) 松弦馆琴谱³⁰ (1614), indeed the same location is articulated with *ti* then *mo-tiao* as 2 separately indicated movements rather than as a single *beisuo* movement. While my teacher's *dapu* can be understood as a nod to the tradition, it can also be understood as a response

²⁹ Another interesting example, on how pulse and tempo interact, is found by comparing in the example shown in Figure 10, line 1, bar 4, and line 2 bar 1. The segments are variants of one another occupying the same 2 beat duration. Note how the second version in the later bar is modified rhythmically to fit within the beat: in the first beat of the later bar, the F to G melodic movement is achieved with shorter note values of 16th notes due to the composite fingering of *gou-ti* 勾踢, while the quicker 8ths movement from A-C in the second beat is suggested by the word *jiyin* 急吟 (quick vibrato) in the second version.

³⁰ *Songxianguan Qinpu* 松弦馆琴谱 is a predecessor of *Dahuange Qinpu* 大还阁琴谱, belonging to the same school, Yushan School 虞山琴派. Yan Cheng [严澄] (2016). *Songxianguan Qinpu* [松弦馆琴谱] *Zhongguo Shudian* [中国书店]. 2: 6.

to the second phrase, where there is not only lunzi but also zhuang 撞 following and extending it. So, by 'slowing' down beisuo by splitting them up, it balances the corresponding openings of both phrases.

While balancing both phrases is important, through modifying rhythms within the pulse stream, the contrasting character of each phrase must also be brought out. In this example, the second phrase has the character of quickness and alertness (perhaps more yang or active) as it has modifiers and techniques like ji and zhuang, and the omission of yin, in contrast with the first phrase, which is more leisurely, and perhaps, yin 阴 or feminine in character. So, this balancing of opposites (和) resulting in a dependently arisen³¹ flow is perhaps what union (合) is about.

AESTHETICS 2: BALANCE AND DEPENDENT ARISING

It is interesting that XSQK 溪山琴况, includes a string of opposite qualities.³² While balance is about finding the harmony between opposite qualities; dependent arising is about a union resulting from coming together of opposite qualities. Here below are some quotes from the text on how opposites interact:

For example, in speaking about heaviness and lightness, quickness and slowness is also invoked.

指法有重则有轻，如天地之有阴阳也；有迟则有速，如四时之有寒暑也。盖迟为速之纲，速为迟之纪，当相间错而不离。

In applying finger (on strings), (if) there is heaviness, then there is lightness; like between heaven and earth there is yin and yang. (If) there is slowness, there will be speediness, like in the four seasons there is cold and heat. Slowness is the reference for speediness, and vice

³¹ Dependent arising or dependent origination is a key element in Buddhist thinking.

³² for example, yuan (圆) literally round, referring to eloquence of action complements jian (坚), literally strong, referring to forcefulness of action; hong (宏) literally broad, complements xi (细) literally fine; liu (溜) literally slippery, fluid, complements jian (健) literally strong, direct; qing (轻) literally light, complements zhong (重) literally heavy; chi (迟) literally means delay and complements su (速) quickness.

versa. They should be interspersed (interconnected), and not be separated.

In this short passage, one sees an understanding in how opposites exist in meaning and function to one another in a holistic relationship; they can be said to be mutually dependent in arising. In the Confucian thinking of zhonghe 中和, he 和 is about balancing the diverse or opposite elements, zhong 中 is about maintaining a holistic view of the entire field of possibilities.

不轻不重者，中和之音也。起调当以中和为主，而轻重特损益之，其趣自生也。

Neither light nor heavy, zhonghe sound is achieved. One should begin playing with zhonghe as a guiding principle, the play (interplay) arises with the light and strong inter-acting (harmoniously).

APPRECIATING HARMONY AND UNION IN 修禊吟 XIUXIYIN

一段



1 竹三 笛勾 笙者 卡 簾 荷 筇。2 笛四 箫，竹 笙。3 笛勾 笛。



4 笛勾者 竹 簾 箫，卡 笙。5 箫笛 笙 笛 箫 笛。



6 笛勾 笙，笛 立 笛 箫 箫 笛 箫。7 箫，竹 箫 笙 箫，笙 笛



笛勾 笛。8 箫，竹 簾 箫，卡 笙。5 笛 笙 箫 笙。

二段

Figure 12: Example 10³³: 修禊吟 Xiuxiyin, section 1, with phrases 1-8 marked by numbers. Note phrase endings are all marked with the Chinese period sign ‘.’

The piece opens leisurely with all open strings, skipping from low 1st through 3rd (b.1) up to high 6th string, and then back to 3rd string (b.2). Note all strings are left to ring due to the right-hand fingering assigned, and with this introduction with open strings timbre, the left hand comes in in b.3 with stopped tone timbre. In this way, the balance between open string resonant tones and the stopped tones relatively muted tones is brought into relief.

Along with the change of timbre in b.3, the instruction, shaoxi 少息 in b.3/ii asking for a short pause, resulting in a syncopated rhythmic continuation, articulated by a yin (see wavy line). So, the ‘rest’ with shaoxi, with the sustained sound fading, is balanced by yin 吟 reviving the sound. Yin also brings out the last note by reactivating the string.³⁴ So, this second half of the phrase (b.3 - 4/ii), with its stopped notes, also balances the first timbrally, with its open strings, by having an off-beat syncopated rhythm, contrasting with the clear beat rhythm of the first (b.1 - 2).

Phrase 2 (b.4/iii - 6) begins fast with short notes responding to the right hand li 历 technique across adjacent strings (b4/iii), and it is balanced by the longer notes in the next bar articulated with yin 吟 (b.5i-ii), allowing time to appreciate the sympathetic vibration when the 6th string is plucked (b.5/iii-iv).

While phrase 2 starts off fast, contrasting with the leisurely opening of phrase 1, phrase 3 (b.6) balances the relatively longer duration of phrase 2 by being brief and short.

While phrase 4 (line 1, b1 - 4) employs a short delay with the instruction, shaoxi 少息 (line 2, b.1/ii), it differs in effect from that used in the

³³ Ji Zhiqun [纪志群] (2018). *Dahuange Qinpu Quanyi* [大还阁琴谱全译], Beijing: Wenhua Yishu Chanbanshe [文化艺术出版社], 76; Hoh Chung Hoh Chung Shih (2023). Video 3. Available at https://www.academia.edu/107505062/Guqin_Video_examples?source=swp_share, last accessed 3 October, 2023.

³⁴ It must be pointed out that the acoustical property of the silk string with its texture, due to silk windings, allow pitch vibrations to be revived when fingers rub or slide across. Hoh Chung Shih (2023). Video 4. Available at https://www.academia.edu/107505062/Guqin_Video_examples?source=swp_share, last accessed 3 October, 2023.

second half of phrase 1 (line 1, b.3/i-ii). Here, shaoxi simply gives the phrase a more leisurely feel; an yin on the last note of the bar (line 2 b.1) further draws out this quality for the beginning of the phrase. The phrase in total has a tempo profile of slow, fast, slow ending with an extensive yin (line 2 b.3) leading to the concluding note of the phrase.

Phrase 5 is interesting in that it moves dramatically into the middle region of the qin (7th position, being the midpoint of the qin string) with a series of upward (left to right) movement of the left hand. This movement in itself is a prominent motif here: first it is an upward slide (line 2 b.5/i), then it is a (melodic) up-down-up 绰退复 movement (line 2 b.5/ii-iii). Finally, it becomes a jinao 急猱 (fast wide vibrato) (line 2 b.6/i-ii). Melodically this jinao also became the high point of this phrase. So, the series of up-down-up³⁵ movements are designed to lead to this climax of the phrase.

Phrase 6 is a movement contrast between nao 猱 (line 3 b.1/iii) and zhuang 撞 (line 3 b.2/ii). It is however generally slower or more relaxed thus balancing the dramatic rise and fall and change of location on the qin in phrase 5. We can see how phrase 5 with its prominent left hand up-down movement leading to jinao, a fast type of nao (vibrato), now continues to develop into zhuang in phrase 6, a more forceful and quicker up-down movement³⁶.

Phrase 7 balances the preceding 2 phrases, which have large movements on each string as well as across strings, by reintroducing yin 吟 (vibrato, hence smaller movement) and basically moving along the same string 3 before ending on string 4. Note also in this phrase the location of action has returned progressively back to opening lower positions of 10, via 7.9 and 9, and 10.8 (as opposed to the higher positions around 7 in the preceding phrases).

And then in phrase 8, the last phrase of section 1 of this work, we see the location descends further to beyond the 13th position, recalling phrase 4 earlier in this section 1 of the work.

So, from this kinaesthetic-melodic analysis, we do see how contrast and balance are achieved through dramatic rise and fall not only in the

³⁵ Up-down-up movement describes the melodic contouring, as is also indicated literally as such by the jianzi, which corresponds in performance to a right-left-right directional movement of the left hand.

³⁶ Zhuang 撞 literally means 'collision'.

melodic-pitch profile of the music, but also in its movement and location on the qin, starting at around position 10 (b.3), going lower to beyond the 13th (phrase 4), and then dramatically rising to the 7th in phrases 5 and 6 before descending progressively across phrase 7 along string 3 down to position 10.8, and then to the 10th position on string 2. It is also interesting to note that in b.3, we see the foreshadowing of this dramatic movement to come with the left-hand movement along string 7 through positions 10, 9, and up to 7.6.

Phrase	Sonic-Movement Character	Location
1	Open vs Stopped note timbre Relaxed clear beat rhythm vs Syncopated rhythm	Across 1-6 strings; And then starting at 10th position, 7th string going up to 7.6 position.
2	Fast - Slow	Going down to 10th then up to 9th
3	Fast	Open and 10th
4	Slow - Fast - Slow	From 10 again going up to 7.6, then descend to beyond 13th.
5	Slow, but dramatic with large movement	Glide up to 7, and going across strings 1 to 5.
6	Nao develops into zhuang; note also the use of noise in yan: hushed but dramatic	Around 7 but extending to 6.5
7	Slow - Fast - Slow Quicker and smaller movement of yin, contrasting with larger swoops of nao in preceding phrases.	Descending to 10 via 7.9, and 9, dropping to 10.8 and back, along string 3 then settling on 2 and 4.
8	Slow - Fast - Slow Like a recapitulation of open phrases of this section.	Combining movements of phrases 1, 2 and 3, finally descending to string 1, beyond 13th position, and back to open string 3, the focus pitch , F, of phrase 1. See how Section 1 presents a tussle between pitch F and G, in alternate phrases.

Figure 13: Table as described in the text.

Just as with the previous work, where key pitch centres are emphasised with ornaments, here too, pitches D and A are emphasised with yin and nao against the backdrop of what seems like a pitch centre of F. I am proposing, when delving into guqin music, further study of the use of modes in structuring would add another layer of meaning to this matrix of movement-pitch analysis. See summary of the movement in Figure 13.

To conclude, I would like to share how guqin performance is understood traditionally.³⁷

ON QIN PLAYING

古人以琴能涵養情性，為其有太和之氣，故名其聲曰“希聲”。³⁸

The Ancient feels that Qin can regulate emotions, because it possesses the qi of Great Harmony, and so the name of the sound of Qin as Xi Sheng 希聲³⁹ (Sound that transcends sound, therefore not heard⁴⁰)

We have seen in the analyses above how qin playing is kinaesthetically driven with much movement design thinking informing the expression and meaning of the music. It is also important to note that the playing of qin involves the left-hand fingers directly pressing down the strings onto the resonating body itself; there is no fingerboard like in most string instruments that allows for separation between the fingers and the resonating body so as not to dampen the resonance. Thus, the guqin performer has a direct feel of the vibration of the sounds through the resonating body. Through computerised tomography (CT) scans of antique qins, housed in the Beijing Palace Museums⁴¹, as well

³⁷ Traditionally means mainly understood by those who play guqin in a way as it was known prior to the last century.

³⁸ Ji Zhiqun [纪志群] (2018). *Dahuange Qipu Quanyi* [大还阁琴谱全译], Beijing: Wenhua Yishu Chanbanshe [文化艺术出版社], 370.

³⁹ Sturgeon, D. (n.d.). *道德经 - 中国哲学书电子化计划*. Chinese Text Project. Retrieved April 27, 2023, from <https://ctext.org/dao-de-jing/zhs>. Ch.41.

⁴⁰ Here I would suggest that the ideals of guqin playing, is this union of sonic, kinaesthetic, as well as haptic, as the tactile quality of sound in its vibrations, and the movement of fingers on strings, especially in the textured silk strings, is part of the enjoyment and expression of the music.

⁴¹ Guqin in the collection of the Palace Museum / edited by the Palace Museum. Beijing : Zi jin cheng chu ban she, [北京 : 紫禁城出版社] 2010.

as contemporary guqin makers' descriptions of their making of the instrument, we know that there are undulating interior walls along the length and breadth of the guqin creating various acoustic cavities. When the performer's fingers slide through different locations of the qin, there are also various nuanced changes in vibrations that can be felt. More can be studied with regards to tactile feel in guqin performance, and perhaps as an element of Xi Sheng 希聲, in addition to the kinaesthetic as well as the breadth as generally understood, or more specifically, qi 氣.

BEGINNING OF SOUND AND PERFORMANCE

未按弦時，當先肅其氣，澄其心，緩其度，遠其神，從萬籟俱寂中冷然音生。疏如寥廓，宥若太古，優游弦上，節其氣候，候至而下，經葉厥律者，此希聲之始作也；

Before laying hands on the qin, first attend to the qi 氣, clear the mind 心, relax the heart 度, expand the gaze 神, and from the deep silence, the sound 音 clearly arise.

Like the expanse of space, from time immemorial, (with fingers) moving at ease on the strings, flowing and executing according to the breadth (氣後), harmonious with the mode, this is how xisheng (transcendental music) 希聲 begins.

MUSICAL DEVELOPMENTS

或章句舒徐，或緩急相間，或斷而復續，或幽而致遠，因候制宜，調古聲淡，漸入淵原，而心志悠然不已者，此希聲之引伸也；

Sometimes phrases 章句 extend out leisurely; sometimes fast and slow intermingle; sometimes they truncate, and then resume; sometimes they are serene and lofty, timely and harmonious, Ancient and understated, progressively approaching the Source (of inspiration). Spirit freely roaming, this is Xi Sheng 希聲 extending out.

UNION OF MUSICIAN AND MUSIC

復探其遲之趣，乃若山靜秋鳴，月高林表，松風遠拂，石澗流寒，而日不知晡，夕不覺曙者，此希聲之寓境也。

Slowness is like the sound of Autumn in a quiet mountain, the bright moon on top of the forest, the wind blowing through pines from afar, the cold spring flowing through stony brook, the day not knowing

night, and the night not knowing daybreak. This is the (highest) state of xisheng 希聲.

One can see, how traditionally the Chinese guqin player relates to oneself as part of nature. One's body-mind is a microcosm of the larger cosmos, and, therefore, relating to nature outside (seasons, mountain, moon, forest, wind, water, day, night) is analogous to understanding and expressing the nature within (qi, heart, mind, gaze). Music arose through this process of communion between the guqin player and the cosmos.

BEING ONE WITH NATURE

To further illustrate this relationship between guqin player and nature relating back to the kinaesthetic aspect we saw in the fingering techniques earlier, I will cite from the Sung Dynasty book, Taigu Yiyin 太古遺音⁴².

Here, we have a corresponding picture of a natural observable phenomenon that accompanies a fingering action in guqin playing. In the preface, the author wrote:

古人因聲音而譜字。以手勢而象物。⁴³

Ancients inscribe with words (jianzi 減字) according to sounds (to be made). (And design) fingerings in accord with (natural) phenomena.

In describing the left-hand movement of Yin 引⁴⁴: 'leading to', the movement of the left hand up and down (left and right) along the strings of the qin is compared with the movement of a cicada, whizzing by leaving traces of sound.

In describing the action of the left hand lightly touching the strings to produce harmonics, fan 泛, it is compared to how fleeting the motion of a butterfly is flying from flower to flower.

⁴² Tian Zhiweng [(宋) 田芝翁著], (2020). Taiguyiyin (Ming coloured copy [太古遺音 (明 精鈔彩繪本)]. Edited by Guqin Wenxian Yanjiushi [古琴文獻研究室編]. Hangzhou: Xiling Yinshe Chubanshe [西泠印社出版社]

⁴³ Ibidem 66.

⁴⁴ Ibidem, 130-131.

A type of flowing vibrato 遊吟⁴⁵ is compared to how fallen flowers float around in the river, following its eddying currents.

The technique of using the thumb to hit the string to produce a sound, 罨 yan⁴⁶, is compared to the echo in a canyon following a resonant exclamation.

There are several more examples of such nature illustrated. It is clear the expression of guqin music is kinaesthetic in direction as seen in the notation, and such kinaesthetics is related to Nature within, through breadth and qi 氣, as well as corresponding with Nature without, as these series of illustrations show. This union with Nature ultimately transcends binary opposites of music and musician, musician and instrument, and sound and action.

To end, here is again the quote from XSQK for final contemplation:

吾复求其和者三，1) 曰弦与指合，2) 指与音合，3) 音与意合，而和至矣。

There are three ways I look for harmony, 1) the strings and fingers being in union, 2) the fingers being in union with the sound, 3) the sound being in union with the meaning/intention, and so harmony is perfected.

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⁴⁵ Ibidem, 122-123.

⁴⁶ Tian Zhiweng [(宋) 田芝翁著], (2020). Taiguyiyin (Ming coloured copy [太古遗音 (明 精钞彩绘本)]). Edited by Guqin Wenxian Yanjiushi[古琴文献研究室编]. Hangzhou: Xiling Yinshe Chubanshe [西泠印社出版社], 106-107.

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SOUND OF 'LOFI' IN THE SUBTROPICAL AFTERNOON: OKINAWAN RYUKYU KAREN IN THE VIEW OF ART THERAPY AND WELL-BEING

Huang Wan¹

Abstract

Ryukyu karen is a relatively new 13-string musical instrument designed by Komesu Seijiro from Okinawa in 2003. Similar to Okinawan sanlele, it hybridizes Japanese taishōgōto, Western guitar, and Okinawan sanshin, embodying Okinawan cultural spirit of 'chanpuruu'. This paper is based on fieldworks and research that existed, in the views of 'art therapy'² and 'anthropology of the good'³, and argues that its soothly melody, swinging rhythm, natural soundscape, chords and prolongation sound, rich layers, and clean timbre collectively create a sense of atmosphere, which has been increasingly used in therapeutic practices in recent years. Especially, the intimacy of group musiking, the easy-to-perform, and the social space of public performance enable the disabled and elder minority, who have been exclusive from marginalization. Just like the word karen, which literally means lovely, can be interchanged with Renge (lotus), its sound is metaphorized as joy and sorrow of life with healing power beyond entertainment.

Keywords

Okinawa, Ryukyu karen, Lofi, Ambient music, Well-being

Twenty years ago, several new musical instruments invented in Okinawa could have been witnessed, for example, the Ichigoichiye in

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² Hill, Adrian (1945). *Art versus Illness*. London: George Allen & Unwin.

³ Robbins, Joel (2013). Beyond the suffering subject: Toward an anthropology of the good. *Journal of the Royal Anthropological Institute* 19 (3): 447–462.

2003⁴, the Sanlele⁵ in 2004, and the Ryukyu karen in 2003. This paper takes Ryukyu karen as the object of study. The reason lies in the fact that my personal connection with Ryukyu karen started 2 years ago in Shanghai Okinawan diaspora community. In February 2022, a bit more than 1 month before the 'Shanghai lockdown' during the Covid-19 pandemic, Nishihara Keisuke contacted me and asked for help find a Chinese maker in order to cut the cost for Ryukyu karen's mass production. It attracted me not only because it is a new invented culture or is involved in the process of globalization but also because it breaks the boundaries of 'music as art' and is used as a music 'medicine' in the field of clinical healing practices, especially after 2020.

HISTORY, BACKGROUND, AND TWO DIRECTIONS OF DEVELOPMENT

Ryukyu karen was designed in 2003 by Komesu Seijiro from Ginowan city, Okinawa. He obtained license (no. 4592561) for making it 7 years later.

HISTORY AND BACKGROUND

Ryukyu karen hybridizes Japanese taishōgoto and Western guitar and uses strings of Okinawan sanshin. It is smaller than Japanese taishōgoto and guitar. It has 13 strings, with 1 melodic string, tuned as 4C, and uses the same material from Okinawan Sanshin. It has 19 frets on fingerboard, covering 12 degrees of range (C, #C, D, #D, E, F, #F, G, #G, A, bB, B, c, #c, d, #d, e, f, #f, g); 12 chord strings are divided into 4 chord groups (I: 3C-3G-4E, IV: 3F-3A-4C, V: 3G-3B-4D, VI: 2A-4C-4E). In terms of its performance practice, it is normally put on a table or a stand, with the left hand pressing firmly on the melody string with the index and middle fingers sliding between frets, and generates noise like guitar does; meanwhile, the right

⁴ Miralles Francesc and Héctor Garcia (2018). *The Ichigoichie: Japanese Wisdom for Experiencing Unforgettable Moments*. [Ichigo-ichie. De Japanse wijsheid voor het beleven van onvergetelijke momenten]. Accessible via www.boekerij.nl, last accessed 8 September, 2023.

⁵ Huang Wan (2021). Sanlele 'Jumping' on the Road of Glocalization: Sounds of Okinawa Tropical Champuru Culture and the World Youth Uchinanchu. *SIMP Studia Instrumentorum Musicae Popularis (New Series)*, 7. Edited by Gisa Jähnichen. Berlin: Logos, 35–52. DOI: 10.30819/5319.03

hand plucks melodic and chord strings with fingernail or thumb pick. Its tunes are composed mainly of Okinawan folksong and a few Japanese folksongs and Western renowned folksongs. In the recent 3 years, seven new compositions also emerged, specifically for Ryukyu karen.

Width of head	11.5cm	Length of string	63cm
Length of head	18cm	Length of fretboard	37.5cm
Width of neck	12cm	Sound hole	2.3cm - 8.5cm
Length of string	56.3cm	Width of soundbox	22cm

Figure 1: Measurements of the standard Ryukyu karen originally made in Okinawa.

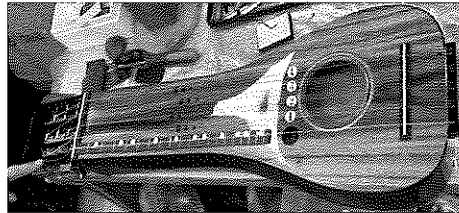


Figure 2: Ryukyu karen (this instrument is owned by author)

All these above phenomena of ‘mix’ represent a strong sense of chanpurū cultural spirit, especially found in Okinawa, in which chanpurū originates from the Malay and Indonesian word *campur*, meaning *mix*, used to refer to the culture as a mixture of traditional Okinawan, Chinese, mainland Japanese, Southeast Asian, and North American culture.⁶

It maintains basically the same construction as was designed in the past 20 years; only a few tiny changes are found in Okinawan diaspora community in Shanghai and Guangzhou this year⁷. The material of melodic string has been changed from that of Okinawa sanshin to guitar string because of the shortage of material; more sound holes are added in order to make chord strings resonating louder because the four

⁶ Also written chanpurū. It is recommended to look up this term.

⁷ Nishihara Keisuke and Huang Wan (2023). Interview on 9 March.

groups of chord strings are believed more important than melodic strings; besides, the tuning peg has been improved, ensuring a more stable pitch than that made in Vietnam.

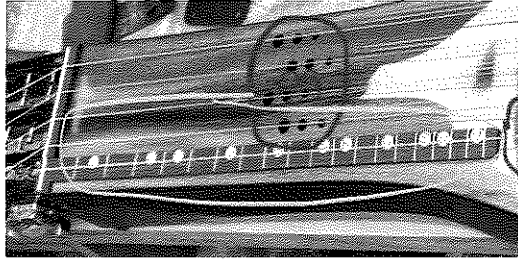


Figure 3: More sound holes are added on the fingerboard (with permission to use this photo by Nishihara Keisuke on 9 March, 2023).

It has obtained increasingly high popularity and good reputation in recent years. It won a special judge award at the Japan Grand Prix Okinawa competition held on May 19, 2019. There are 19 Ryukyu karen groups⁸, 11 registered teachers, and 2 music books and 2 CDs released to the public. There are 19 places organizing Ryukyu karen events; 10 of them are community centers, 5 are well-being centers, and 4 are classrooms.⁹



Figure 4a and 4b (left and right): Two music books using the instrument as a design on the front cover (detailed photos by author on 4 March, 2023).

⁸ There are 5 groups in Urasoe city, 2 groups in Ginowan city, 2 groups in Nanjo city, 2 groups in Nishihara city, 1 group in Nago city, 1 group in Itoman city, 1 group in Naha city, 1 group in Uruma city, 1 group in Okinawa city, 1 group in Tomigusuku city, 1 group in Haeburu city, and 1 group in Kitanakagusuku city. Accessible via <http://ryukyu-karen.com/circle/>, last accessed 8 January, 2023.

⁹ Komesu Seijiro. (n.d.) Introduction of Ryukyu Karen. Accessible via <http://ryukyu-karen.com/>, last accessed 9 May, 2023.

Ginowan city and Urasoe city apparently are the most widely spread areas because the musical instrument inventor Komesu Seijiro bases his career mainly in these two cities. It also obtained support from the governmental level. For example, the Cultural Affairs Commission of the Okinawan Government showed a positive attitude and accepted the use of it in the Okinawa northern Special Committee on the 23rd April, 2022. According to the report: "there is not much other instruments which can perform the simple chord easily like Ryukyu Karen does.....it is meaningful for spreading Okinawan culture"¹⁰.

TWO DIRECTIONS OF DEVELOPMENT

Initially, it was designed "specifically for children, elders, and disabled people"¹¹ according to Komesu Seijiro¹². In its just 20 years of history, two different directions of developments have emerged.

Firstly, it was for primary school education and community elder well-being in both Okinawa and mainland Japan. Ryukyu karen was designed for both Okinawan people and Yamato in mainland Japan¹³. During the interview, Komesu Seijiro expressed his intention of promoting this Okinawa-born healing instrument in mainland Japan, hoping to transmit the concept of *music as natural sound*, and imagined it would be warmly welcomed in Japan. He hybridized Japanese *tai-shōgoto* with guitar and *utasanshin* music, in order to call for nostalgic feelings of the older generation, especially born in the era of Showa. In order to cut the cost and improve the quality, he was seeking manufacturers in Vietnam and China for future mass production, to some extent being a sign of upcoming success, especially with the support from the government mentioned above.

¹⁰ The Ryukyu Shimpō Report (2021). Okinawa born Ryukyu karen's first class? Recognition from Cultural Affairs. Unpublished report. Accessible via <https://ryukyushimpo.jp/news/entry-1292046.html>, uploaded 24 March. Last accessed 7 January, 2023.

¹¹ Nakagawa Hiroe (2023). *The Ryukyu Shimpō: The Sound of Ryukyu Karen in the World*. Accessible via <https://news.yahoo.co.jp/articles/402e21771684cfc09aac3b2cd79d94b1b2723ef>, uploaded 19, February. Last accessed 9 May, 2023.

¹² Komesu Seijiro and Nishihara Keisuke (2021). Interview on 9 July.

¹³ *Ibidem*

Secondly, especially in the recent 3 years during Covid-19 pandemic, Ryukyu karen started to enter into hospital and other platforms for variant therapeutic purposes. According to Komesu Seijiro, its sound is soft, transparent, gentle, unreal, and exotic; thus, it is “not only used for music appreciation but also used for rehabilitation therapy”¹⁴. For me, it is surprising to find that music of Ryukyu karen, especially 10 new compositions from a newly published CD, is described as a medicine that can relax the brain and heart and used for anxiety and impatience in an advertisement page together with many other therapeutic advertisements for foot pain and femoral joint pain in the therapeutic journal *Yuhobika*.¹⁵ Except for use in hospital, there comes out a 15-minute-length radio program titled *Healing Ryukyu Karen*¹⁶ produced by FM 2.1 (76.8MHz) once a month since February 2022 and once a week in 2023; tunes of it are mostly new compositions for the radio healing program, which aims to facilitate people listening anywhere with smart phones when do self healing/meditation or curing insomnia before sleeping.

‘LOFI’ SOUND AND POWER IN RYUKYU KAREN

Then, what does the musical *medicine* sound like? Why and how does it function in various healing practices? Take Komesu Seijiro’s performance of Okinawan folksong “*Tinsakunuhana*”¹⁷ on Ryukyu karen for example. Compared with its Utasanshin version, *Tinsakunuhana* on Ryukyu karen changes to be an enchanting light music, with the tempo being much slower, a lower volume, and cleaner and more transparent sound, which gives out mood of warm, harmony, and relaxing. It

¹⁴ Komesu Seijiro (n.d.). *Introduction of Ryukyu Karen*. Accessible via <http://ryukyu-karen.com/>, last accessed 9 May, 2023.

¹⁵ Yuhobika Editorial Department (2022). *Listen to its sound, ease anxiety and impatience, and relax brain and heart*. Accessible via https://yuhobika.net/yuhobikaweb/yu2209_karen_cd/, uploaded 20 July. Last accessed 9 May, 2023.

¹⁶ *Radio Program Healing Ryukyu Karen* (2023). Accessible via <https://www.youtube.com/watch?v=fwrVQY9jwzc>, uploaded 5 January. Last accessed 9 May, 2023.

¹⁷ Komesu Seijiro (2022). *Performance video*. Accessible via www.youtube.com/watch?v=_iINBoN-KnA, uploaded 31 May. Last accessed 7 January, 2023.

shares a similar atmosphere with music used in the healing radio program mentioned above.

TWO RELATED GENRES

In order to understand its sound features and cultural spirit, there are two related music genres or concepts that should be discussed first of all.

The first is the Lofi music. Lofi is a short form for low fidelity. It is a music or production quality in which elements usually regarded as imperfections in the context of a recording or performance are present¹⁸. At various points since the 1980s, “lofi has been connected with cassette culture, the DIY ethos of punk, primitivism, outsider music, authenticity, slacker/Generation X stereotypes, and cultural nostalgia.”¹⁹ It combines elements of hip hop and chill-out music, a loosely defined form of popular music characterized by slow tempos and relaxed moods²⁰ to those who are cultured in this way, and refers to “anything that might be identified as a modern type of easy listening”²¹; it turns to be Lofi hip hop, also known as chillhop and lofi beats, a form of downtempo music features of “introspection.....and seeks to engage with elements of human emotion”²². According to Kirk, a diaspora ‘old time’ country music and ‘lofi old time’²³ practitioner active in Shanghai, Lofi hip hop is suitable for urbanised people who live closely to each other and nourishes a music sense of intimacy, just

¹⁸ Harper, Adam (2014). *Lo-Fi Aesthetics in Popular Music Discourse*. Wadham College, University of Oxford. DPhil Thesis in Musicology. 15–28. Unpubl. mat.

¹⁹ Wang, Justin (2019). Beats to Relax/Study To: Contradiction and Paradox in Lofi Hip Hop. *IASPM Journal*, 9(2) 42–47. DOI 10.5429/2079387

²⁰ Rosen, Jody (2005). The Musical Genre That Will Save the World. *Slate, Online Archive*. Accessible via <https://slate.com/culture/2005/06/chill-out-music.html>, last accessed 10 January, 2023.

²¹ Lanza, Joseph (1995), *Elevator Music: A Surreal History of Muzak, Easy Listening & Other Moodson*. Ann Arbor: Michigan University Press, 167–182.

²² Wang, Justin (2019). Beats to Relax/Study To: Contradiction and Paradox in Lofi Hip Hop. *IASPM Journal*, 9(2)P44–47. DOI 10.5429/2079387

²³ A music style created by Kenny Kirk during the Covid-19 pandemic in 2020, Shanghai.

like the Bluegrass emerges in new American urban settings and was entangled with nostalgia for past country life²⁴.

The second is the ambient music. The following can show the shallowness and the local misunderstandings resulting from using any search engine online. There, the first entries say that, it is a genre of instrumental music that "focuses on sound patterns more than melodic form and is used to create a certain atmosphere or state of mind"²⁵ and a genre of music that emphasizes tone and atmosphere over traditional musical structure or rhythm. It may lack framed composition, beat, or structured melody. Together, imagined soundscapes may be included, and the sounds of acoustic instruments such as the piano, strings, and flute may be emulated through a synthesizer.²⁶ It is thus said by Lanza that it can evoke an atmospheric, visual, or unobtrusive quality. It uses textural layers of sound, often without a tune or beat, rewarding both passive and active listening²⁷, intending to make people relax or create a particular mood and encouraging a sense of calm or contemplation.

'LOFI' SOUND OF RYUKYU KAREN

Music on Ryukyu karen invokes a feeling of Lofi atmosphere, rather than entertainment or pure appreciation. Lofi here in this paper has two layers of meaning. On one hand, it is a metaphorical description. Just like Komesu Seijiro's word "sub-tropical afternoon beautiful sound", it is also interesting to find that the image used in music healing events or CD promotion does highlight a lovely girl playing Ryukyu karen by the seaside in gentle wind and warm sunshine and circled by bunches of Okinawan everywhere found flower hibiscus,

²⁴ Kirk, Kenny and Huang Wan (2022). Interview on 24 November.

²⁵ *Ambient music* (2023). Accessible via <https://www.dictionary.com/browse/ambient-music>, last accessed 10 January.

²⁶ *Ambient music* (2023). Accessible via https://en.wikipedia.org/wiki/Ambient_music, last accessed 10 January.

²⁷ Lanza, Joseph (1995), *Elevator Music: A Surreal History of Muzak, Easy Listening & Other Moodsong*. Ann Arbor: Michigan University Press, 167–182; Meddegoda, Chinthaka Prageeth (2021). *Instrumental Ambient Music and Musical Entertainment in Sri Lankan Tourism. SIMP, Studia Instrumentorum Musicae Popularis (New Series) 7*. Edited by Gisa Jähnichen. Berlin: Logos, 125-136. DOI: 10.30819/5319.16

expressing the same feeling of Lofi atmosphere²⁸, just like the American musician Kirk, who invented 'banjo Lofi hip hop', said, "Lofi definitely has a function, and an accompanying aesthetic which can be seen in its very specific, warm anime pictures — girl studying with cat by window at night, listening to music, rainy outside, comfy sweaters..."²⁹

On the other hand, Lofi refers to its sound. There are six features that echo the Lofi atmosphere of the vivid image, which are summarized here below.

a. Stable and soothing melody. All songs share similar features of stable and soothing melody. On one hand, the melody is not heavily rolling; there are mainly second-degree progressions, and a few third-degree progressions happen because it comes from the regional Okinawan music scales.³⁰

b. Slow tempos. I analyze 57 songs from *Ryukyu Karen Music Book* and find about 90% songs are in slow tempos, and 80% BPM (beats per minute) are between 50 and 76, lower or close to human heartbeat. This is also close to the tempo of lofi hip hop, which is between 70 and 85 BPM³¹. However, music from CD 2022 titled *Healing Ryukyu Karen*, CDs released in 2020, radio programs, and live performances is mostly arranged from Ryukyuan/Okinawan folksong and partly newly composed specifically for Ryukyu karen, 100% of which are in the same tempo of 60 BPM.

c. Swinging rhythm. For cultural insiders, this instrumental music arranged from folksong has a hidden swing rhythm originally embodied in lyrics. It is a representative rhythm of Okinawa music, an

²⁸ Accessible via <https://www.youtube.com/watch?v=Cqj20VBKyDw>, uploaded 23 August. Last accessed 9 May, 2023.

²⁹ Kirk, Kenny and Huang Wan (2022). Interview on 24 November.

³⁰ For cultural insiders, this feature of melody is connected to feelings of 'stable and soothing'. For cultural outsiders this may not be a valid feature.

³¹ Wang, Justin (2019). Beats to Relax/Study To: Contradiction and Paradox in Lofi Hip Hop. *IASPM Journal*, 9(2): 42. DOI 10.5429/2079387

uneven two-beat features of micro syncopation with upbeat emphasized.³² According to Yoshiko Kojima, Okinawan musicality has a gene of swing rhythm, “because when the sea people take the narrow boat named blue and white fish to go out to the sea for fishing, they develop the physical habit of actively shaking in response to the waves to avoid falling into the sea, which breeds the sense of rhythm swing”³³. The backbeat here mentioned can be understood in a metaphorical way, for example, like “a beat lag floating into the sky”.³⁴

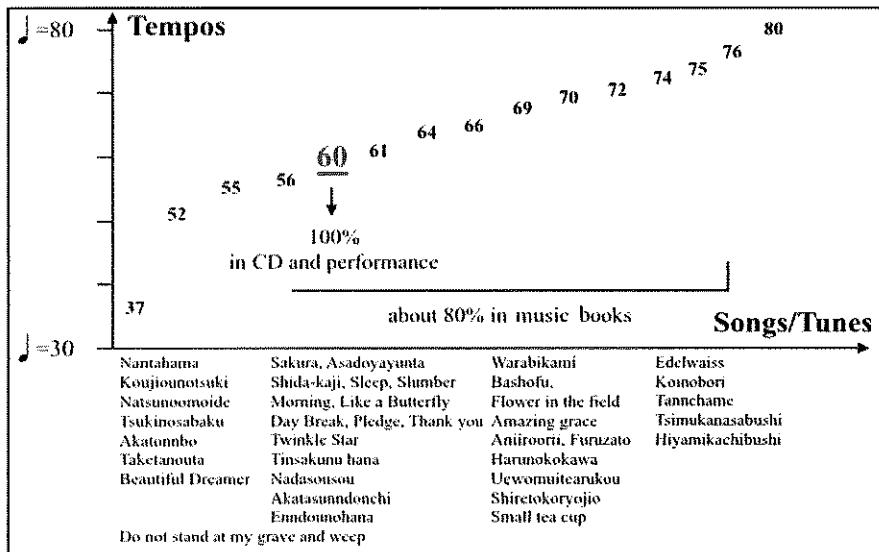


Figure 5: The analysis on BPM of all Ryukyu karens music known to the author.

d. Oriental and nostalgia timbre. The timbre of Ryukyu karens also gives out an oriental mood, especially when playing with a stick. For

³² The irregular beat value is *embedded* in the lyrics, which is difficult to quantify and record. The sense of swing is internalized into the deep rhythm specification of Okinawa music, whereas in actual music performance, the inner beat is highly impromptu or uncertain. The irregular micro improvisation between beats is believed “moved by the heart” that also highly valued in other singing genres. Local people sometimes use metaphors of *sticky and soft* or *water in the air* to describe the beauty of folksong singing.

³³ Yoshiko Kojima (1976). *The Japanese Sense of Music. Throat, Vol. 9, No.2, 92-93.*

³⁴ Kirk, Kenny and Huang Wan (2021). Interview on 16 November.

Okinawan, according to my understanding,³⁵ the oriental mood is connected with imagined Gamelan music from Indonesia; on one hand, they share the same musical scale 134571^; in Okinawa, it is the easily identifiable Ryukyuan music scale, whereas in Bali, it might be pelog patet nem; on the other hand, it tries to imitate huge numbers of hours-long Gamelan music videos on Youtube edited for meditation or yoga. It is also interesting to find that the timbre of Ryukyu karen is a chanpurū style, too. It was initially designed for both Okinawan people and Yamato in mainland Japan; in this regard, it is a musical instrument situated between Okinawa and Yamato.

e. Natural soundscape. According to the definition of ambient music, "nature soundscapes may be included, and the sounds of acoustic instruments such as the piano, strings and flute may be emulated through a synthesizer."³⁶ Imagined nature sound is also included in music of Ryukyu karen. On the one hand, it imitates nature sound in order to generate an ambience of relaxation. For example, in the new compositions *Shida-kaji*, *Sleep*, *Slumber*, *Morning*, *Like a Butterfly*, and *'ay Break*; they incorporated different nuisance of sound of waves, sound of rising and falling tides, bubble sounds in water, dripping water and sound of wind through trees, and so on and the 60 BPM tempo, meeting the artistic conceptions of Ryukyu karen's music. On the other hand, like guitar, fingers sliding between frets on its fingerboard bring out a kind of background noise, similar to the effect of white noise³⁷. Thus, obviously, this instrumental music began to shift the focus to sound timbre and patterns rather than just focus on melody, creating a certain atmosphere or state of mind. The melodic form does still work though.³⁸ Apart from it, the title and lyrics of songs in these two music

³⁵ Which is urban and, therefore limited to what I am grown up with and cherish beyond my own youth.

³⁶ Ambient music. Accessible via https://en.wikipedia.org/wiki/Ambient_music, last accessed 9 May, 2023.

³⁷ White noise is a discrete signal whose samples are regarded as a sequence of serially uncorrelated random variables with zero mean and finite variance.

³⁸ Apart from it, the title and lyrics of songs in these two music books for Ryukyu Karen also share similar artistic conception, creating imaginary scenes of people standing by the seaside or in the forests, which can be divided into at least four categories: Nature, including star, silent night,

books for *Ryukyu Karen* also share similar artistic conception, creating imaginary scenes of people standing by the seaside or in the forests, including lyrics like star, silent night, sky, light, flower, morning fog, butterfly, boat, autumn, hazy moon, cloud, summer night, desert, and camel.

f. Layered sound and sound space. The soft sound together with very simple chord progression and arpeggio (I-V-IV-I) and sound layers or timbre hierarchies create sense of sound space.

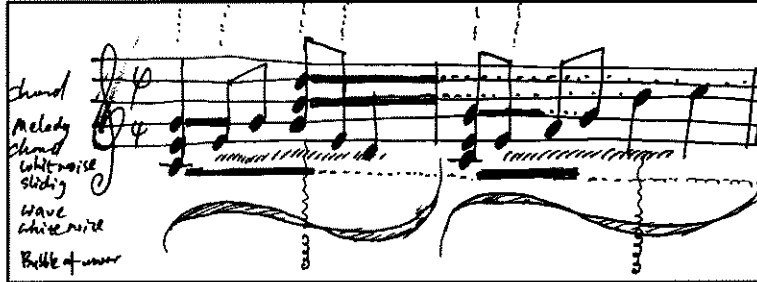


Figure 6: Score of *Tinsakunuhana* and notation (by author) of its lofi style in live performance³⁹ by Komesu Seijiro.

ENERGY IN 'LOFI' SOUND

The forward words said in a new released CD that was actually proposed initially by Komesu Seijiro that the music is not only for entertainment but also for rehabilitation therapy. Music of Ryukyu karen is no longer an aesthetic object but a healing sound. Physically and psychologically speaking, there are powers in these sound features.

In terms of its sound, the feature of stable melody and the uneven regional two beats swinging rhythm creates a feeling of warm, soothy, hazy, and slight tipsy, contributing to an intimacy, especially among Okinawan people. Since the human heartbeat normally is between 60 and 100, or 72 in average, the feature of slow tempo, say the 100% 60

sky, light, flower, morning fog, butterfly, boat, autumn, hazy moon, cloud, summer night, desert, and camel; homeland and nostalgia; life experience: happiness, mediation, beauty, truth, goodness, grace, God, praise, joys and sorrows, glory, sadness, tears, and loneliness; and girl with mother.

³⁹ Komesu Seijiro (2022). *Performance video*. Accessible via www.youtube.com/watch?v=_iINBoN-KnA, uploaded 31 May. Last accessed 7 January, 2023.

BPM and the 90% 50–75 BPM of music on Ryukyu karen, undoubtedly mediates human breathe. As a result, that is encouraging a sense of calm or contemplation.

The invented timbre calls for listeners' oriental, nostalgia, and regretful sense. Just like the sense of healing air floats on the Ryukyu scale, the sound that can be used as medicine is better to be music engaged with elements of human emotion. For Okinawan elder women, the majority of music of Ryukyu karen is arranged from old-fashioned Ryukyuan and Okinawan folksongs; the melodic line dominates a sense of history and place, connecting people with Japanese taishōgōto and Ryukyuan folksong, easily calling for a sense of regional belonging and cultural nostalgia.

In this study, the music is refined and situated in therapeutic purpose performance. The distinction and notation of sound layers are helpful to understand its function. Apart from the melodic line connecting people with Japanese taishōgōto and Ryukyuan folksong that dominates a sense of history and place, the nature soundscape, swinging rhythm hidden in lyrics, all kinds of sounds of water or waves as 'white noise', and the prolongation chord, providing an artistic mood and hazy atmosphere for therapy or meditation, the very simple chord progression and arpeggio (I-V-IV-I) and sound layers and the feature of sound textural layers shift focus on sound patterns rather than on lyrics and melody, producing transparent, fresh, and lovely exotic sound, creating a sense of ethereal and spacious atmosphere and guiding a way to a certain atmosphere or state of mind for meditation.

During listening, when the natural sound keeps going, it will gradually hide into the background, the deep layer of sound space, and make listeners relax from active listening, which seems like 'white noise' that has a sedative and hypnosis efficacy. This artistic conception of nature soundscape aroused the state of meditation. For example, in a video clip titled *Place of Meditation* uploaded by professor Mogi Kenichiro from Tokyo University, who devotes himself into the study of meditation, most viewers in the comment interaction platform feedback positively and mention sky, snow, evening night, stars, and so on, being helpful for mediation and connecting nature spirit.

RYUKYU KAREN IN THREE THERAPEUTIC PRACTICES

Then, what are the artful therapeutic practices related to Ryukyu karen? I will focus on three cases about Ryukyu karen in recent years.

CASE 1

Some therapeutic lecture performances of Ryukyu karen were organized in the recent 3 years, especially during covid-19 pandemic. They were officially recognized and recommended by medical associations like 'Therapeutic Research Society' and were carried out in hospitals. Adrain Hill coined the term 'art therapy' in his book *Art Versus Illness*⁴⁰ in 1945 in order to describe work that began when he was a patient in a tuberculosis sanatorium; artists, as therapists, since then "began to initiate art appreciation programs in hospital and community for therapeutic purpose"⁴¹. Adrian Hill wrote that the value of art therapy lay in completely engrossing the mind (as well as the fingers)... releasing the creative energy of the frequently inhibited patient, which enabled the patient to build up a strong defence against his misfortunes.⁴²

On 11 October, 2019, a lecture performance titled "Experience Guitar & Ryukyu Karen" was held in Uruma City Izumi hospital sponsored by Okinawa Music Therapeutic Research Society lectured by researcher Yoichi Hattori from Ryukyu University and performed by Komesu Seijiro.⁴³ On 26 September, 2021, another lecture performance titled *Music Trains the Brain* was lectured by researcher Kenichiro Mogi from Tokyo University and performed by Komesu Seijiro.⁴⁴ These lecture performances argue that experiencing or listening to the music of

⁴⁰ Hill, Adrian (1945). *Art versus Illness*. London: George Allen & Unwin.

⁴¹ Rubin, Judith Aron, ed. (2016). *Approaches to Art Therapy: Theory and Technique*. New York and London: Routledge, 445.

⁴² Ibidem

⁴³ Izumi Hospital (2019). *Research Session 23 (7)*. Accessible via <https://www.izumihospital1985.or.jp/entry2.php?eid=40634>, uploaded 11 October, 2019. Last accessed 8 January, 2023.

⁴⁴ Kenichiro Mogi and Komesu Seijiro's event. (2021). Accessible via <https://blog.goo.ne.jp/akinokozo/e/8990eb522105d860fde4237091c5ecc9>, uploaded 26 September, 2021. Last accessed 8 January, 2023.

Ryukyu karen facilitates patients to calm down and to relax the brain and heart during rehabilitation therapy, in that it is used as a medicine for anxiety, impatience, and Alzheimer's disease, a common neurodegenerative disease found in the elder characterized clinically by a progressive loss of memory and cognitive impairment.

CASE 2

Apart from the lecture performances in hospitals, public concert and individual or group appreciation activities also attracted researchers' attention. A project titled "heart echoes" collaborated between Komesu Seijiro and Ryukyu University, based on the method of questionnaire, published its result online on Apr. 2, 2020.⁴⁵ In this project, 217 people with Ryukyu karen performing/listening experience and 213 people without this experience, with the age range between 40 and 65, were surveyed.

The aim of this research is to prove two assumptions: A. Ryukyu karen's timbre has a healing effect on stabilizing human emotion, and B. As a musical instrument, it is very easy to play. After 10 years of clinical practice, the project obtained good reputation amongst performers and listeners in Okinawa and proves that the healing effect is remarkable.

Research A was conducted from July 21 to Dec. 31, 2019 in three different Ryukyu karen performing/listening contexts: events/ activities (54 people surveyed), concerts (295 people surveyed), and online listening (81 people surveyed). Four emotional parameters, positive mood, stable mood, uneasy mood, and depressive mood, were taken into consideration. The chart here below shows that Ryukyu karen's timbre has clearly a healing effect on stabilizing human emotion⁴⁶. Through this investigation and research, the music therapy of Ryukyu karen has a comparatively scientific basis.

⁴⁵ Komesu Seijiro and Ryukyu University (2023) *Result of Research Project A: Ryukyu Karen's Timbre/Sound Has Healing Effect on Stabilizing Human Emotion*. Unpubl. project paper. Accessible via <http://ryukyu-karen.com/project-1/>, last accessed 8 January, 2023.

⁴⁶ Yoichi Hattori and Aniya Mika (2020). *Research Project Report on Ryukyu Karen Heart Echoes*. Unpubl. ms.

However, this project concluded in the report that it is important to take timbre and experience of performing Ryukyu karen into considerations. It is difficult to exclude the influence of factors other than timbre, such as people's memory and emotion in songs; in terms of methodology, it reflected that further study will be conducted trying to control variable factors such as sampling and performance environment...trying do questionnaire in laboratory and use electroencephalogram (EEG) analysis.

The EEG mentioned in the report is actually widely used as a primary method for evaluating the meditating brain. Although the research on healing power of it so far mainly focused on public performances or lecture performances, actually with the emergence of the radio program *Healing Ryukyu Karen*, that aims to facilitate people doing self healing/meditation or curing insomnia, and with the emergence of seven new compositions as 'medicine' especially for healing, it is clear that Ryukyu karen will be more involved into meditation practice in the future. Meditation plays an increasingly key role in our daily life nowadays.

Kenichiro Mogi⁴⁷ argues in his therapy and education research that mind changes by mindfulness meditation, which is helpful for an increase in EQ level, eliminating panic disorder, and bringing happiness to human beings. Recent studies in Brain Science and Cognitive-behavior Neuroscience also found that meditation can activate the prefrontal cortex and inhibit the activity of amygdala in the limbic system and improve human emotional behavior, helping people to manage anxiety, stress, depression, pain, and symptoms related to withdrawal from nicotine, alcohol, or opioids and helping people to enhance peace, perception, self-concept, and well-being, as a result improving the quality of their lives⁴⁸.

There is also a worrying voice: "much of the research on meditation topics has been preliminary or not scientifically rigorous...the effects of those practices are hard to measure, results from the studies have

⁴⁷ Kenichiro Mogi (2013). Cognitive Factors Correlating with the Metacognition of the Phenomenal Properties of Experience. *Scientific Reports*, 3, Article: 3354. DOI:10.1038/srep03354

⁴⁸ Behan C. (2020) The Benefits of Meditation and Mindfulness Practices During Times of Crisis such as COVID-19. *Irish Journal of Psychological Medicine*, 37: 256-258.

been difficult to analyze and may have been interpreted too optimistically⁴⁹; thus, EEG to some extent is believed to be a complimentary empirical approach in evaluating the running spontaneous activity of the cortex that is classified into four main classifications based on the frequency of the activity, ranging from low-frequency delta waves commonly found during sleep to beta waves associated with an awake and alert brain. In between these are theta waves and alpha waves. Many studies on mindfulness meditation have linked lower-frequency alpha waves as well as theta waves to meditation. According to a research study that existed, functional magnetic resonance imaging measures brain activity by detecting changes associated with blood flow, showing that after 20 minutes of meditation, β -waves began to decrease significantly⁵⁰.

CASE 3

Apart from the Brain Science and Cognitive and Neuroscience, there is another research B conducted by Ryukyu University and Komesu Seijiro aiming to prove the second assumption “Ryukyu Karen is a musical instrument that very easy to play”, which guides further thinking to humanistic and systematic approaches focusing on psychological needs of human beings and on how people are in the world in music-making ways. The result shows that there are 62 persons who attended the interview; most of feedbacks came from the elderly and adults, in which 51% feedback easy and 33% feedback difficult.⁵¹

Why did they do this survey? Actually, since 2003, Komesu Seijiro had been working on the long-term mental retardation at the disabled people’s facility, the reason why he designed this musical instrument initially aimed at making musical instruments that can be played by disabled people with one hand.⁵² After that, the Ryukyu karen is

⁴⁹ Behan C. (2020) The Benefits of Meditation and Mindfulness Practices During Times of Crisis such as COVID-19. *Irish Journal of Psychological Medicine*, 37: 256–258.

⁵⁰ Ibidem

⁵¹ Komesu Seijiro and Ryukyu University (2023). Result of Research Project B: The difficulty of Performing Ryukyu Karen. Unpubl. project paper. Accessible via <http://ryukyu-karen.com/project-1/>, last accessed 8 January, 2023.

⁵² Yoichi Hattori and Aniya Mika (2020). Research Project Report on Ryukyu Karen Heart Echoes. Unpubl. ms.

welcomed not only by disabled people but also by children, the elderly, and music lovers, especially elder women. Nowadays, it can be found in hospital, rehabilitation facilities, workplaces, and schools. Okinawan elder women established music groups making music together mainly in the afternoon tea time, sharing Ryukyu folksongs they all knew, and exchanging daily life experience. Sometimes, they held public concerts performing on stages, like musicians do.

This way of music-making actually inherits the tradition of Japanese taishōgōto. It is believed that because the body of Japanese taishōgōto and Ryukyu karen are not big enough, the resonance is not ideal, in that 10 or more musical instruments ordinarily join together, with sound layers from each instrument interweaving with each other and contributing to an atmosphere of intimacy of sharing in this special sub-tropical afternoon sound space.

Apart from constructing an atmosphere of intimacy, the disabled people and the elder women also feel self-realization and happy during music-making. This group musicking or group quasi-music therapy practice calls for “systematic approaches”⁵³ that focus on family and group therapy. The efficacy of group treatment lies in the opportunity it offers for a unique kind of learning that can contribute significantly to personal growth and change. They learn, perform, and compose *Ryukyu Karen* music together, obtaining new musicality and sharing social space with non-patients, through which avoiding being alienated or being socially excluded and marginalized.

Besides, participants arrive bearing and wearing their history. Members’ customary ways of seeking comfort and viewing the world are described variously as introjects, organizing principles, pathological accommodation, or learned attachment strategies, to name a few. No matter what terms are used, however, it is clear that being in a group elicits each member’s idiosyncratic patterns of thinking, feeling, and behavior and offers possibilities for experiencing new ways of being in the world.⁵⁴

⁵³ Rubin, Judith Aron, ed. (2016). *Approaches to Art Therapy: Theory and Technique*. New York and London: Routledge. 412–447.

⁵⁴ Williams, Katherine and Tally Tripp (2016). Group Therapy. *Approaches to Art Therapy: Theory and Technique*. Edited by Judith Aron Rubin. New York and London: Routledge, 432.



Figure 7: Shanghai Okinawan diaspora Nishihara Keisuke with Ryukyu kare music practitioner in Okinawa (used with permission of use this photo by Nishihara Keisuke in April 2023).

This thinking also echoes one of the field of Applied Ethnomusicology about music and well-being, which stems originally from “anthropology of the good”⁵⁵. In this new emerging field, researchers gave up interest in *the other*, darkness and social inequality, but turn to how music can bring health and well-being to human beings. Just like Komesu Seiji said, Ryukyu kare is an instrument that can realize *your wish*. This instrument and behavior of learning, listening, and performing thus serves as *agency*, bringing happiness to the disabled people and the elders.

The meaning of *good* actually hides in the name of Ryukyu kare. The kare, in Japanese かれん, has the same pronunciation as 可憐, a Japanese kanji that literally means lovely, cute, kind, tender, and beautiful, like a flower or girl that some people cherish and want to protect. It should be noted that “this concept of cute or lovely doesn’t belong to Okinawan tradition but from mainland Japan. Okinawan female, especially elder women, were expected to be strong, independent and powerful in Okinawan culture.”⁵⁶ On the other hand, according to Komesu Seiji, its sound is soft, transparent, gentle, unreal, and exotic, in accordance with the meaning of Renge, in Japanese

⁵⁵ Robbins, Joel (2013). Beyond the suffering subject: Toward an anthropology of the good. *Journal of the Royal Anthropological Institute* 19(3): 447–62.

⁵⁶ Nishihara Keisuke and Huang Wan (2022). Interview on 19 October.

れんげ or Japanese kanji 蓮華.⁵⁷ What is renga? Komesu Seijiro said karen can be interchanged with renga, a lotus blooming brightly, meanwhile with root in swamp showing strong vitality, metaphorizing joy and sorrow come together in our life experience, through which obviously adding to it a healing power beyond entertainment.⁵⁸ In that, the image of lotus is used as symbol of Ryukyu karen.

CONCLUSIONS

Ryukyu karen functions as a musical instrument in-between *for appreciation* and *for therapy*; embodies Okinawan sub-tropical lofi/ambient *chanpuruu*, its soothy melody, swinging rhythm, nature soundscape, chords and prolongation sound, rich layers, and clean timbre; and creates more sense of lofi and ambient atmosphere than music for appreciation does.

In its two uneven directions of developments, the mass production of Ryukyu karen in China since 2021, to some extent, foresees the upcoming success of its use in primary school education, especially with the support from the government. Meanwhile, undoubtedly, the Covid-19 pandemic accelerated its use in therapeutic practices.

Finally, this study on lecture performance, individual performance, and group music-making of Ryukyu karen, in its early stage though, moderately lays the foundation for a future investigation regarding this issue in rehabilitation therapy for cognitive-behavior neuroscience, individual, and group therapy through systematic approaches to the study.

⁵⁷ There is a photo of Ryukyu karen with symbolic lotus image at the bottom of it. Accessible via https://lirs.brjgiftouu.top/index.php?main_page=product_info&products_id=38894, last accessed 9 May. 2023.

⁵⁸ Komesu Seijiro. Introduction of Ryukyu Karen. Accessible via <http://ryukyu-karen.com/>, last accessed 9 May. 2023.

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THE FUTURE OF INSTRUMENTAL SOUND AND INSTRUMENTALISTS

Gisa Jähnichen¹

Abstract

The accelerated development of technology and climatic changes, which is progressively interwoven with each other, will unavoidably lead to changes in the production and use of musical instruments. It is time to investigate into these upcoming changes and their impact on many features of social life, with the views on past issues included. In this regard, the aim of this paper is to give a first overview on how practices with musical instruments can be continued on different levels of production and use through a historically informed kind of musician and instrument producer. Insofar, this overview can be seen as a beginning of diverting from a physical fixing in ethnic belongings and financial approaches widely requested among musicologists of the 21st century. 'The global perspective cannot be the end of musical instruments' is one of the theses being discussed with the help of most recent literature on the topic. It is dedicated to the second main topic of the symposium.

The structure of this paper follows the classical three-folded principle: Introduction and Background, Analysis and Findings, and Conclusions for each section, followed by a list of references that were used. This order is extremely boring, and I do not welcome the stubborn keeping to indiscriminate structures. Yet, in this case, these boring structures have to be filled with some life following the facts found.

Keywords

Visions, Research, Musicology, Organology, Future

THE PAST

The past is full of people who did a few great things but also many not-so-great things, such as constructing categories that do not fit but

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Jähnichen, Gisa (2023). The Future of Instrumental Sound and Instrumentalists. *SIMP, Studia Instrumentorum Musicae Popularis (New Series)*, 8. Edited by Gisa Jähnichen. Berlin: Logos, 81-90. DOI 10.30819/5685.05

delivered enough space to be discussed; among them are national and ethnic categories, educational level categories, the THEY/THEM and WE/US categories, and the fieldwork ethics as if people were not bright enough to observe their own lives. The great thing might have been the skill to interconnect, to translate human habits and musical deeds, and to reveal historical causalities.

STAGE	CORE QUESTION	AIMING AT BY A CRITICAL MASS OF PEOPLE	BEHAVIOURAL PROCESSES	COMMUNICATION TYPE IN THE ORDER OF AFFORDANCE	SOCIAL ECONOMIC INTEREST GROUPS IN THE ORDER OF PARTICIPATION	GLOBALLY ESTABLISHED LATEST BY
I	to hear or not to hear ('hungry')	getting something to hear yes – no	hearing hand-made music in its local limitation (material, individual experience)	direct face to face, participating	musicians, singers, instrument makers	before 1700
II	how much to hear	getting more to hear quantity	exchange with other locally limited hand-made music, increasingly using modern communication tools such as individual mobility, data mobility	transmitted through interpretation direct face to face, transmitted through early data devices	organising agencies, mobility services/early tourism, recording technology industry	1880
III	which quality to hear	getting better things to hear quality	selecting from an increasing choice of items, mass production of "varieties"	transmitted through improved data devices, direct face to face	formal music education, organising agencies, recording technology industry, studio business	1930
IV	under which conditions to hear	to hear something under better conditions embedded quality	high fidelity, selecting from an increasing choice of sound qualities and ambiances, mass production of music services (education, performance events, mobile products)	indirectly transmitted through descriptive media, transmitted through improved data devices, embedded into spatial design, direct face to face	sound design, acoustic architecture, music business agencies/event management, recording technology industry	1970
V	to hear or not to hear ('saturated')	not having to hear anything yes – no	returning back to low fidelity	refusal of music consumption, liberating effects from social conformity, communicating quietness	sound isolation companies, sound design industry, specialised tourism and related industries	2000

Figure 1: Overview given in a paper by the author published in 2013 and called *Silentium Est Aureum – Musical Choice from the Perspective of Social Communication*.²

² Jähnichen, Gisa (2013). *Silentium Est Aureum – Musical Choice from the Perspective of Social Communication*. (Music / \ Dance) Environment.

When thinking of the past, the crucial point is regretting the passing of time, the decline of musical skills, skills in productivity and versatility, and the regret of losing spatial importance through commodification of any kind of trade and traps. Intangible heritage becomes itemized and frozen and archived away; among them are witnesses of regretted passings such as musical instruments.

Now, we come back to an older paper written as a keynote for a symposium in Malaysia repeatedly taught at various places. It was about the different stages of musical needs, mostly being impacted by commodification ideas in the place of presentation, from self-made musical instruments to scenic applications of sound production. One student asked later what will come after the last stage, which was answered with “the return to number 1 on another level”. This idea grew over the years and did not lose any attraction, quite the contrary.

The five stages of the ‘development of musical needs’³ were characterized as the following:

Low fidelity is a key aspect to strive for under-sound-saturated circumstances. Having choices is seemingly the point. At this moment in history, many musicians, among them those instrumentalists, suffer the sticky stage IV of embedded quality. Some are still caught up in earlier stages. Starting over again on another, not on a “higher”, level is an appealing outlook as it offers reconsiderations and re-creations. I felt increasingly that I missed a column that is doing equity to who are those musicians, singers, and instrument makers who mainly profited from that stage. I found that I have seen this too much depending on consumption and not differentiated enough. Musical skills may step out of the circle of prevalent commodities and will be again reduced to skills of human expressions, this time based on the experiences made through the five stages as far as we are able to make them available through archival and educational skills that are urgently needed everywhere in the world. This also tells how significant will be the imagined and the true past to all experiences and that field work approaches

Edited by Gisa Jähnichen and Chinthaka Meddegoda. Serdang: UPM Press, 34.

³ Jähnichen, Gisa (2013). *Silentium Est Aureum – Musical Choice from the Perspective of Social Communication. (Music / \ Dance) Environment*. Edited by Gisa Jähnichen and Chinthaka Meddegoda. Serdang: UPM Press, 31–50.

or transcriptions one may laugh at today will become crucial instruments in keeping a past that will deliver knowledge for future undertakings, mainly through achievements made under not very great preconditions.

THE NOW

The one pandemic is just over for a short time; others may follow, but they will probably not meet unprepared people. Long-term learning leaves traces everywhere. The older people are, the better they are seemingly prepared. The social instinct makes them aware of their power and their roles. The privilege of the young generation is going to disappear, not without making a big noise and demands for consideration, which is surely well reasoned. Young people are seemingly and relatively helpless and much more than in previous generations under pressure to be more past-oriented than ever. That is simply a fact to be accepted. In some places, the trust in fairness and authorities is distorted; so, one can find a wild growth of musical businesses, sound studios, entertainment channels, and the internet as a marketplace for everything and anybody and therefore nothing to rely on. It is not surprising that many young people are clinging to old structures of musical needs as described in stage 2 or 3 as some studies show⁴. It is the arbitrariness of expressions that makes them become insufficient.

Ranking systems in academia were not revised or changed; the practical tendency to restore previous widely unbearable situations is remarkable. That also applies to the ICTM, now called ICTMD per vote,

⁴ One can find similar processes described and investigated in de Bruin, L. R. (2021). Instrumental Music Education in the Time of COVID: Maintaining Connection, Community, and Relationality with Students. *J. Music Health Wellbeing* 11: 624-717. DOI: 10.3389/fpsyg.2020.624717; Kuntz, A. M. (2021). Standing at One's Post: Post-Qualitative Inquiry as Ethical Enactment. *Qualitative Inquiry*, 27(2), 215–218. DOI: 10.1177/1077800420932599; St. Pierre, E. A. (2018). Writing Post Qualitative Inquiry. *Qualitative Inquiry*, 24(9), 603–608. DOI: 10.1177/1077800417734567

where nations become more emphasized and competitive⁵, a category that was for some years completely ignored by any virus, as it is an inter-national organisation. Belongings in terms of musical instruments are regarded as proofs. The irony is that the Study Group on Musical Instruments was steadily serving these tendencies. The stretched finger pointing at insufficient situations is directed at everyone in this study group. As could be experienced in the last world conference of the ICTM in Lisbon, people not attending in person were widely brought to apologize for having been absent. That is a fact of the now. Is it necessary to apologize for being too poor or too busy with making a living to afford traveling to places? Is it, in any way, necessary to be excluded from social and professional exchange as it was in the past of a beginning academia?

Everyone knows by now that personal attendance can be replaced, papers of conferences can be made virtually, and nobody needs to suffer long trips, expensive hotels, asking bosses for holidays, and bearing expenses in many ways. Persons can be replaced, musical instruments can be replaced, and ideas on music can be replaced. That is the now, true or not. It remains the question of what cannot be replaced? Why is it useful to travel and meet others, yet apologizing for absence is discriminatory? There were many answers in the literature used.⁶ However, it cannot be said clearly by people in charge of organisations caring about our topics, what the thing is that cannot be replaced. The fact is, also, there is not alone human interaction or physical closeness. It might be, that is a fact, too, the entire experience of efforts in a meeting, the taste, smell, physical appearance of yet unknown people, and places to visit, and possibly, the experience of other people's environments. There are changes needed, at least for what is indeed necessary

⁵ The latest bulletin of the ICTM gives clear instructions of prize applications for diverse categories; nevertheless, the prize committee is appointed by the EB, which makes it a questionable undertaking. Available at <https://www.ictmusic.org/sites/default/files/documents/bulletins/151-ICTM-Bulletin-Jan-2023-good.pdf>, 8, last accessed 23 August, 2023.

⁶ Yates, Joe, Suneetha Kadiyala, Yuemeng Li, Sylvia Levy, Abel Endashaw, Hallie Perlick, Parke Wilde (2022). Can virtual events achieve co-benefits for climate, participation, and satisfaction? Comparative evidence from five international Agriculture, Nutrition and Health Academy Week conferences, *The Lancet Planetary Health*, 6 (2): 164-170. DOI/10.1016/S2542-5196(21)00355-7. Accessible via: <https://www.sciencedirect.com/science/article/pii/S2542519621003557>, last visited 28 January, 2023.

to be added to virtual experiences beyond a more realistic sound or more realistic pictures. One first change is to not care about rankings or indexing of publications or about personal profiles. Editors, too, partially gave up. The study group's SIMP⁷, for example, is a biannual series. All articles are still peer reviewed and copy-edited, yet it is not and will never be an indexed publication. Interestingly, the articles published are getting better each time. People make use of it. That is more than one could have wished. There is, finally, a reason of the why and what: accumulation of knowledge that may fit future visions.

THE FUTURE

Yes, visions are the most needed part that cannot be replaced by anything. Visions can be the result of all kinds of experiences, knowledge accumulation, and courage, in their individual combination with mistakes and insufficient reasonings. Unfortunately, there is no warranty that it works. All is still and hopefully very human. Emphatic and ethic decision making may be practiced based on visions and opposite. An individual vision of starting over another round of developing musical taste and sound productivity in terms of different stages of musical needs is relevant to everyone who deals with the arts and performances and for some parts of music education. In other words: The past and the now is needed in order to have a vision for the future. Or saying it that way: There is no future without past and now.

Now, the problem of physically produced tools for sound generation and physical perception of the sounds generated can be seen as part of the entire process, meaning there will be musical instruments that are used to satisfy human needs of expressions, entertainment, and knowledge accumulation. They will possibly look different from now.

7 *Studia Instrumentorum Musicae Popularis (New Series)*, published biannually since 2009, undertook 3 tries to become an indexed book series but failed the 2-yearly edition mark and some other formal necessities. As most German universities do not request any KPI measurements that include indexed journals, this was obviously not needed. Statement according to Zhavorova, Alona, Wolfgang Karl Härdle, and Stefan Lessmann (2022). Data-driven Support for Policy and Decision-making in University Research Management: A Case Study from Germany. *European Journal of Operational Research*: m5G; 12 November, 2022; 13:53; DOI: 10.1016/j.ejor.2022.10.016 . Available via: <https://www.sciencedirect.com/science/article/pii/S0377221722008013>, last visited 27 January 2023.

There will be learning software programs and other combination tools for sound generation that help create new visions. And finally, automation and artificially intelligent programs cannot take over the creation and satisfaction of human needs for music, sound, and everything that is based on it as all these things are driven by the human reflection of time.

In 1985, I wrote for the first time in my life about Bohumil Geist's 'Origin of Music' and came to the conclusion that experienced time is the only feature among humans that is perceived or as one says today 'having been aware of' but not materialized or 'reflected' in expressions other than in performing arts, especially in music which can shorten and extend time perception. Music is what makes movements flowing, performed stories rooting in time frames, and performance entertainment suggesting timelessness and, in result, stimulates memories in parts of the brain that cannot be reached otherwise. I had a vision at this point of history. The vision I had was answered through experiencing different and individualised time perceptions.

A study by Chris Parkin⁸ shows some examples of musical instruments that may survive the physical deconstruction of sound generating tools. However, a short shallow listening proves that only the first example can correspond to a new round of the first stage. Still, it proves the necessity of music for any kind of other performances, not only dance. The power of habits in accompanying sound is extremely strong and might be often the only surviving feature in the future. Shy headbanging and body-inducing gestures are applied in strange ways⁹ as if they belong to the sound. What if this music-centred approach overlooks the most important feature: The making of music with all its physical sacrifices might be the part of promising satisfaction, not the pure and well-calculated musical construction that can be measured and transcribed. The motorising of dada-machines is not the nail to the coffin

⁸ Parkin, Chris (2017) These are the instruments of the future: What will musicians be playing in the year 2100? Available via [https://www. red-bull.com/int-en/instruments-musicians-will-use-in-the-future](https://www.red-bull.com/int-en/instruments-musicians-will-use-in-the-future), last visited 24 January, 2023.

⁹ Camillieri, Frank (2018). On Habit and Performer Training, *Theatre, Dance and Performance Training*, 9 (1), 36–52.
DOI: 10.1080/19443927.2017.1390494.

through replacing sound generating tools, but the idea or illusion of sound-centred experience can lead to the death of musical instruments.

Two other clips show the importance of extra-musical information and bias amplification in order to mark items as commodities for different purposes. A composition of Liu Mingyuan proves the nurturing of national bias. A simple comparison of versions can lead to questionable results. The CCTV 15 version seems to be more to the point, and it is also full of mannerism. The version of the philharmonic orchestra of Taipei is rather soft and, in some places, full of insecure manners. Both sides may try to imply the observation of traditions in music, yet the entire setting looks like rather pretended. The audience is missing, the gestures are not aimed at anyone, and the musicians got probably stuck in stage 3 (the more the bigger, the bigger the better). However, stereotyped stereotyping ethnomusicologists are fighting to find places of stage 1 and also behave like dealing with stage 1 to those moving through later stages, which makes the entire undertaking somewhat unsuitable. I dare to say that fieldwork is definitely not the future of ethnomusicologists. Moreover, the current glorification of fieldwork might be a sidestep to learn more about this inconvenient fact.

The future is unknown, and therefore, there is a chance to correspond with one's visions. This hope in visions makes the survival. I agree to all who said it earlier: The way is the goal.

VIDEO SOURCES

Composed by Liu Mingyuan, performed by the Chinese National Chamber Orchestra, video available via <https://www.youtube.com/watch?v=nQKRKqntbj4> 17,074 views Mar 11, 2017, last visited 25 January, 2023.

Second video clip of the same composition on YouTube available via https://www.youtube.com/watch?v=FGfewK2e_tU

Conductor of the Chinese Orchestra "Joyful" / Huang Guangyou
137,997 views Feb 25, 2016, 中華國樂團 2015 新年音樂會.

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- Zharova, Alona, Wolfgang Karl Härdle, and Stefan Lessmann (2022). Data-driven Support for Policy and Decision-making in University Research Management: A Case Study from Germany. *European Journal of Operational Research: m5G*; November 12;13:53; DOI: 10.1016/j.ejor.2022.10.016. Available via: <https://www.sciencedirect.com/science/article/pii/S0377221722008013>, last visited 27 January 2023.

BAMBOO SIBLINGS: SOME MOUTH ORGANS IN CONTINENTAL SOUTHEAST ASIA AND CHINA

Liu Xiangkun¹

Abstract

Mouth organs are very popular in continental Southeast Asia and China, even becoming the representative instruments of many people. Generally, they belong to four types: sheng, qeej, naw, and khaen. Similar in construction and function, there are many ideas about their provenance and transmission. However, a closer look at their nuanced difference leads to the argument that these four types are rather independent siblings than ancestors and descendants. Besides morphological taxonomies, for example mentioned by Blench² in 2020, the more distinctive differences lie on the reeds and how the pipes are coupled with them. Different shapes of reed tongues serve various peoples' timbral preferences and functional expectations for their instruments. The manipulation of pipes contributes to each instrument's idiomatic repertoire. Moreover, both are highly affected by locally available natural materials, ranging from cinnabar ore and clam vessels to bees that brew sour honey. When a mouth organ spreads to a place lacking these resources, makers wield their skills and wisdom to adapt their instruments to newer materials while maintaining the timbral preferences.

Keywords

Free reedpipes, Gourd, Natural materials, Sound manipulation, Making of National Instruments

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² Blench, Roger (2020). The History and Distribution of the Free-reed mouth-organ in Southeast Asia. *EurASEAA14 Volume I: Ancient and Living Traditions: Papers from the Fourteenth International Conference of the European Association of Southeast Asian Archaeologists*. Edited by H. Lewis. Oxford: Archaeopress, 94–110.

MATERNAL CALABASH, PATERNAL BAMBOO

Mouth organs are very popular in continental Southeast Asia and China, even becoming the representative instruments of many peoples. In folk tales somehow shared by many a culture, it all began with the bamboo shoots, a metaphor of erection, penetrating the calabash gourd, a symbol of uterus, giving birth to sound, music, or even the people themselves – some people who use their traditional mouth organs do believe in their ancestral genesis inside a gourd.³ For example, the legend of Calabash Brothers is well-known among the Chinese, which has even been adopted into animated series in 1986 (Figure 1) and constantly gaining new audience to this day.⁴

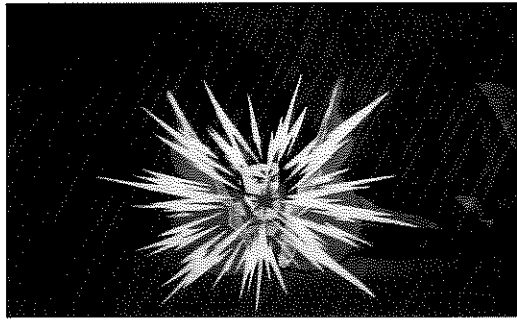


Figure 1: Birth of a Calabash brother as depicted in the animated series.

Therefore, playing the mouth organ is conventionally associated with ancestral worship; either the mouth organ's timbre creates a halo around the ritual ensemble that reminds the attendees of their blood ties to each other and their ancestors, or blowing air into the mouth organ to produce tones becomes an analogy for a channeller invoking the ancestors' souls and speaking in their voices, or more directly, the mouth organ's repertoire narrates the ancestral tales, non-verbally yet almost literally understood by every insider.

A large portion of extant mouth organs still uses calabash vessels, both as the wind chest or as the resonator usually placed on the longest pipe to enhance the lowest note. These instruments are popular over vast

³ Proschan, Frank (2001). Peoples of the Gourd: Imagined Ethnicities in Highland Southeast Asia. *The Journal of Asian Studies*, 60 (4): 999–1032.

⁴ Ye Tan and Zhu Yun (2012). *Historical Dictionary of Chinese Cinema*. Washington: Rowman & Littlefield, 15.

geographical expanses from Southwest China along Bangladesh and the Indochina Peninsula, to as far as Borneo, known by countless different names in dozens of nations, peoples, and ethnic groups. However, their seeming similarity almost stops at the calabash shells alone; it does not extend to other aspects like the construction of their reeds, pipes, and embouchures.

Indeed, many other mouth organs don't use calabash vessels anymore, but their makers still preserve the memories when calabash was present.

In the *Rites of Zhou Dynasty*⁵, an ancient Chinese scripture no later than the second century BC, *sheng* was categorised as 匏, literally the gourd. Qeej was played by Miao, Mien, Bourau and other peoples occasionally used calabash vessels as the wind chest until less than a century ago, and many makers still make those ones for their own use (Figure 2). As for khaen in Northern Indochina Peninsula, although no evidence currently indicates that calabash vessels have been used as the wind chest in the history, contemporary makers find it plausible and readily experiment with it. Possibly due to the large number of pipes compared with other mouth organs, usually 12 to 16 pipes instead of only 5 to 7, local calabash vessels are often too small to hold all of them; so, some instrument makers in Laos turned to another very common fruit with extra hard vessel – the coconut. According to them, coconut vessels make a better wind chest for the khaen, there seems no need to hollow out a solid block of wood, less likely to crack and leak air, and everything is also less heavy.

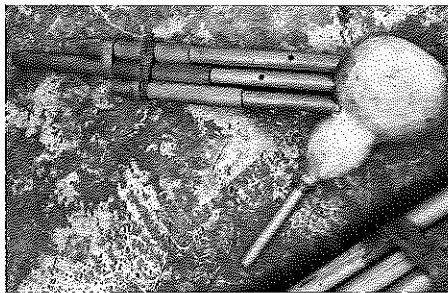


Figure 2: Qeej with calabash vessel made by Luo Yongzheng in Nayong County, Guizhou.⁶

⁵ Also 周礼

⁶ All photos were taken by the author unless otherwise indicated.

Similar in construction and function, there are many ideas about mouth organs' provenance and transmission. Yet a closer look at their nuanced differences leads to the argument that these instruments are rather independent siblings than ancestors and descendants. As mentioned above, since the calabash wind chest, the maternal gene has become recessive, the bamboo pipes, the paternal gene becomes dominant as the most obvious feature of all mouth organs, and hence my title, bamboo siblings. Moreover, such folklore prevails in many people that legendary siblings were turned into the bamboo pipes of their mouth organs, dancing in a circle around their mother – the gourd vessel.⁷

OPEN PIPES FOR MORE TONES

In a contemporary overview of numerous mouth organs, a very extensive and meaningful morphological taxonomy has been proposed by Blench, based on how the pipes are spaced: in circular arrays or in straight lines, parallel to each other or at divergent angles.⁸ However, from a more musical point of view, the more distinctive differences of diverse mouth organs lie on the reeds and how the pipes are coupled with them. In this aspect, this paper discusses extant mouth organs in four types: sheng-type, qeej-type, naw-type, and khaen-type.

Chinese sheng and other East Asian mouth organs, as well as those on Borneo Island have their pipes' bottom ends enclosed inside the wind chest. Therefore, they must be stopped pipes. On the contrary, qeej and khaen have their pipes completely passing through the wind chest, so both ends of the pipes are naturally open. However, in recent years,

⁷ Duan Longshan (2007). Gourd Mouth Organ of the Bulang People in Shidian. *National Music*, 1:34. [段龙山 (2007). 施甸布朗族葫芦笙. 民族音乐, 第1期, 34]; Obayashi, Taryo (1966). Anthropogonic Myths of the Wa in Northern Indo-China. *Hitotsubashi Journal of Social Studies*, 3, (1): 43-66; Liu Jirong (1997). The Production of Gourd Mouth Organ of the Lahu People and Its Folk Inheritance. *Journal of Yunnan Minzu University (Philosophy and Social Sciences Edition)*, 2: 49. [刘劲荣 (1997). 拉祜族葫芦笙的制作及其在民间的传承. 云南民族学院学报(哲学社会科学版), 第2期, 49.]

⁸ Blench, Roger (2020). The History and Distribution of the Free-reed mouth-organ in Southeast Asia. *EurASEAA14 Volume I: Ancient and Living Traditions: Papers from the Fourteenth International Conference of the European Association of Southeast Asian Archaeologists*. Edited by H. Lewis. Oxford: Archaeopress, 96.

some Hmong instrument makers have fostered a young tradition – in order to play the qeej in increasingly loud environment or alongside louder electronic music, they block the bottom ends of the pipes with rubbers that carefully form a conical cavity right up to the reed window, resulting in significantly louder volume and better directivity upwards. To further enhance these effects, resonance tubes are also added on the pipes' upper ends, which in turn introduce another new feature to old traditional qeej: vents are drilled on these additional resonance tubes in order to compensate for the elongated pipe lengths, so that the pitches would not get lower (Figure 3). Moreover, the shift towards stopped pipes and directional resonators has also changed qeej playing and dancing gestures. On older qeej with open pipes, sound emits from both ends of each pipe; so in order to prevent the bottom ends from being hindered by the player's torso, one has to bend over and keep the pipes nearly horizontal on either side of his body, a low-profile and laborious gesture similar to sweeping the floor – which exactly suits the funeral rituals where traditional qeej is almost exclusively used: the gently muffled timbre is likened to the mourners' low murmurs of scriptures that sweep the spiritual paths and guide the soul of the dead. But many qeej is so heavy that the player would naturally want to lean it against his belly. With the bottom ends of pipes closed, that playing gesture is finally possible without compromising the sound. Therefore, players adopt a more upright position that weakens the connotation of sweeping the path, in combination with new instruments' brighter timbre unlike mourning murmurs (Figure 4). Evidently, the identity of qeej has been altered since the pipes' bottom ends become closed.

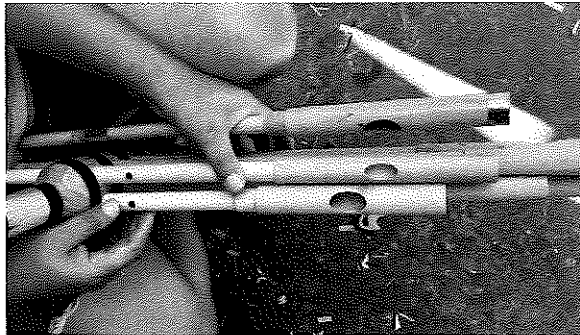


Figure 3: Innovative lusheng in Bijie, Guizhou.

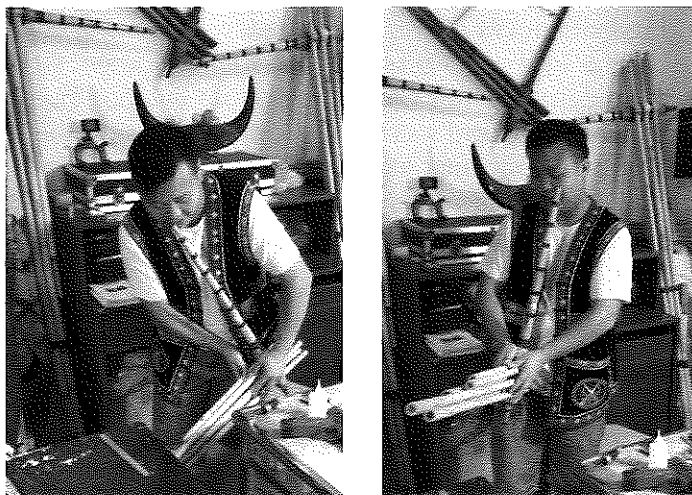


Figure 4: Playing gestures of traditional qeej with open pipes (left) and innovative qeej with closed pipes (right), demonstrated by Xiong Yongzhong, Weixin County, Yunnan.

In this regard, naw and similar gourd mouth organs used by Lahu, Lisu, Akha and other people exemplify a very clever method of playing two notes on one pipe: the pipe's bottom end slightly emerges through the calabash vessel, allowing the right thumb to stop the bottom hole and turning the naturally open pipe into a stopped pipe, thus creating another distinct note lowered by an interval ranging from around one 100 cents to over 300 cents. The fingering of the bottom holes not only widens the register of the mouth organ, but also facilitates several figures characteristic to the instrument's distinctive repertoire, including portamento, vibrato, and trill, which are otherwise impossible to play on pipes that can only produce one note each (Figure 5). Therefore, different local features of naw-type mouth organs depend greatly on how many pipes emerge under the calabash, how the bottom holes are fingered, and by what interval the pitch is lowered when fingered (Figure 6). Reasonably, instrument makers devote long hours to modifying both the reed and the pipe in order to optimise this bistability; that is, both tones are satisfactorily stable in both pitches and timbres. Hereby it is worth noting that alternate open and stopped pipes are common not only in mouth organs, but also in other types of wind instruments including side-blown flutes, duct flutes, free reedpipes, single reedpipes, and some natural labrosones. Since open pipes and stopped pipes are distinguished in the 2011 *Revision of the Hornbostel–Sachs Classification of Musical Instruments* by the MIMO

Consortium on 8 July 2011⁹, it is possibly necessary to propose new categories to logically classify such instruments.

石蚌蒸肉



Figure 5: Lipo musicians create many symbols to notate the distinctive figures by fingering the bottom holes.¹⁰

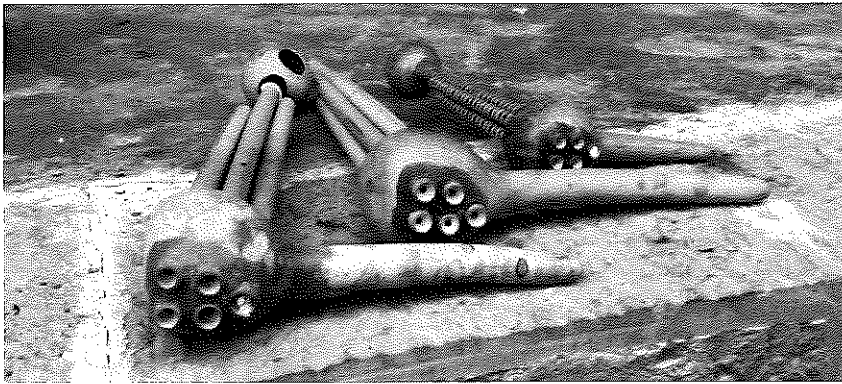


Figure 6: Some pipes are constantly stopped to facilitate modulation, by Taliu people, Yongsheng County, Yunnan.

⁹ MIMO Consortium (2011). *MIMO H-S Revision of the Hornbostel-Sachs Classification of Musical Instruments on 8 July*. Accessible via: <https://mimo-international.com/documents/Hornbostel%20Sachs.pdf>, last accessed 3 October, 2023.

¹⁰ Guo Zilin (2020). *Playing Techniques of Gourd Mouth Organ of Yi People in Yao'an*. Yao'an: Ethnic & Religious Affairs Bureau of Yao'an County, 128. [郭自林 (2020). 姚安彝族葫芦笙演奏技巧. 姚安县民族宗教事务局, 128.]

'VERSATILE TONGUES LIKE REEDS'

A Chinese idiom originated in *Classic of Poetry*¹¹ goes¹² “versatile tongues like reeds”, which illustrates the crucial role of the reed tongues as well as the earlier connection of mouth organs to mouth harps¹³ – the free reeds themselves, not coupled with pipes.¹⁴ The choice of material to make reeds concerns cultural traditions more than acoustic properties. The Hmong people, highly skilled in forging brassware, utilise their leftover brass fragments to make reeds; while the Achang people, wealthy silversmiths by inheritance, forge their silver reeds as an emblem of their ethnic identity, although they do admit that silver reeds are softer and less elastic than brass reeds, unable to play louder. Also, the material used to weight the reed tongue in order to tune it exhibits interesting diversity in particular. The reed tongue is very thin and delicate, so the makers definitely look for materials with greater density, so that a tiny bit of which will weigh significantly and it will fit on the tip of the reed tongue. Metals are quite dense, but they are often too hard to cut into tiny bits, until the lead solder became available to Lahu and Lisu naw makers (Figure 7). Few natural materials are denser than the cinnabar ore, so ancient Chinese *sheng* makers grind it finely, disperse the heavy powder in molten rosin, and apply the resulting vermilion paste on the tip of the reed tongue. To one’s surprise, some dust blown over the reed tongue counter-intuitively improves its articulation, especially to produce high notes, a trick widely known to mouth organ makers of various ethnicities, and their choices of dust are also hugely diverse from place to place, from people to people: minerals like limestone and malachite, debris like charcoal and potash, or animal by-products like bones and vessels. Finally, the reed needs to be enclosed in the reed window carved out on the pipe, and the individual pipes to be sealed airtight into the wind chest. Almost all makers use beeswax as their sealant, but the particular recipe also shows regional diversity and personal ingenuity. Beeswax is prone to

¹¹ Also 诗经

¹² In original 巧舌如簧

¹³ Another term for mouth drum, Jew’s harp, or Jaw’s harp although this free reed instrument is neither a harp nor a drum.

¹⁴ Liu Yi (2020). Investigation of Music Cultures in the “Classic of Poetry”. *Jingu Wenchuang*, 22: 73. [刘一 (2020). 《诗经》音乐文化探究. 今古文创, 第22期, 73.]

break and not sticky enough by itself, so several sorts of additives improve its properties: rosin adds to stickiness, vegetable oil prevents cracks, and other insects' wax lowers the melting point to suit local weather – that may come from a type of ants living inside decaying trunks, or exotic bees that live underground and brew sour honey. The unsightly black goo is in fact an epitome of localised knowledge that regards the environmental ecosystem as a wondrous treasury, where nature 'will fully supply every need of yours out of the riches'.

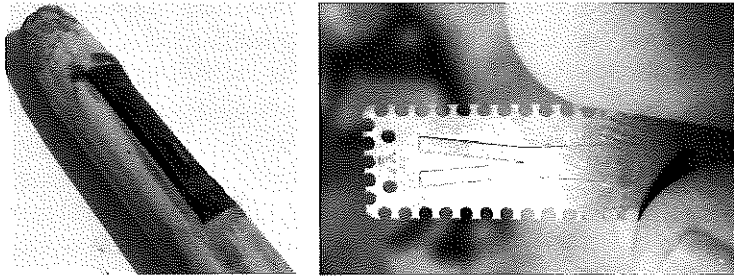


Figure 7 (left): Reed tongue weighted with beeswax and lead solder by Li Xiaolin in Linxiang Town, Yunnan; Figure 8 (right): Double-action reed tongue by Luo Houbing in Xichang City, Sichuan.

The shape of reed tongue is quite conservative in most mouth organs: reeds made of bamboo or cane always have a rectangular tongue, while metal reeds usually have a sharp tongue. The reason is that bamboo and cane have vertical fibres that make it difficult to cut pointy slopes, while a sharp tip facilitates the start of oscillation on dense metal reeds. One prominent exception is Chinese *sheng*'s rectangular reed tongue made of brass, because it has used bamboo reeds for millennia which only recently became interchangeable with brass ones. Still, there are Hmong experimentalists trying to modify their qeej reed tongues. For example, some makers combine the traits of both tongue shapes to create a tongue with parallel sides and a pointy tip, like the shape of a knife. Another maker even uses laser cutter to create Y-shaped reed tongues that have two rectangular tips and one sharp tip in between, or 'double-action' tongues in his own words, that also double the volume (Figure 8).

Like several people who play mouth organs, their instruments are also bilingual – literally, pipes with two tongues. The shortest pipe on the qeej is regarded as the eldest sibling among the six, as it was the first pipe to be made that determined the tuning of the whole qeej. It is also the thickest pipe with loudest volume; therefore, it has often been fitted with two reeds on older traditional qeej. The maker fine-tunes the two

reeds as identical as possible, until they sound in perfect unison and produce no beats when either blown or inhaled through. (Figure 9) This tradition has been innovatively modified by new generations of makers eager to play more than six notes on their qeej: inspired by the harmonica, they fit two reeds also on other pipes, but each pair of reeds is configured differently to produce different notes when exhaled or inhaled, or switched by some mechanics.¹⁵ Some khaen also have double-tongued pipes, but contrary to Hmong timbral aesthetics, Lao makers intentionally adjust the two reeds to produce beating effects, only then the tone is considered “infused with life”, as in other music cultures of Southeast Asia.¹⁶ (Figure 10) Sadly, while there are bilingual pipes, some bamboo siblings are dumb. For nearly a millennium, East Asian *sheng* has had pipes without reeds merely as placeholders so that all the pipes could be tightly fixed as a bundle, sometimes known as 亡竹 “defunct bamboo”, that made up to a quarter of the total number of pipes. Historical sources indicate these pipes were once upon a time “alive”, fitted with reeds able to produce unique pitches. However, these pitches were so rarely used in later repertoire that the makers would not bother to make reeds for them.¹⁷ Qeej-type mouth organs of the Kam people called *lung* usually have only three reeds per six pipes, or two reeds per four pipes, alongside an individual huge reedpipe that plays the fundamental note of the ensemble. (Figure 11) These instruments blur the boundaries between mouth organs and individual reedpipes, which could be relict species that testify the transition.¹⁸

¹⁵ Dong Dangan (1979). Reformation of Miao People’s Lusheng. *Musical Instrument Magazine*, 1: 1-4. [东丹干 (1979). 苗族芦笙的改革. 乐器科技, 第 1 期, 1-4.]

¹⁶ Davies, Stephen (2007). Balinese Aesthetics. *The Journal of Aesthetics and Art Criticism*, 65(1): 22.

¹⁷ Hayashi, Kenzō (1954). Two Investigations of Sheng Temperaments – The Systems and Harmonies of Sheng with 17 Pipes. *The Journal of Nara Gakugei University*, 3 (3): 3. [林謙三 [Lin Qiansan] (1954). 笙律二考 —17 管笙の系統と和声について—. 奈良学芸大学紀要, 第 3 卷, 第 3 号, 3.]

¹⁸ Blench, Roger (2020). The History and Distribution of the Free-reed mouth-organ in Southeast Asia. *EurASEAA14 Volume I: Ancient and Living Traditions: Papers from the Fourteenth International Conference of the European Association of Southeast Asian Archaeologists*. Edited by H. Lewis. Oxford: Archaeopress, 108-109.

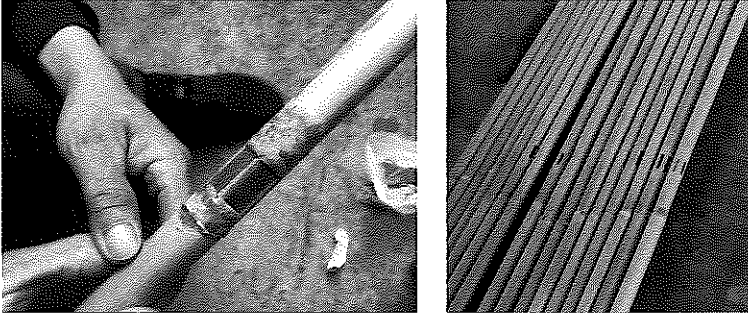


Figure 9 (left): A qeej pipe with two reeds, from Yanbian County, Sichuan; Figure 10 (right): Pipes to be assembled into a khaen, some with two reed windows, by Sompath in Vientiane.

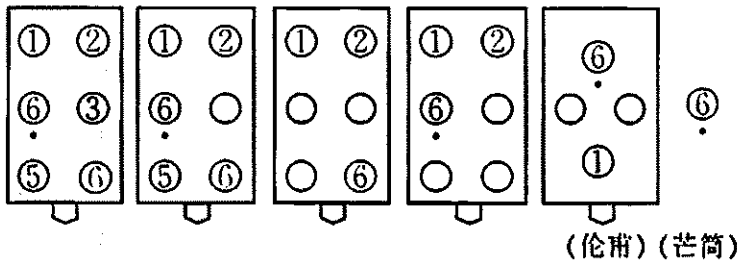


Figure 11: Reed configuration on Kam mouth organs.¹⁹

THE TRUE TONE HOLES OTHER THAN FINGER HOLES

Mouth organs have long been mistakenly classified as “sets of free reeds” (412.132) instead of free reedpipes (422.3). Although the 2011 *Revision* correctly notes “in instruments like the Chinese *sheng* the fingerholes do not serve to modify the pitch and are therefore not equivalent to the fingerholes of other pipes”,²⁰ it fails to recognise the genuine tone holes that “must be the dominant partner in determining the

¹⁹ Liu Yan (2012). *Studies of Lusheng Music Cultures and Their Social Functions in Guizhou*. Guizhou Minzu University Master Thesis. Unpubl. mat., 18. [刘燕 (2012). 贵州芦笙音乐文化及其社会功能研究. 贵州民族大学硕士学位论文.]

²⁰ MIMO Consortium (2011). *MIMO H-S Revision of the Hornbostel-Sachs Classification of Musical Instruments on 8 July*. Accessible via: <https://mimo-international.com/documents/Hornbostel%20Sachs.pdf>, last accessed 3 October, 2023.

frequency of vibration, as is the case for instruments with fingerholes” – which are the vents near the far end of the pipes. Vents actually determine how the vibration of the reed is coupled with that of the air column inside the pipe, exactly like finger holes do.

More types of mouth organs have vents than those that don't. The qeej-type conventionally has no vents, so to tune it the maker has to constantly shorten the pipes and thin the reeds, until the two agree in a best state of coupling to achieve both the desired pitch and timbre at once. Predictably, one is not always able to kill two birds with one stone, and the shortening and thinning process is not reversible, so one could end up ruining both the pipe and the reed before finding the sweet spot. Hence, as mentioned above, vents have been introduced to innovative qeej together with the addition of resonance tubes, which make it a lot easier to manipulate both pitches and timbres. On naw-type mouth organs, the longest, lowest pipe rarely have a vent, because a detachable resonator is often added on top of it, so no wind should be let out until it enters the terminal resonator. The other four pipes have vents that can be the local features for different identities: some have one long rectangular vent, some have round holes, and some even have a series of triangular vents. (Figure 12) These vents can also be partially or completely resealed to switch between several different notes on each pipe; in combination with fingered bottom holes, one instrument will readily play in up to eight modes that can both manifest local identities or sometimes imitate other regional or ethnic musical styles usually as a means of social inclusion among different peoples. So, more inter-ethnic musical exchanges lead to more tunable vents. On the contrary, in regions less encountered with outsiders of different identities, modulation is hardly needed, and so are vents. Such cases can be found in Sudian Lisu Autonomous Town, a quite remote but self-contained Lisu community, whose mouth organs have no vents whatsoever, an exception in the naw-type, and also one with surprisingly soft volume.

On sheng-type and khaen-type mouth organs, the vent issues are simpler: The former always have one vent on each sounding pipe, and the latter always have two, both above and below the reed window, thus making its pipes constantly open; even if one stopped the bottom holes, the wind is released from the lower vents. This is due to khaen-type's irregular layout of notes in contrast to regularly decreasing pipe lengths. As a result, the sounding lengths must diverge vastly from the pipes' apparent lengths, and two vents further help to shorten the

sounding length without compromising the wing-like contour of descending pipes. The long rectangular vents are equivalent to larger cross-sectional area on both ends of the pipes, contributing to a more resonant timbre and louder volume.

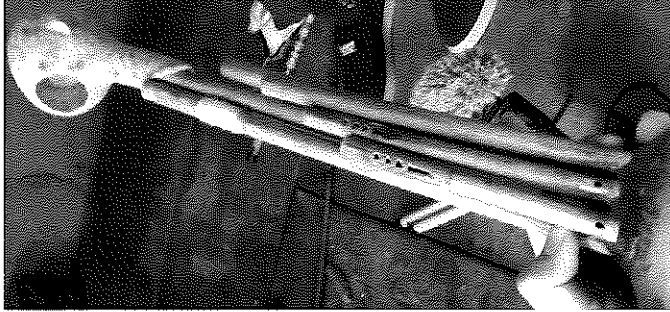


Figure 12. Triangular vents on a Taliu mouth organ, by Taliu people, Yongsheng County, Yunnan.

Type	Pipes' bottom ends	Material of reeds	Reed tongue shape	Reeds per pipe	Tones per pipe	Vents per pipe
naw	Open/closed	Bamboo	Rectangular	1	2, 1	1, 0
qeej	Open or closed	Metal	Sharp	1, 2, 0	1, 0	0, 1
sheng	Closed	Bamboo or Metal	Rectangular	1, 0	1, 0	1
khaen	Open	Metal	Sharp	1, 2	1	2

Figure 13. An overview of diverse constructional traits of the four types of mouth organs.

EPILOGUE: ORPHANED SIBLINGS

With each breath of their peoples, bamboo siblings dance around their calabash mother, in celebration of ancestral birth giving of ethnic groups that in turn foster new generations of bamboo siblings. Yet in China, where the Hmong people are called Miao and their qeej Sini-cised as lusheng, the central government has ordered the 'Reformation of National Instruments' since the beginning of its reign, regardless of ethnic diversity and identities. Aiming for 'orchestra of national instruments', they voluntarily invite cultural colonisation of Western music into traditional instruments, and absurdly turn themselves into spectacles of exoticism that desperately yearn to entertain their leaders. Up to a dozen pipes are stuffed into one lusheng, painted in gold, played by someone in Tang suit, in front of decorative *pipa* hung on the wall.

Whose lusheng is that? Here we have a poor bamboo sibling orphaned by having too many guardians. Another lusheng is so obese that it has to sit in a wheelchair, in a forgotten sickroom overseen by a greasy red icon above. (Figure 14) The Miao people's lusheng is suffering, and the Han Chinese *sheng* is equally ill at ease. *Bandoneon*-like buttons blister its wind chest; pipes proliferate to thirty-six in number and stiffen into steel; and without help of a bellow or any other mechanism, even the strongest lungs are winded when trying to blow this mutant stunt that is hardly recognisable as a bamboo sibling anymore. (Figure 15) According to Timothy Rice, now that we have innovative instruments "individually created and experienced", (although those individuals have been under political surveillance and bribery,) it's academically interesting to continue observing whether they are "socially maintained", and how they will be "historically constructed",²¹ or rather, historically ridiculed.

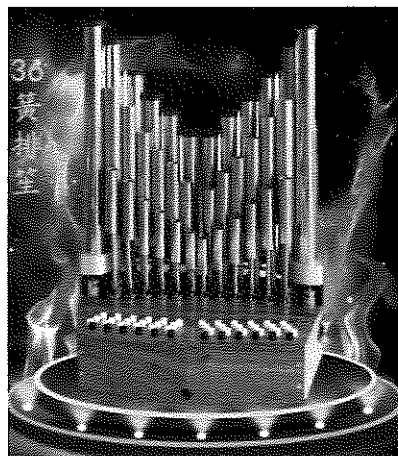
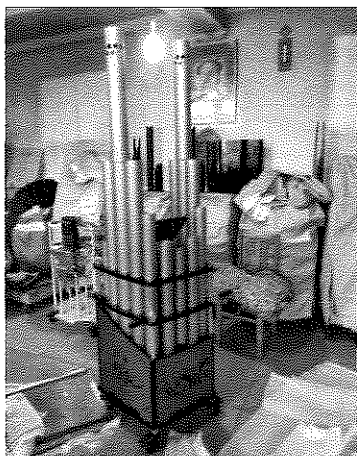


Figure 14(left): Contrabass lusheng in Kaili University, Guizhou; Figure 15 (right): Tenor sheng by Leiming Instruments Company, Tianjin.

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BREAKING FREE: A NEW CONVERSATION FOR VIOLA AND ZHONGRUAN

Lok, Sulwyn and Andrew Filmer¹

Abstract

This project brings together a performer-researcher with a performer-composer for a composition that explores not just the two instruments chosen for performance, but also a wide range of Southeast Asian traditional instruments and associated traditions, from which the music gains inspiration. The work will be scored for viola and zhongruan, with the project stemming from the 2020 work *Conversations* that brought together 21 musicians across three continents, of Western and Burmese musical traditions. The new work aims to take yet a new step in seeing how the broader soundscapes of Southeast Asia, including the angklung, gamelan, khene, dan bau, and Hindustani violin, can influence and even be distilled – refined – into the viola, consulting practitioners of these instruments where possible. The alternative tuning technique of scordatura is likely to be centre stage in the exploration of tonal colours and sympathetic resonances those instruments embody, along with other extended techniques. This process will encompass philosophical questions of appropriation vis-a-vis originality and the nature of collaboration, seeking insight into how the decision to be inspired by another instrument involves both refining and simplification alongside preservation, and the discovery of old things anew within unexpected confluences of diverse musical traditions.

Keywords

Local musics, Viola, Zhongruan, Performer-researcher, Performer-composer

¹ Dr. Andrew Filmer is currently working at Sunway University, Malaysia. He obtained his PhD at Otago University, New Zealand, worked at various institutions and was a long-time editor of the 'Journal of the International Viola Society'. More about him can be found here: <https://andrewfilmer.com/about-2/>; Lok Sulwyn is a media artist and composer. He is based in Singapore and the US. Their joint features are a big love for music and their first language English. More about Lok Sulwyn can be found on his webpage: <https://www.sulwyn-lok.com/>.

INTRODUCTION

The impetus of this project of a “new conversation” is an ‘old’ conversation: a composition by composer Sulwyn Lok for the Music Society of Myanmar in 2020 titled *Conversations*. The imposition or restriction of movement was transformed to the exposition of an opportunity to collaborate. The performance in a virtual/online setting allowed not only for an increased number of performers, but also a combination of traditional Myanmar instruments with Western classical ones. Improvisational segments were possible, with ‘conversations’ through the editing process, even though each contributor was essentially recording in monologue. When violist Andrew Filmer was invited as a Festival Artist for the first International Viola Congress in Asia, he took this as a sign from above to not only showcase a Southeast Asian composer, but to continue the previous ‘conversation’ of regional traditional instruments and the viola.

This exploration led to *Breaking Free*, a work for viola and zhongruan or guitar, in which the composer and the researcher-performer explored processes and avenues of incorporating local cultures both from compositional approaches as well as technical explorations of the viola through ‘mistuning’ the strings, in a technique known as *scordatura*. Through this adventure, the authors were considered how to highlight local traditions while navigating the concept of “appropriation” – to what extent a short work can encapsulate the root word of this, in being “appropriate” in embodying the spirit of these musics. This paper will illustrate the creative decision-making process, the journey of influences, the final creation, and close the discussion – the conversation – on a return to this question of how appropriate our footsteps have been.

PROCESS AND INFLUENCES

The composer drew on several specific influences: Chen Yi’s *Ba Ban* from 1999 brought the plucking style of the Chinese pipa and guzheng – which would be a model starting point for the creative process of incorporating timbres and techniques of regional instruments into *Breaking Free*. Chen Yi also produced *Ji Dong Nuo*, named after, and directly quoting, a Yao folk tune as a source of pitch material, “while keeping... the characteristics of the style of Chinese traditional instrumental performance.” Tan Dun’s 2015 double bass concerto *Wolf Totem* was influential in its adaptation of ancient Mongolian morin khuur

playing – with the apparent inclusion of the Mongolian folk song Gada Meiren (also known as Gada Meilin).

The use of musical quotations, of course, is a time-honoured tradition of art music in various parts of the world – but how to achieve a larger embodiment of culture beyond the technical components of pitch, rhythm or instrumental technique was where these works provided a bedrock for the creative compositional process. For *Breaking Free*, the idea of *Jinda Manchang* from a Chinese opera is used in the later part of the work, which is a nod to Chen Yi, who uses another Chinese opera device, *Ji Ji Feng*, in her Percussion Concerto for Evelyn Glennie. The Sundanese folk song, *Sekar Manis*, while not directly quoted, loosely influenced Lok's choice of scale and melodic style.

Fellow Singaporean composer Chen Zhangyi provided a different perspective in his *Concerto for Erhu, Zhongruan and Percussion* – for which Lok was the zhongruan soloist. While there was engagement in discussion on cultural history and context, the compositional approach was to bring out the individual personalities of the performers, which became a constituent factor in this current project.

Andrew Filmer as researcher-performer provided a basis of theoretical knowledge of scordatura from over a decade of expertise in this area. Previous projects using the technique included work with two living composers, one being the previously mentioned Chen Zhangyi for the Cambridge Festival in 2021. Filmer's role involved a certain degree of self-monitoring, in allowing past knowledge to be useful while not being limiting, and to be open to explorations of new tuning options and techniques. Here the incorporation of a cultural element was new; however, the idea of using tuning for the purpose of connection to other instruments was not: his previous research and publications on works of Bach and Telemann were to approximate the aesthetic effects of the viola da gamba and the violetta.

The collaborative process involved having two instruments, one in regular tuning and the other in the various scordatura experiments, and recording experiments on both to have an initial idea of aesthetic possibilities. As conversations between the composer and the researcher-performer narrowed down likely eventual tuning decisions, these experiments and recordings were focused on a single instrument, to ensure the tuning itself was producing the observed effects, rather than any timbral differences between the two instruments.

FINDINGS:

THE COMPOSITION AND THE PERFORMER

The initial plan to have two movements had the intent of utilizing sympathetic resonances of the Lao mouth organ called the *khene* or *khaen*. This involved tuning in octaves, lowering the tension of the top strings to produce a more subdued timbre from those specific strings, while in contrast tuning the lowest string upwards to increase the overall projection of the instrument.

The progression of the project led the work to be divided into two stand-alone pieces, and the specific connection to the khene continues to be developed in the second piece. For *Breaking Free*, the same detuning – or “de-tensioning”, perhaps – was used to explore its effect on glides or slides. The use of these in *meends* of South Asian music traditions was a particular interest because of the inclusion of the violin and viola in Carnatic and Hindustani ensembles. This provided quite a number of layers in the idea of crossing musical frontiers, with the Western instrument being long incorporated into these Asian musical environments. The nature of this incorporation and its adaptations became a source of inspiration for this project. The scordatura was formulated keeping in mind how other traditions like that of South Asian violins used tunings in octaves.

The tuning we settled on was that of Fs and Ds: the top string tuned significantly downwards to F, the second string remaining at D, the G string down a tone, and the C string upwards a tone – the maximum recommended tension. Sympathetic vibrations were significant, which was not unexpected based on previous projects. What was unexpected was the effects on glides, which had not been previously explored.

When playing high in the register of the instrument, lowering the tuning of a string increases challenges to intonation since the fingers now have to climb higher on the fingerboard. However, this elevated difficulty is balanced by the considerable ease of sliding on a string with lowered tension, similar to how some folk fiddling involves lower bridges.

The following is an example that involves these glides:



Figure 1: Glides in the viola part, on a top string tuned down to F. Audio available online as Excerpt 2 (note: excerpt begins 12 measures earlier). It is worth noting that these are not specifically to mirror the violin or viola in Hindustani ensembles, but rather a certain pan-Asian application of these pitch bends.

More important than technical facility was the aesthetic outcome: there was the opportunity for a different expressive ability with the accents using bow speed rather than bow pressure, similar to the use of gut strings in historically informed performance practice of Western art music. Changes of bow speed during the slides also provided wider dynamic contrasts, which were useful outcomes in a section that had a certain compositionally energetic intent.

These pan-Asian slides had even wider use at the start of the composition, as seen in this second example:



Figure 2: Opening of Breaking Free, viola part, featuring “pan-Asian” slides. Audio available online as Excerpt 1.

Here it is the third string, tuned down a tone, that is in use, and it was observed that there was a secondary effect of the quick notes sounding somewhat blurred or veiled, that was similar to ornamentation in singing in a traditional Sundanese context.

The overall changes in the instrument, while not specifically emulating any other instruments here, certainly brings it closer to the *saw sam sai* of Thailand, or *rebab* of Indonesia – and just as importantly, produces a closer conversation with its musical partner here, the zhongruan.

Finally, the application of increased tension of the last string – from a C up to a D – produced a significant contrast in timbral quality, and differing reaction to bow pressure. This final example has particular effects in the use of accents:



Figure 3: Use of increased tension on the lowest string of the viola. Audio from rehearsal letter H available online as Excerpt 2.

The lower string accents have significant “bite” from bow pressure – or more specifically the use of pronation in the right hand. This then contrasts with the use of bow speed for the previously discussed accents on de-tuned strings.

In the composition process, Lok, not just as composer, but as zhongruan performer, focused first on the viola. For him to better visualize the viola's fingerings and to facilitate experiments, he tuned the zhongruan to a parallel tuning of Bb G Bb G (highest to lowest string). The original tuning of the zhongruan is D G D G, so here the first and third strings are tuned downwards by a major third. In doing so, he realized there were novel and interesting timbral effects with the zhongruan, and the newly detuned strings responded considerably differently than would be with regular tuning. These detuned strings become hol-lower and almost gong-like, which then inspired the opening. The dissonances in the opening chord become all the more like a gong having many harmonics sounding at once when struck. He decided to keep this new tuning for the zhongruan in *Breaking Free*. Some chord fingerings for the zhongruan are influenced from this too - he would be more careful to not go too far down the fretboard, as the new string tunings result in poorer intonation, and even “unacceptable” intonation from the 6th fret.

REFLECTIONS AND RECOMMENDATIONS

This project provided us several arenas of findings including the dimensions of collaboration in a virtual space, the development of score-writing techniques for unconventional tunings, and the scordatura resonances in the development of viola technique and composition for the instrument.

For the purposes of this article, it would be worthwhile to focus on the cultural aspects of incorporating musical influences from the region, both from a compositional viewpoint as well as from the angle of the viola itself, it being both a foreign instrument as well as one already situated within local traditions.

Compositionally, the boundaries of cultural implication have been amorphous for centuries. Barbara Hanning wrote that “the Polish elements in Chopin... were for the most part exotic accessories to cosmopolitan styles. Nationalism was not really an issue in the music.”² And yet Schumann in 1837 noted that if the Czar of Russia “knew what a dangerous enemy threatened him in Chopin’s works, in the simple tunes of his mazurkas, he would forbid this music. Chopin’s works are cannons buried in flowers.”³

Donald Maurice and Claudine Bigelow provided intriguing insights on Béla Bartók in their recording project *Voices from the Past* on Tantara Records in 2013. The composer here had a wide range of compositional approaches, seen clearly when paired with the field recordings of folk tunes he made on wax cylinders, from practically direct transcriptions to ones where it would be difficult to pinpoint any melodic connection.

Breaking Free did not have quite the range of Bartók’s adventures in relating to external musical elements; however, it did traverse a range of its own, from a direct connection to the khene still being explored, to the more pan-Asian influences seen in the excerpts discussed earlier. In this creative endeavour, the composer reflects that the process of synthesis is an individualized one, with influences being as much from personal experiences with musicians throughout the region as well as

² Barbara Hanning (1998). *Concise History of Western Music*, New York: W. W. Norton, 445.

³ Mark Bonds (2004). *A Brief History of Music in Western Culture*, New Jersey: Pearson Education, 270.

the violist who would be partnering in the development and performance of the work. Lok also notes that his experience with these musicians has always been about new possibilities in new compositions, rather than particular restrictions of traditions – in a sense the instruments may be traditional, but the tradition is of *making* music rather than replicating it.

As for the violist, one conscious element – having briefly performed with Hindustani ensembles in the past – is that of the playing style of South Asian violins and violas, with the performer seated and the instrument pointing downwards and resting either on a stand or on a part of the ankle. Awareness of this is important to enable an understanding how the viola and the violist respond differently than the usual position a Western classical instrumentalist employs. The barrier of contrasting idiomatic performance postures both informs how a particular timbre is produced, and perhaps how to not overly try to recreate a particular sound in consideration of how different the context has become. This is where wider amalgamations or synthesis of pan-Asian palettes not only protects us from any idea of misappropriation, but remains truer to any one influence within the wider matrix of music and discovery.

The webpage <https://www.sulwyn-lok.com/breakingfree> (also available via QR code, below) features the excerpts mentioned within this paper, and is also intended to be updated as this work is performed/recorded.



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THE MANDOHARP OF AMARADHEVA AND ITS USE IN THE 1980s AND 1990s

Chinthaka P. Meddegoda¹

Abstract

The discrimination of instrumental sound in the evaluation and appreciation of Amaradheva's (born in 1927, passed away in 2016) performances lead to a big gap between praising vocal achievements and using his unique musical instrument that he created out of two, as he stated.

This paper is to analyse this instrumental creation and the way how he used it. The reasons for its decline will also play a role. He could have used another musical instrument, the Indian svarmandal, but he preferred his own creation. The sound he tried to produce should sound well in the context of his singing. His popularity was based on his deep knowledge of Indian classical music, mainly light classical music. As a violinist, he tried to idealize a specific sound to be fitting in his time, voice, and social environment.

For this small research, I consult his as an inheritor, read evaluations given in the literature and other shapes of documents, and I analyse the musical ergology of the instrument. It can be found that all parts of the instrument play an important role in achieving the desired sound. This study can give an insight into media reflections on musical instruments in Sri Lanka.

Keywords

Sri Lanka, Mandoharp, Amaradheva, Manipulation of sound, Music shows

INTRODUCTION

Mandoharp is a music instrument created according to a concept of a renowned musician in Sri Lanka. He is Amaradheva who learned Hindustani music in Lucknow from Vishnu Govinda Jog, a pioneering violinist in his time. Amaradheva has been improving his vocal skills though he preferred learning violin as his main area of expertise. He has been flourished as a popular singer in Sri Lanka since 1950s. He preferred to play mandolin while composing and singing in casual

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settings. He felt playing mandolin is much convenient for him as it is tuned as similar to the tuning of Hindustani violin of his tradition. Therefore, he thought about a new music instrument that fits to his look and music style so that he can play while singing in public performances as well. That new instrument came out to be the mandoharp which is the main area of my focus in this presentation.

QUESTIONS

In relation to mandoharp and its creators, I attempted to find answers to the following questions:

1. How was this instrument created?
2. Why Amaradheva preferred playing mandoharp while singing?
3. Why he did not promote the instrument or recommended it to his followers?

There are some writings about Amaradheva's biography and his contribution as a singer and a composer. However, it can be observed that written accounts on mandoharp and its use are hardly found. There is a five minutes documentary about the mandoharp created by Rasanjana Weerasingha and he has shared it on YouTube.

HOW WAS THIS INSTRUMENT CREATED?

In a personal conversation, Ranjana Amaradheva informed why and how this instrument was created.

Amaradheva had to resign from the government job for some unknown reason. Then he was short in money and therefore planned a one man show like *Sa Prasangaya* of Viktor Ratnayaka. Amaradheva initiated his first show in 1978 which is the year he was turning 50. He named it *Shrawana Ramani*. Nearly 25 songs that included duets and solos were presented. The picture depicts that Amaradheva is singing while playing mandoharp.

The set of the stage was designed and constructed by Somabandhu Vidyapathi, father of Ravibandhu Vidrapathy. Since, Amaradheva had the habit of playing mandolin while singing, he wanted to do the same on the stage. The designer, Somabandu found that the English mandolin is not looking well matching with the style of his singing, and

therefore Somabandu designed a new music instrument that is attractive and corresponded to the theme according to his view. However, the idea of joining two music instrument is expressed by Amaradheva and Somabandu did the designing part and Peterson did the crafting part. Somabandu studied Amaradheva's sitting postures, and drew this music instrument. Ranjana Amaradheva said that an 'eastern shape' was added to the English mandolin by attaching a part of a harp. According to Ranjana, it was successful and continued in later shows.

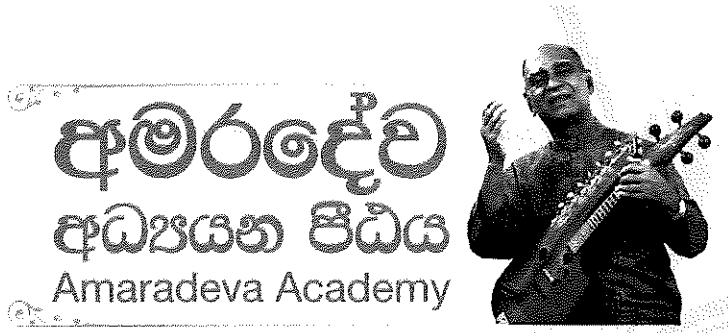


Figure 1: A picture of Amaradheva used to attract students into a newly established music school named after Amaradheva. He is holding the said mandoharp in his left hand. Advertisement printed with permission.

Later on, Peterson has tried making a mandoharp of fiber glass, but it was not successful since it was rather bulky and heavier than the former version.

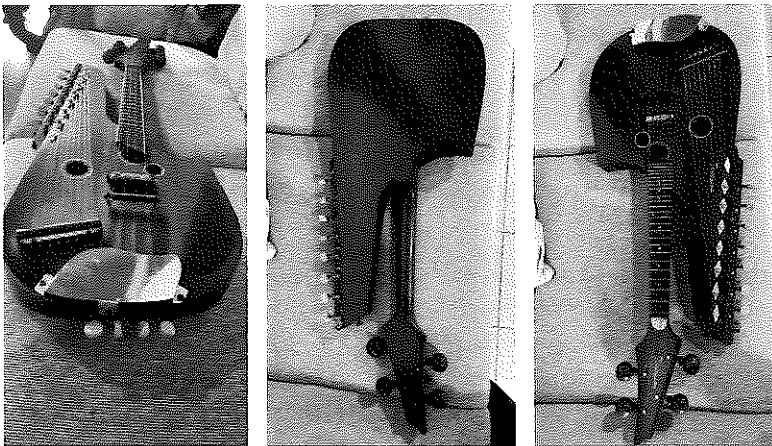


Figure 2: The construction as it was used. Re-printed with permission.

Then, Tennyson Fernando recreated the mandoharp without joining the readymade mandolin. He rather created the shape with new material, in the 1990s. He added a guitar tuning. It is extremely different from the previous version as this is completely built without joining parts of the typical readymade mandolin. The wooden pegs fixed on the mandolin part are not for tuning but for a decoration. The instrument is tuned using the guitar tuning pegs in their modern machine view attached to the instrument. There are eight strings fixed on the part of the zither and the mandolin part consists of four strings which are tuned to the same tones as Amaradheva tuned his violin.

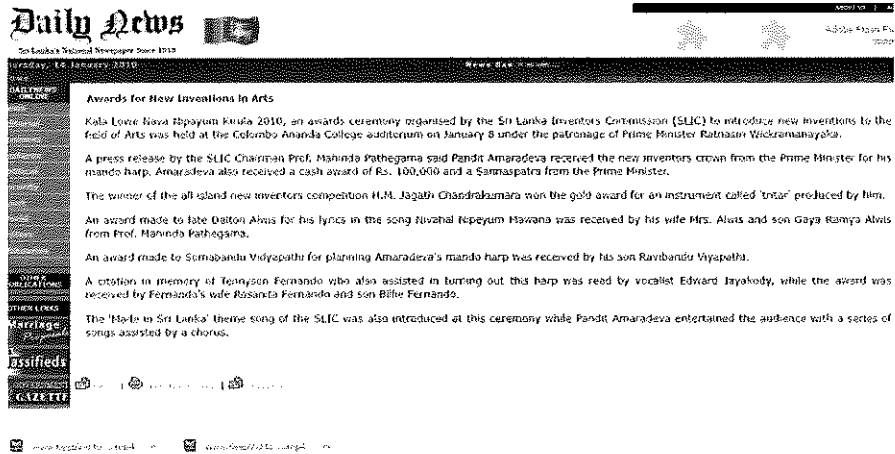


Figure 3: Webpage screenshot of the Daily News, distributed in Sri Lanka. There is an awarding ceremony mentioning the creation of that musical instrument. The webpage screenshot was reprinted with permission.

He used to bring this instrument along with him in his local and foreign shows. He could manage to build a case for this instrument to ease carrying the instrument. Amaradheva, Somabandu and Tennyson Fernando received awards from the government for their creation (Figure 3).

Amaradheva passed away on 3rd November, 2016. His expressions on mandoharp are neither recorded nor informed to anyone. Information on his views about this instrument is rare. Ranjana Amaradheva² says that he was an expert in violin playing. While he is singing, he used to play violin by plucking the strings like a mandolin. He had an English

² Amaradheva, Ranjana and Chinthaka P. Meddegoda (2023). Talk about inherited views. Unpubl. ms. According to audio recording in personal collection.

mandolin that he used more often when composing. After the mandoharp was invented, he started using it and rarely played harmonium or mandolin or violin for composing, and also it depended on his mood. When someone came to meet him, he used to bring the mandoharp to the visiting area and talk with the guest while gently plucking that instrument. Any discussion with the guest mostly included some links to music, so he needed the instrument ready in his hands.

Most probably, he enjoyed the background sound of the mandoharp so that he is not quickly bored and tired answering the typical questions that he has been asked. Tonality of his speaking sound is not average, rather like a part of a song. There is a video available on YouTube where one can observe that he uses a mandoharp while speaking. Another video clip is showing how he used to sing while playing mandoharp³.

Amaradheva needed an instrument in his hands while singing not because it looks adequate to the audience, but needed it to support his renderings. He used to sing while playing a few instruments depending on his mood and other factors. Other than mandoharp, he is comfortable with using harmonium, tanpura, svarmandal, violin, and mandolin.⁴

He is trained in India as an instrumentalist rather than a singer. He preferred the direction as a singer since his singing is well received by the Sri Lankan audience than his violin playing. The case is different when he was in India. He received the first prize for his violin playing at the all-India violin competition held in 1955. Perhaps, he would have flourished in India as a violinist if he would not have returned to Ceylon. However, his returning became a turning point to the field of Sri Lankan Sarala Gee (often translated as light songs⁵).

³ Amaradheva, Ranjana and Chinthaka P. Meddegoda (2023). Talk about inherited views. And audio recording in personal collection. Timecode of the personal collection: 26:23. Unpubl. ms.

⁴ Napier, John (2005). The Svarmandal and Its 'Ancestors': From Organological to Aesthetic Continuity. *The Galpin Society Journal*: 124-131; Bandyopadhyaya, S. (1980). *Musical Instruments of India*. Chaukhamba Oriental Research Studies, 17. Varanasi: Chaukhamba Orientalia.

⁵ Meddegoda, Nishadi (2019). An Overview about Different Sources of Popular Sinhala Songs. *AEMR-EJ*, 3: 32.

The mandoharp was suitable for him in many ways, as it contained four strings with similar tuning as in the violin. The other part plays the role of Indian surmandal which is not a harp but a zither according to the instrument classification method introduced by von Hornbostel and Curt Sachs.⁶ It has a new shape which is not usual. It creates rather curiosity, astonishment and holiness in the audience since it is played by a person like Amaradheva who is known to the average Sri Lankan audience as 'the highly skilled classical singer of Sri Lanka'.⁷

As Amaradheva returned to Sri Lanka in 1956, he started music tuitions. He taught ragas and some Sinhala songs to his students. However, he was known to the public as a skillful artist rather than a good teacher. His singing has been followed by many artists thrived after him such as Sunil Edirisinghe, Edward Jayakody, and WD Ariyasinghe.⁸

Ranjana Amaradheva expressed: "I think playing a music instrument is rather more difficult than singing. My father was an expert on playing violin, and therefore he could play mandoharp while singing. The singers who imitate him cannot do that since they are not good instrumentalists. I think that can be one of the reasons, that this instrument has not been continued by others."

FINAL THOUGHTS

- Vocally dominated shows may have worked mainly only with an accompaniment, even if this is not continuously played.
- Inventions of hybrid musical instruments served the beautifying of the show rather than the true accompaniment of the singer.

⁶ von Hornbostel, Erich Moritz and Curt Sachs (1961). *Classification of Musical Instruments*: Translated from the Original German by Anthony Baines and Klaus P. Wachsmann. *The Galpin Society Journal*, 14: 3–29. DOI:/10.2307/842168.

⁷ Amaradheva, Ranjana and Chinthaka P. Meddegoda (2023). Talk about inherited views. Audio recording in personal collection. Unpubl. ms.

⁸ Amaradheva, Ranjana and Chinthaka P. Meddegoda (2023). Talk about inherited views. Audio recording in personal collection. Unpubl. ms.; Parliament of Sri Lanka (2010). *University of the Visual and Performing Arts - Annual Report*. 8. PDF last retrieved 9 February 2017.

- The musical instrument invention helped the singer to overcome distractive sounds and insecurities.

Amaradheva was a highly praised musician and his shows have had a strong impact on how shows were seen in general. He also was a typical result of his time. New instrument inventions or creations, new appearances on show stages, the gathering of as many as possible people in an audience hall and the introduction on National Television contributed to the distribution of his ideas and the way of using shows. Many students and staff members in National Schools felt a strong attachment and tried to follow his steps or started preparing their students to do so.

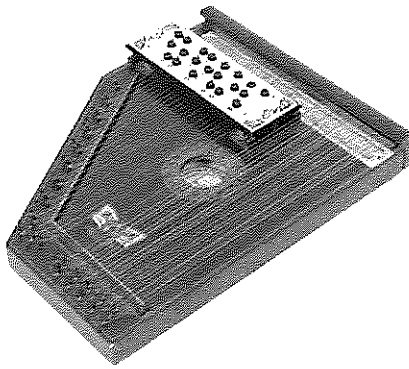


Figure 4: A Mandolin-Harp as produced in big numbers in Central Europe, during the early 20th century. These instruments had a device to stop unwanted strings from sounding and opposite. Musicians were better in focusing on singing rather than on playing. The production declined with the arrival of mass media⁹.

The outcomes are still present in some following shows and the interest in his instrumental creations will not cease as it was in some other places of the world, where similar results were created like the

⁹ Figure 4 can be studied under this link:
https://cn.bing.com/images/search?view=detailV2&ccid=6QjhGAna&id=676EE800C58DA80168AA2D35156682C3B6250DA8&thid=OIP.6QjhGAnavYQ1qpF6wIXtegHaE7&mediaurl=https://cdn.antiquitymusic.com/media/catalog/product/cache/1/image/268799b913174d96793200b0c1a85997/i/m/img_6167.jpg&exp=315&expw=474&q=mandoharp&ck=71A6A4848C863BC58AC9C5DD32A16BEE&idpp=rc&idpview=singleimage&form=rc2idp&ajaxhist=0&ajaxserp=0, last accessed 3 October, 2023. This instrument was a zither with a limited repertoire.

different ways of using a zither and a mandolin in other parts of the world (Figure 4).

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THE PRODUCTION OF TABLA IN SRI LANKA

Nishadi Prageetha Meddegoda¹

Abstract

North Indian music plays a considerable role in Sri Lanka. This paper discusses the assembly of the North Indian tabla, a pair of single-headed membranophones which arrived in Sri Lanka in the late 19th century. As an instrument of the Indian heritage, it is of great importance in accompanying vocal renderings in ensemble with other types of instruments in different genres.

Sri Lanka has a capacious history of drumming and inventing drums such as 'yak beraya', 'geta beraya', 'rabana'. Even though there is not much interest in the production of the tabla in the country, it still continues to get imported from India. The instrument is played with the hands, palm, and fingers, which is made of cow or goat skin. The middle part (black part) of the tabla is made of iron-oxide ash, glue, wheat-flour paste, soot, and copper vitriol. There are some varieties of woods out of which the tabla is made, such as rosewood, neem (*Azadirachta indica*), and mahogany. The wrapper of the Bayan (left) drum is bowl-shaped; it is made of chrome-plated copper. The materials which are used to make the tabla are available in Sri Lanka. Accordingly, this raises a question that why may Sri Lankans mostly desire to import the instrument while there are many skilled instrument makers and required materials? In this research, the views on tabla making, crafting skills, and underlying reasons have been discussed. Previous literature on organology, musical instruments making, and some socio-musical studies were studied in this regard, and personal interviews with craftsmen were conducted in order to gather information. This research may provide some insights about a desired industrial development of instrument making as a contribution to the economy and the society.

Keywords

Sri Lanka, Tabla, Drumming, Instrumental features, Social conditions

¹ Nishadi P. Meddegoda obtained her Master's degree at the Kandyan Peradeniya University, where she is also teaching. She is versatile in research and methods on local music practices and popular music.

BACKGROUND

Music in Sri Lanka has been nurtured by other foreign music cultures; the effect of Indian music culture has prospered the Sri Lankan music intensely from the root due to the geographical factors, commerce, religious tasks, trade, and cultural contacts. However, the performances of singing and playing of North Indian music have come to settle as the main stream of music education in Sri Lanka (further named as 'country') today.

Consequently, Indian musical instruments play a vital role, specifically in the sounds of South Asian music and dance. In regard to the classification of musical instruments of North India, there have been developed numerous systems based on morphological characteristics². The ancient Hindu system divided instruments into four categories, stretched (strings), covered (drums), hollow (wind), and solid (bells), as in the Western system of musical instrument classification of these groups – chordophones, membranophones, aerophones, idiophones, and later added electrophones (which produce sound by electronic means) – basing the distinction on the way in which sound is created and not exclusively on construction.

Rhythm plays a vital, major, and active role in Indian music, and Indian music is known largely for its leather instruments, which are mainly called as 'anabadha' or 'abadha'. Among them are pakhawaj, tabla, khol, dhol, nakkara, mridangam, dvil, sudha maddalam, chenda, urumi, pambai, udukku, tumbakanari, huduk, and tilima, which all are significant percussion instruments.

This paper discusses the assembly of the North Indian musical instrument called 'tabla', the main and famous percussion instrument of Hindustani classical music. Taking a look into the discovery of tabla, there are so many conclusions and varying opinions about it. Some people believe that famous *pakhwaj* player of Delhi *Ustad Sudhar* separated pakhwaj to make tabla. One strong belief is Parsi poet Amir Khusrau discovered tabla during the reign of Allauddin Khilji in 1300 A.D. Some experts consider that the word tabla derives from the Persian and Arabic word 'tabl', which is the equivalent name for the

² Roda, Allen. (2009). *Musical Instruments of the Indian Subcontinent*. *Heilbrunn Timeline of Art History*. New York: The Metropolitan Museum of Art. http://www.metmuseum.org/toah/hd/indi/hd_indi.htm (March 2009), last accessed 3 October, 2023.

percussion instruments³. Some trace it to West Asia; others trace it to the evolution of indigenous musical instruments of the Indian subcontinent. Conversely, the origin of the tabla is argued by scholars and the time period from which this instrument came into play is still controversial. Anyway, the obvious reason for the discovery of tabla could be that musical instruments like 'mridangam' or 'pakhwaj' produced weighty and deep-seated sounds and were used for the singing styles such as 'Dhrupads' and 'Dhamar', but on the other hand, as the light classical music like 'Khayals' and 'Ghazals' became popular, there was a need for a much more lyrical, sharp-sounding and ideal accomplished percussion instrument. This may have led to the discovery of the tabla. However, until the 17th century, the tabla was used to the simple melodies such as bhajans and folk music, and later on, it became a sophisticated instrument of Hindustani classical music and hence popular with the common people⁴. The main Indian tabla schools are Banaras, Lucknow, Delhi, Farukhabad, and Punjab. The playing style of tabla in these schools are unique and different from each other.

STRUCTURE

The tabla consists of a pair of drums. Small wooden drums played using right-hand fingers and the palm are called sidda (tabla, dayan, or dahina), and bigger metal (copper, bronze) or clay drums, which resemble the shape of a kettle drum and are indeed kettle drums played using the left-hand fingers, palm, and wrist, are called dagga (duggi, ba, or bayan). They are played in the sitting position, placing them on two rings (chuttas) made out of plant fiber wrapped in fabric.

THE PROCESS OF MAKING TABLAS

Making tablas is a skill perfected with high patience. The process of constructing tablas has four steps: forming of wood, fashioning of clay/metal, *syahi* preparation, and final assembly.

³ Naimpalli, Sadanand (2005). *Theory and Practice of Tabla*. Mumbai: Popular Prakashan.

⁴ Kasliwal, Suneera. 2001. *Classical Musical Instruments*. New Delhi: Rupa, 38

Tabla

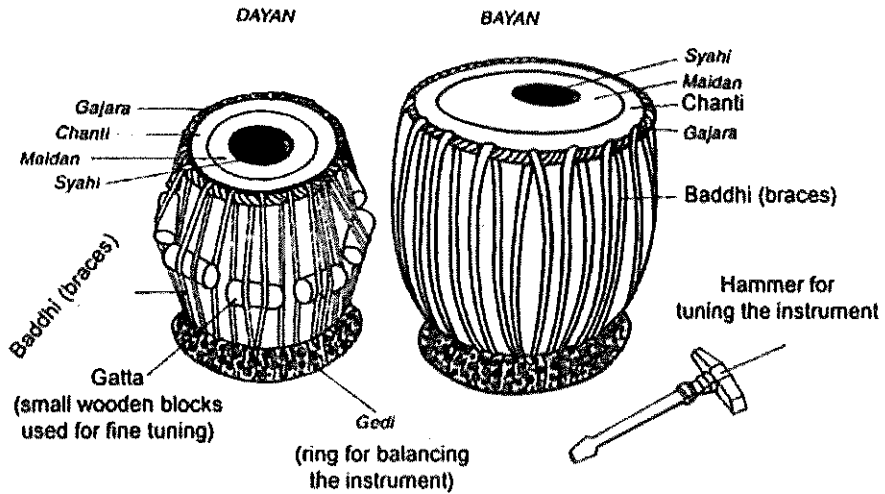


Figure 1: Parts of the table. Reused with permission.⁵

FORMING OF WOOD

There are some varieties of woods out of which the tabla is made, such as Indian rosewood (red or black), mango, neem (*Azadirachta indica*), and mahogany wood, which is heavy and insect-resistant. A width of 6"–8" (15–20 cm) and a length of 10"–11" (25–30 cm) of a piece are shaped on a lathe and hollowed out. A large piece is left at the bottom to make it heavy and then placed in a cool dry place to season up to 2 years.

FASHIONING OF CLAY/METAL

The *daggas* are made out of copper, brass, steel, or aluminum. After firming an 8" (20cm) metal disc to make a bowl, they are joined to a disc of a cylinder width of 10". An iron ring is fitted inside the frame, which is then shaped to a proper bowl using a mallet.

FRAMING MEMBRANES

⁵ Kasliwal, Suneera (2001). *Classical Musical Instruments*. New Delhi: Rupa.

The membranes of the drum are made from cow or goat skin. The skin fitted firmly to hoops by interwoven leather cords and put over the deep ends. These plaited strips are called *gajara*. These strips are made out of cow, camel, or sheep. Heads are tensed using a leather strap and passed through the hoops at an equal spacing of 16 times. Then the cylinder-shaped small wooden rolls or blocks of wood (*gatta*) are positioned between the tabla and the strips to change the tension by moving up and down using a mallet to tune the tabla to the desired pitch.

SYAHI PREPARATION

The most significant part, the middle part (black part) or the tuning paste of the tabla called syahi, is made of multiple layers of iron-oxide ash, glue, wheat-flour paste (some makers prefer rice powder), soot, and copper vitriol, and its thickness decreases from the center to the edge about 7 cm in diameter. It is affixed centrally on dayan and eccentrically on bayan. Dutta has explained:

“The application of the syahi starts with a base layer of mucilage, followed by numerous thin layers of flour, water and iron fillings. The applied layers are rubbed with a stone. The syahi material is inflexible; if a single layer applied and allowed to harden, the drum would not vibrate freely. Rubbing with the stone creates a network of cracks extending down to the base of the syahi. This allows vibrations to travel across the syahi, letting the membrane vibrate freely. The syahi is heavier than the membrane and hence carries more energy while vibrating. This makes the vibration sustains longer....”⁶

Delhi, Pune, Mumbai, Banaras, Calcutta, and Farukhabad are the places famous for making the superior quality of tablas. The earlier procedures of tabla making, such as height and weight, application of syahi, and making of *pudi* (drum head) have been changed, modified, and set with a more professional approach. Now, it is made to match the different pitches of vocalists and instruments in different sizes.

⁶ Dutta, Krishnendu. 2015. *SAPTAK*. Kolkata: Jayasree Press: 15.

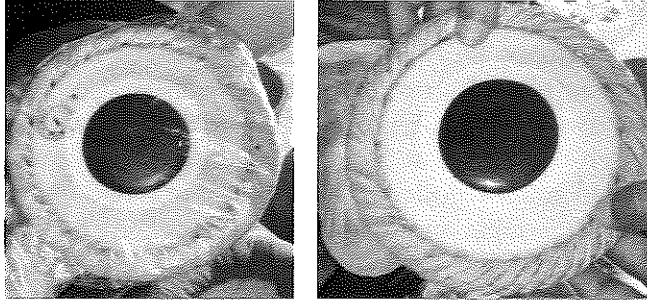


Figure 2a and 2b (left and right): Tabla caps imported from Banaras and Calcutta.

As an instrument of the Indian heritage, it is of great importance in accompanying vocal renderings in ensemble with other types of instruments in different genres. The playing technique involves extensive use of the fingers and palms in different arrangements to create a wide variety of different sounds and rhythms, reflected in mnemonic syllables called 'bols'.

DRUMS IN SRI LANKA

Sri Lanka's drums are also affiliated with religious ceremonies and rituals, found within Buddhism and Hinduism. The traditional musical instruments of the island are classified as panchaturya nada (pancha means fivefold), and the first two refer to drums: Atata (single-headed drums) and Vitata (double-headed drums). There are several drums under this system, such as "yak beraya", 'geta beraya', 'rabana', 'udekkiya', 'tammaettama', 'daula', 'yak beraya' (demon drum), also known as 'dewol beraya', or 'Pahatharata beraya' (low-country drum), which is the primary instrument representing the low-country tradition of drumming. The 'Geta beraya' is barrel-shaped and double-headed, covered with different skins, representing upcountry drumming tradition. 'Rabana' is a frame drum which accompanies in singing 'virindu', and the large rabana called 'banku rabana' is used mostly for the festivals where it is played using both hands. Udekkiya is an hourglass-shaped drum. The 'Tammaettama' consists of a pair of vessel-shaped kettle drums, played using a pair of cane sticks with curved, circular ends. The 'daula' is cylindrical and played with a specially carved stick (kaddippuva) on one side and using the hand on the other side, which represent the Sabaragamuwa region of Sri Lanka.

The art of making these traditional drums in Sri Lanka has evolved over time. Some academics who conducted research studies on the history of drums and the art of making drums stated that each drummer was personally responsible for the assembling of their own drum from the selection of the wood and drum skin in early⁷ days. It is changed today. A group of artisans come together to assemble these traditional drums.

MANUFACTURE OF TABLAS IN SRI LANKA

Gradually, with the passage of time, the tabla arrived in Sri Lanka in the late 19th century with the arrival of Nurthi drama troupes⁸. The tabla, which is Indian in origin, has no much interest in the area of production in the country; even it plays a major role as a main percussion instrument in the field of Sri Lankan music today. The materials which are used to make the tabla are available in Sri Lanka and still continue to get imported from India.

Accordingly, this raises a question why may Sri Lankans mostly desire to import the instruments while there are many skilled instrument makers and required materials are available? There could be many reasons behind this complication.

However, there are a few areas in the country where the production of tabla takes place, such as 'Sri Madura' Matara, 'Ridma Taranga' Matara, drum village Kuragala, Kesbewa, and Gampaha, and some individual artists like Ashoka (famous as *Delkanda Ashoka*), Kumara from Aturugiriya, Rajakaruna from Dambulla, Ambalangoda Chathura, Kapila Weerasinghe from Kegalle, and Mahesh Ekanayake from ME Manufactures, and Wattedegama as well.

It was revealed that some of them import most of the raw materials needed to make tabla from India because often the tabla cap changes depending on the desires of the customers according to the specialty of tones such as Banaras caps or Lucknow caps.

⁷ 'Early' refers to a time when there was not yet mass media consumption. Land was the most important asset of the people. This time period was also quite short compared to the entire history of people in Sri Lanka.

⁸ Silva, K. M. (1981). *A History of Sri Lanka*. Berkeley: University of California Press, 485

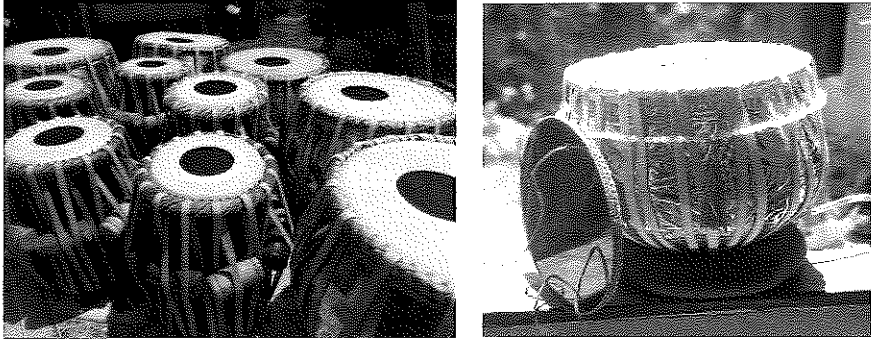


Figure 3a and 3b (left and right): Tablas and duggas made in Sri Lanka by using all the raw materials imported from India.

There are several places where tabla makers can procure goat skins for the whole sale prices, such as 'Tihariya', 'Medamulana'. Because of buying a lot at once, they have been able to buy one for around LKR 1200/-. Except for the part near the neck and the area near the nape of the neck, other areas of this goat skin are used.

To stop from decomposing, the fleshy sides of the cow skin are coated with ash. Then, the skins are spread on a flat surface, stretching held by pegs thoroughly and letting to dry under the sun. The goat skins normally are dried, laying on the walls.

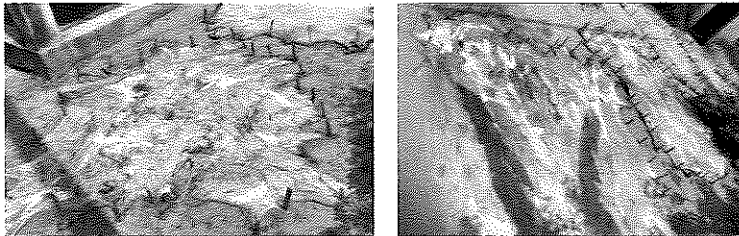


Figure 4a and 4b (left and right): Drying the raw skin of cows and goats.

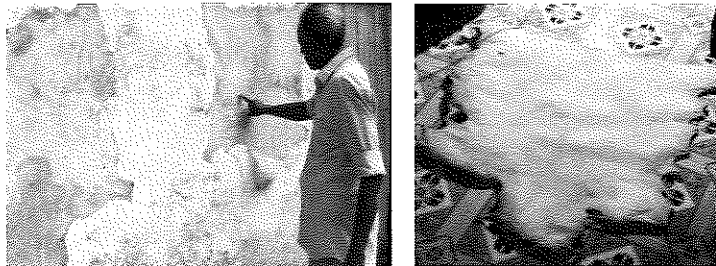


Figure 5a (left) and 5b (right): Dry goat skins laying on the walls and a well-dried goat skin.



Figure 6 (left): Measuring the skin; Figure 7 (right): The tool used to remove the hair of animal skins.

Typically, the plaited strips or *gajara* used to tense the head of tablas are made out of buffalo or cow skins in Sri Lanka.

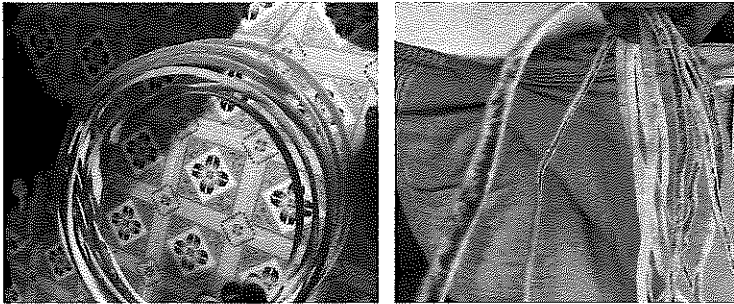


Figure 8a and 8b (left and right): Strips (*gajara*) made from cow and buffalo skins

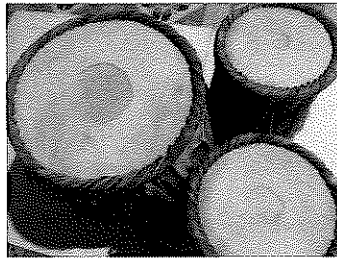


Figure 9: Ready for the application of syahi.

Some Sri Lankan tabla makers use powder of '*yabara*' stones, chemifix glue, or gum taken from wheat flour, the paste of boiled rice, and some medicines to make the *syahi* (middle black part). If '*aralu*' (*Oroxylum indicum*) powder is mixed with the paste, the colour will be changed to black. Some use egg whites to make the black part shiny. The *Syahi*

part is made in different ways in tablas for the use of classical music and light music. Usually, multiple layers such as 100–150 layers are applied for a tabla that plays for the classical music and 40–60 layers for the applied music.

The steel shells or bowls of *bahinas* or *daggas* are made of metal sheets. They are shaped to proper bowls by using a mallet. Normally, the metal sheets or the metal bowls are imported as those are not available in the country.

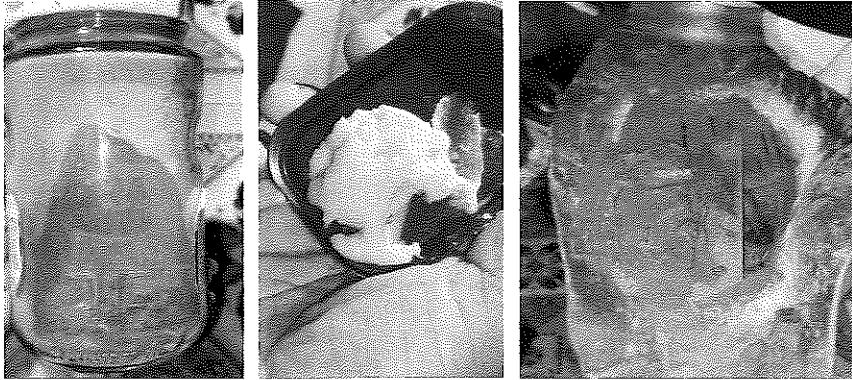


Figure 10a, 10b, and 10c (left, middle, and right): powder of yabara stone, paste of boiled rice, and mixture of syahi.

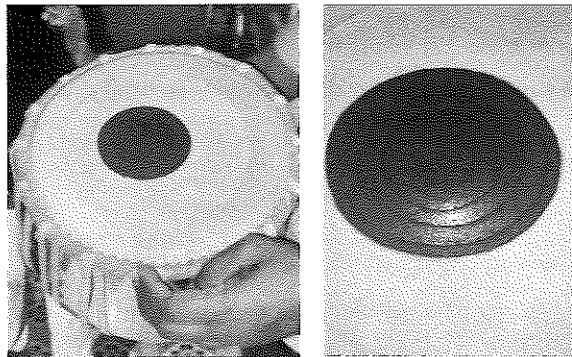


Figure 11a and 11b (left and right): Locally manufactured bayan or bahina normally used.

There are some varieties of woods Sri Lankan tabla makers use to make shells of tablas such as Kohomba (neem or (*Azadirachta indica*), Rat Ehela (golden shaower), Sandun (sandal), Samadara (niepa bark tree), or Gansuriya (*thespesia populnea*). There are some places where

wooden parts of the tabla (dahina) are manufactured in Sri Lanka, such as Kuragala and Kumbuka.

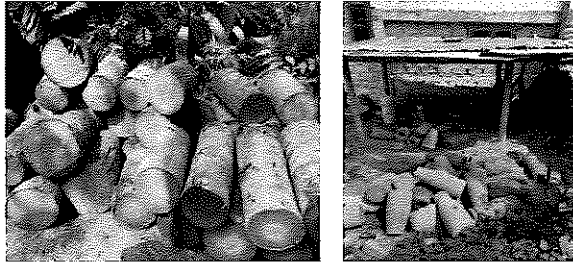


Figure 12a and 12b (left and right): The sliced wood pieces and carved drums.

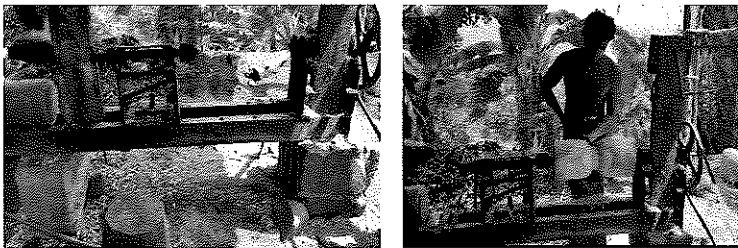


Figure 13a and 13b (left and right): The drum machine.

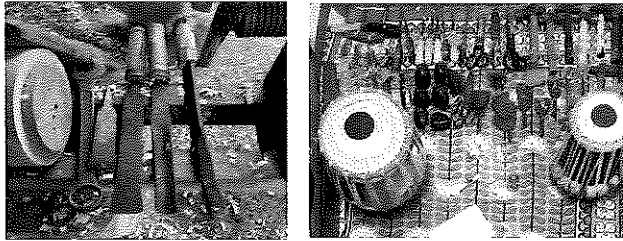


Figure 14a and 14b (left and right): The tools used to form the tabla and other drums.

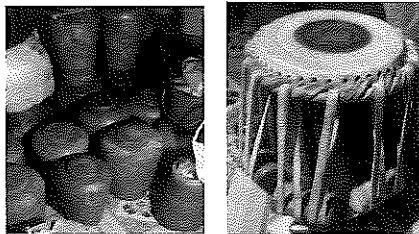


Figure 15a and 15b (left and right): Tabla shells made out of kohomba and a local tabla.

For this short research, we gathered information through some scholars and famous musicians who have a prominent place at playing tabla in Sri Lanka. Some of them studied tabla in India, and others were from Sri Lankan universities. They answered the question over the phone “why may Sri Lankans mostly desire to import tablas while there are many skilled tabla makers and required materials are available?” The following statements roughly represent the opinion of the respected interviewees who are closely attached playing Tabla in the field of music in Sri Lanka.

The questions were answered in Sinhalese, which I tried translating in brief as they were responded.

CHANAKA PEIRIS (UVPA)

Chanaka stated that the tabla he plays is imported from India.⁹

“The tones required for the classical music are not found in tablas made in Sri Lanka. The reason is probably the variance of the skin, wood, and the method of applying Syahi. Even in India, quality of tones are different from place to place. There is a traditional art of making tabla in India. They don't let outsiders to learn. So that skill is fading with themselves. Earlier, Lucknow was famous for making tabla, but today artists of Lucknow also buy tablas from Varanasi, since there couldn't find skilled tabla makers. Even though, Tablas made in Sri Lanka are good for the applied music as it uses high tuned tablas in G scale and F scale. The requirement of tabla in light music is different as it mainly focused on rhythm and beat whereas classical music conserves bhava (sentiments) and all”.

He also uses a tabla that was made in Varanasi, India.

CHANDRALAL AMARAKOON (UVPA)

According to Chandralal, he could experience to see some of the tablas made in Sri Lanka as similar to those made in India hardly. He sees the differences between in Indian and Sri Lankan tablas like, in the syahi, the animal skins (to withstand winter and heat) and the way the tablas are tied.

Also, he mentioned that he played tablas which were manufactured in Sri Lanka in early days. But now, he uses a pair of tablas to play for the

⁹ Pieris, Chanaka (2023): Interview over the phone on Production of Tabla in Sri Lanka on 16 March. Kandy: University of Peradeniya.

classical music and light classical music which are imported from India.¹⁰

PESHALA MANOJ (UVPA)

“Sri Lankan tablas don’t have the tone quality that similar to Indian manufactured tablas. Especially, Sri Lankan tabla makers don’t know the technology of applying Syahi”.¹¹

SRIYAN CHANDRASEKARA (UVPA)

“My first tabla made in Matara was “Ridma Taranga”, so I used to play local tabla until I get admission to the University of Visual and Performing Arts. My opinion is local tablas are only good to play Sri Lankan light songs and Indian tablas are the best for playing classical music due to the vibration issue”.¹²

DISCUSSION

There are several facts that are comprehensible from the information related to the topic obtained from the tabla manufacturers, artists, and the scholars who are working in the field of music in Sri Lanka.

Due to the open economic policies that have been introduced to Sri Lanka in 1977, people got chances to buy air tickets at low rates and import things without heavy taxes as well. So, this situation also caused Sri Lankan musicians to go India and learn North Indian classical music from Indian music institutes. Consequently, their ears used to taste the colours of Indian musical tones. Equally, those who learnt tabla also considered more about the quality of the tone, such as ‘for classical music Banaras or Lucknow tablas are the best’. Thus, it seems that it has become an ideological object which stuck in most of the Sri Lankan musicians that Indian tablas are the best rather than locally manufactured tablas. That has happened due to the training that they

¹⁰ Amarakoon, Chandralal and Nishadi P. Meddegoda (2023). Interview on Production of Tabla in Sri Lanka on 18 March. Kandy: University of Peradeniya.

¹¹ Manoj, Peshala and Nishadi P. Meddegoda 2023. Interview over the phone on Production of Tabla in Sri Lanka on 16 March. Kandy: University of Peradeniya.

¹² Chandrasekara, Sriyan and Nishadi P. Meddegoda (2023). Interview on Production of Tabla in Sri Lanka on 16 March. Kandy: University of Peradeniya.

experienced as students from North India. Accordingly, if somebody has followed the music training in North India, he or she expects the taste or the feeling of the so called 'Indian tone color', even though they return to Sri Lanka. Although we have a natural ear, the reason for this choice is that it has been created by culture.

Earlier, it was not difficult to import these raw materials to Sri Lanka under the open economic policies introduced in 1977. But today, it is changed due to the ongoing economic crisis that people have been struggling even with the shortages of basics. Therefore, the import of musical instruments is also limited as a large amount of tax has to be spent on everything imported from abroad. Due to this situation, it is a good opportunity to manufacture the desirable musical instruments in the country itself when the required materials are available.

Ekanayake, Mahesh is an individual skilled tabla maker from ME Manufactures, Wattegama. Since he had a strong desire to make tablas since the childhood, he has been able to construct tablas in Sri Lanka by his own initiative and with the help of Indian tabla makers. Basically, he is popularized for producing local tablas and repairing Indian or local tablas.

According to him, importing tablas or manufacturing tablas is gradually getting low today due to the high market price of Sri Lanka. Before 2019, a pair of tablas have been sold around the price of LKR 25000/-, and now, in year 2023, the selling price has gone up to LKR 35000/-. The assembled tablas which are fixed with Lucknow and Banaras caps are selling around the cost of LKR 45000/- to 55000/-. As a result, the learning of tabla in Lanka has been restrained. This is because the parents are unable to spend that much money to buy a pair of tablas and resort to teaching their children other musical instruments instead of that¹³.

Ekanayake, Mahesh also mentioned that he initially brought the raw materials from India to make tablas and with the current economic crisis, he is now anxious to procure everything from the country itself. As he stated, the technical skills of making tablas are not easy to grasp as those who manufacture tablas in India are also not exposed to the exact technology of others, specifically the mixture of the middle part's

¹³ Ekanayake, Mahesh and Nishadi P. Meddegoda (2023): Personal communication on Production of Tabla in Sri Lanka on 2 February. Kandy: Wattegama.

tuning paste, which is called syahi, and its application. This argument could be correct with the status of Peshala's statement 'Sri Lankan tabla makers don't know the technology of applying syahi'.

Correspondingly, it was revealed that the way of using raw materials to manufacture local tablas is somewhat different with respect to India. With the explanations given by interviewees, they exposed different opinions about the construction of tablas, such as about the skin used, applying the method of syahi, and the way of strapping the tabla are not specialized compared to Indian tabla makers.

There are about 26 families who make various drums as their livelihood in Kuragala drum village. Kuragala Premaratne¹⁴ is a skilled drum maker who accepts government orders for drums from Kuragala drum village. He gave an arguable reason for the decreasing quality of sounds in local tablas. He has noticed the difference in thickness between the goat skins used for the tablas in Sri Lanka and India. He also said that Indians use sheep skin and its thickness is the same all over the animal's body, whereas the local goat skin is not the same everywhere in the body¹⁵. However, to season the skin used for the part of *maidan*, some use urea and chemicals and others use nothing. As Ekanayake, Mahesh stated, the tone quality gets dampened when chemicals are used to season the skin¹⁶. Therefore, the use of chemicals for ease and convenience can also be a reason for the difference in the tones of tablas in Sri Lanka.

One of the true points could be that some of drum makers who craft Sri Lankan drums (beras and all) use the same materials to construct the tablas, especially the wood which is not suitable to make tablas such as *Sapu* (*Michelia champaca*), *Maara* (*Acacia lebbek* or rain tree), and so on, used to create tablas. Also, it could be seen that the wood seasoning is also not done properly at some point, which affected to the tone quality and the durability of the tabla. Seasoning is essential because it closes the small holes in the wood. If it is not done well, the

¹⁴ Kuragala, Premaratne and Nishadi P. Meddegoda (2022). Personal communication on Production of Tabla in Sri Lanka on 27 October. Kandy, Kuragala.

¹⁵ *Ibidem*

¹⁶ Ekanayake, Mahesh and Nishadi P. Meddegoda (2023): Personal communication on Production of Tabla in Sri Lanka on 2 February. Kandy: Wattegama.

quality of the sound is low and we also have to tune it often. The metal sheets used to make *bahina* are also cheap in quality.

Moreover, there could be some issues on the application of *syahi* (the black part). It just spread on to make the sound of tabla without giving a place to the characteristic value of tone as their only desire is to make money by selling a substantial quantity to the schools and students. Thus, it is not surprising that the Sri Lankan tabla has lost its place due to such deficiencies. Kuragala declared that one of the reasons for this matter is lack of money to buy the right ingredients to make drums.

According to the interviewed artists and scholars, Indian tablas are the best for use in classical music and the local tablas are good for playing applied music due to the tone made in high pitch. Also, unlike in India, Sri Lanka does not have a rich classical music environment unless there is light music. Therefore, it is a reasonable fact that if there is a place for light music rather than classical music in Sri Lanka, then it makes perfect sense to produce instruments that are useful for the light music.

Usually, beginners buy local tablas to learn since they do not understand the tone colour and also, they cannot afford the cost to buy imported ones as the price is high in the market. Once they entered to the university to learn tabla in advance, they get to distinguish gradually about the tone quality and the differences between a local tabla and an Indian tabla.

Kuragala stated that recently, no payment was made by the government to improve their products. But, years ago, they received a small grant with nine huts, machines, and tools to make drums for them through the 'Shilpeeya Sabha'¹⁷. He confirmed then; after that, nothing has been received till today.

And a special thing he said is that his father was also a skilled artist of dancing and therefore the production of drums has been going on since then. Also, even though Kuragala Premaratne and his siblings got government jobs, they did not accept them since their desire was to maintain the drum making industry as they get a lot of money. But he said that none of his children would do the work of making drums. This is because some of them wanted to go to universities and study further and others have turned to other career paths. Another reason given by his children for not liking this job is that the job of making

¹⁷ Arts Council.

drums is too tiring¹⁸. This fact can be cited as another major factor that has affected the production of tabla in Sri Lanka.

FINAL THOUGHTS

There are several reasons that the Sri Lankan tabla is not popularized among the Sri Lankan musicians and the context of North Indian Classical music in Sri Lanka, such as:

- the open economic policies introduced to Sri Lanka in 1977,
- the tone quality,
- ideological reasons,
- the market price,
- the technical skills,
- the raw materials, and
- the social status.

Among these reasons, the tone quality is the major issue that has affected the production of the tabla.

It also was revealed that the Sri Lankan tabla is popularized within the applied musical context which was inherited by the Sri Lankan music industry due to some reasons as mentioned earlier in the discussion.

However, the procedure of manufacturing tablas had setbacks due to certain reasons. Sri Lanka has a precious organological culture that has a long history. If we can make arrangements to teach and train the tabla manufacturers with a more effective technology of tabla production and encouraging them with some financial assistance, they will be making genuine products in the country. This will undoubtedly contribute to save foreign exchange then.

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¹⁸ Kuragala, Premaratne and Nishadi P. Meddegoda (2022). Personal communication on Production of Tabla in Sri Lanka on 27 October. Kandy, Kuragala.

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NEW MATERIALISM IN ETHNOGRAPHIC ORGANOLOGY AND PA'O KHAYA

Christopher A. Miller¹

Abstract

New materialism offers a philosophical lens through which to understand the musicking of musical instruments. The allied fields of ethnomusicology and organology may employ those new tools for scholarship. In the words of Ian Bogost, the goal is to “amplify the black noise of objects to make the resonant frequencies of the stuffs inside them hum . . . to write speculative fictions of their processes, their unit operations . . .”². In so doing, we could aspire to come to a deeper understanding of the musical instrument’s operation of repertoire, its mechanical functions, and its choreography of us as performers. Object oriented ontology provides an essentially flat ontological framework through which the ethnographic approach to organological fieldwork, organized primarily around the music lesson, may provide a differently nuanced examination and subsequent description of the instrument itself. I offer waypoints in a proposed expansion and exploration of the application of this theoretical framework by revisiting recent relevant literature (Bates, Dawe, Roda);³ suggesting refinements to the ideas of the same; and applying those updated ideas to the Pa’O *khaya* in Myanmar. The article ultimately serves as a basic roadmap for future trajectories in my ongoing research.

Keywords

Materialism, Organology, South Asia, Myanmar, Khaya

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 - ² Bogost, Ian (2012). *Alien Phenomenology, Or, What It’s Like to Be a Thing*. Minneapolis: University of Minnesota Press.
 - ³ Bates, Eliot (2012). The Social Life of Musical Instruments. *Ethnomusicology* 56(3): 363–395; Dawe, Kevin (2005). Symbolic and Social Transformation in the Lute Cultures of Crete: Music, Technology and the Body in a Mediterranean Society. *Yearbook for Traditional Music* 37:58–68; Roda, P. Allen (2014). Tabla Tuning on the Workshop Stage: Toward a Materialist Musical Ethnography. *Ethnomusicology Forum* 23(3): 360–382.

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“Der Zweck der Philosophie ist die logische Klärung der Gedanken.
Die Philosophie ist keine Lehre, sondern eine Tätigkeit.
Ein philosophisches Werk besteht wesentlich aus Erläuterungen.”

~Ludwig Wittgenstein⁴

“It matters what thoughts think thoughts. It matters what
knowledges know knowledges. It matters what relations relate
relations. It matters what worlds world worlds. It matters what
stories tell stories.” ~Donna Haraway⁵

“3 criteria of the power of thingness

1. slowness / endurance / persistence
2. contagion / porosity / intercorporeality
3. inorganic sympathy / strange attraction”

~Jane Bennett⁶

INTRODUCTION

Scholarship of music contains the fields of ethnomusicology and organology, both existent independent of the other, exhibiting rich complexity of past and ongoing output, and multi-layered in their respective internal concerns. Ethnomusicology is simply (but imperfectly) described as the interdisciplinary study of music traditions in social and cultural context. Organology is simply (but imperfectly) described as the study of all musical instruments as objects. There are myriad examples, over the course of time, in which the fields of ethnomusicology and organology intersect in scope of content. Students of ethnomusicology are familiar with scholarly

⁴ Wittgenstein, Ludwig (1922). *Logisch-philosophische Abhandlung*. London: Kegan Paul, 4.112.

⁵ Haraway, Donna (2016). *Staying with the Trouble: Making Kin in the Chthulucene*. Durham: Duke University Press, 35.

⁶ Bennett, Jane (2011). Powers of the Hoard: Artistry and Agency in a World of Vibrant Matter. Vera List Center for Art and Politics, The New School. lecture given on 13 September, 2011.
<https://youtu.be/q607Ni23QjA> Published on YouTube 27 September 2011, last visited 6 May 2023.

efforts in the systematic classification of musical instruments.⁷ Scholars of ethnomusicology subsequently refine the classification of musical instruments through the application of methods developed within their own field.⁸ Scholars of organology likewise employ humanistic methods to better understand cultural foundations of musical instruments as artifacts.⁹

In the past decade, scholars who operate within the nexus of ethnomusicology and organology have applied new theoretical lenses emerging from philosophy. The subset of philosophy (still vibrantly contested internally) relevant to these studies may be identified (imperfectly) as new materialism. Among the fertile and active debates in new materialism, two divergent approaches have received critical focus from scholars of ethnomusicology/organology: actor-network theory (ANT hereafter, emergent primarily from research in science, technology, and society) and object-oriented ontology (OOO hereafter, emergent primarily from research in phenomenology). Central to the former is the scholarship of Bruno Latour; to the latter, the work of Graham Harman.¹⁰ With consequence, the two notably collaborate as editors for the *New Metaphysics* series published by Open Humanities Press.

Ethnomusicologist Eliot Bates addresses ANT,¹¹ the exploration of the shifting actant networks within the relationships of all things

⁷ Mahillon, Victor-Charles (1880). *Catalogue descriptif et analytique du Musée instrumental du Conservatoire Royal de Musique de Bruxelles*. Ghent: Librairie Générale de Ad. Hoste. von Hornbostel, Erich M. and Curt Sachs (1914). *Systematik der Musikinstrumente. Ein Versuch. Zeitschrift für Ethnologie* 46(4/5): 553–590.

⁸ Hood, Mantle (1971). *The Ethnomusicologist*. New York: McGraw-Hill Book Company; Kartomi, Margaret (1990). *On Concepts and Classifications of Musical Instruments*. Chicago: University of Chicago Press. Special Interest Group on Organology, Society for Ethnomusicology.

⁹ Dawe, Kevin (2001). People, Objects, Meaning: Recent Work on the Study and Collection of Musical Instruments. *Galpin Society Journal* 54: 219–232. Ethnomusicology Working Group, American Musical Instrument Society

¹⁰ Latour, Bruno (2005). *Reassembling the Social: Introduction to Actor Network Theory*. New York: Oxford University Press; Harman, Graham (2002). *Tool-being: Heidegger and the Metaphysics of Objects*. Chicago: Open Court Publishing.

¹¹ Bates, Eliot (2012). The Social Life of Musical Instruments. *Ethnomusicology* 56(3): 363–395.

including people and musical instruments, with regard to his (ethnographic) study of *saz*-making in multiple locations around Turkey. Roda sensitively examines OOO,¹² the exploration of an intentionally flat ontology and rejection of an anthropocentric frame, with regard to his (auto-ethnographic and ethnographic) study of tabla construction in Varanasi, Uttar Pradesh, India. Roda briefly adds to his analysis a further parsing of new materialist frames of inquiry into those that address the nature of existence and those that focus on agency and actants, while maintaining an agnostic stance to their respective efficacies within ethnomusicological and organological contexts.¹³

With this concise article, I have three tasks, in order:

1. to address the strengths and weaknesses of Bates' article as it has arguably achieved, in the decade since its publication, an elevated status of watershed literature.¹⁴
2. to suggest a resolution of Roda's agnosticism by emphasizing the work of Bogost (on existence) and Bennett (on agency) as most immediately beneficial to the fields of ethnomusicology and organology.
3. to briefly describe my own ethnographic experience with performers of *khaya* among the Pa'O of Myanmar employing ANT with a notion to move more firmly into OOO, whilst suggesting key aspects of the difference.

¹² Roda, P. Allen (2014). Tabla Tuning on the Workshop Stage: Toward a Materialist Musical Ethnography. *Ethnomusicology Forum* 23(3): 360–382.

¹³ Harman, Graham (2002). *Tool-being: Heidegger and the Metaphysics of Objects*. Chicago: Open Court Publishing; Bryant, Levi (2010). *The Democracy of Objects*. London: Open Humanities Press; Bogost, Ian (2012). *Alien Phenomenology, Or, What It's Like to Be a Thing*. Minneapolis: University of Minnesota Press; Latour, Bruno (2005). *Reassembling the Social: Introduction to Actor Network Theory*. New York: Oxford University Press; Bennett, Jane (2010). *Vibrant Matter: A Political Ecology of Things*. Durham: Duke University Press; Barad, Karen (1998). Getting Real: Technoscientific Practices and the Materialization of Reality. *Differences: A Journal of Feminist Cultural Studies* 10(2): 87–128.

¹⁴ By way of evidence, "Social Life" was foundational to a series of three panels of three papers each at the ICTM World Conference, July 2022 and directly cited in five paper presentations to the biennial conference of the Galpin Society, June 2022, including the invited keynote.

PART 1: BATES

"I argue for taking objects, and particularly musical instruments, seriously—but not simply as things that humans use or make or exchange, or as passive artifacts from which sound emanates. Much of the power, mystique, and allure of musical instruments, I argue, is inextricable from the myriad situations where instruments are entangled in webs of complex relationships—between humans and objects, between humans and humans, and between objects and other objects. Even the same instrument, in different sociohistorical contexts, may be implicated in categorically different kinds of relations. I thus am arguing for the study of the social life of musical instruments."¹⁵

Both the strength of Bates' scholarship and the efficacy of the approach to musical instruments bears out in the reception and wide scale adoption of tenets of new materialism into musicological discussion. Among those, the article maintains a much stronger connection to ANT than it does to OOO, where the former more frequently centers the human. The conscientious reader of Bates benefits from the direct connections to the recorded scholarship of Kevin Dawe, Bruno Latour, John Law, Stephen Harold Riggins, and Jane Bennett, among many others. The work demonstrates a strength of commitment as well in its thoughtful articulation of thirteen questions for future research, posed in the final pages of the piece. Especially compelling are those questions troubling the intersubjective relations of instruments and performers, wherein instruments, among other points of agency, choreograph the musician.

There are, however, certain weaknesses in the piece that should be reconciled in future work. First, Bates relies on four accounts from fictional literature to illustrate his frame in the opening paragraphs. E. Annie Proulx's *Accordion Crimes*, François Girard's *The Red Violin*, J. Meade Falkner's *The Lost Stradivarius*, and Herman Melville's *Pierre* are utilized to illustrate musical instruments as actants. While sensational and entertaining, these do not serve to advance the philosophical arguments in meaningful ways. I am severe in this outlook, but it is for the purpose of opposing the more deeply metaphorical of available narratives. They are of minimal service to actualities in scholarship. They are also allied to ethnography in their

¹⁵ Bates, Eliot (2012). *The Social Life of Musical Instruments*. *Ethnomusicology* 56(3): 364.

commitment to narrative, and thus, human-centered story-telling. Though Bates' ethnographic study, the bulk of the article, is inarguably strong, it does not elevate the saz beyond anthropocentric concern. In that manner, it most closely follows norms of ANT, and comes closest to OOO only in passing, "... the wood must rest and endure changes . . ."16

Secondly, Bates is openly hostile to the endeavors and efforts of both historical organology and ethnomusicologists who have explored new and alternative modes in organology. The assertion that "museums are mausoleums . . . with organologists acting as morticians"17 is unnecessarily sensationalist, demonstrably inaccurate, and most importantly, counter to the intentions of new materialist thinking. A primary goal is to resist anthropomorphism as applied to objects, which are imagined to be metaphorically incarcerated or entombed in Bates' case.

Bates further emphasizes his critique by presenting one of Mantle Hood's organograms in isolation,18 affecting in the reader its apparent illegibility. It is the one on the left below. I do the same in

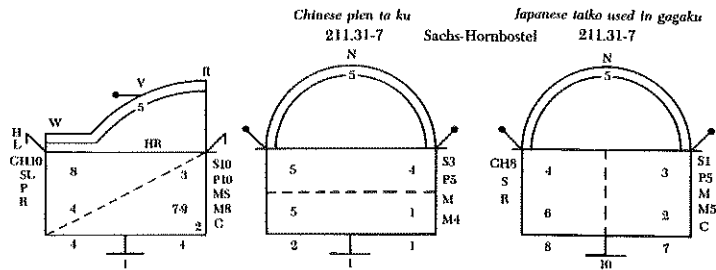


Figure 1a, b, c (from left to right): Mantle Hood's organograms (1971) for Ghanaian atumpan drums, Chinese pien ta ku, and Japanese gagaku taiko.

republishing it here but also include two more organograms by its side. I would not argue that such an expansion of the palate results in significantly more legibility, far from it. However, a patient observer may benefit even in minor terms from the opportunity to step in what

16 Bates, Eliot (2012). The Social Life of Musical Instruments. *Ethnomusicology* 56(3): 381.

17 Bates, Eliot (2012). The Social Life of Musical Instruments. *Ethnomusicology* 56(3): 365.

18 Bates, Eliot (2012). The Social Life of Musical Instruments. *Ethnomusicology* 56(3): 366.

is has been discussed above. There are discoveries to seek and with which to wonder. Even further, rather than poke fun, perhaps one may be inspired to investigate Hood's ideas in context, which I would argue presuppose some aspects of the spirit of both ANT and OOO. Networks and objects recede from view and require of us new means of engagement beyond what we may find immediately comfortable or legible. As Bogost would argue, some tools are beneficial *because* they cause us to pause, puzzle, wonder, and consider.

PART 2: EXISTENCE, AGENCY, AND WONDER IN ANT & OOO

“. . . musical instruments can transform minds and bodies, affecting states of mind as much as joints, tendons and synapses, ergonomics and social interaction—the joy of playing musical instruments is

a joy that comes from exhilaration felt at physical, emotional and social levels.”¹⁹

In her address on the topic of hoarding to the academic community organized by the Vera List Center at the New School in 2011, Jane Bennett performs a moment of enacted levity with regard to the most obvious intellectual danger presented by the arguments for OOO. In short, that one risks the appearance of, at best, silliness, and at worst, madness, in the mere suggestion of a flat ontology. These kinds of acknowledgements arise in many OOO publications. When Bennett put her talk into written form, her aside persisted in this manner:

“In this essay, I will again pursue the quixotic task, even as Zarathustra's dwarf, who sits on my shoulder dripping lead into my ear, whispers this: ‘Attempts to cross the ontological divide between people and things leads only to incoherence, animism, romanticism, vitalism, or worse.’”²⁰

This disease with the approach, then, is not lost on the ethnomusicologist/organologist:

“[new materialism] led me to a number of rhetorical and practical questions—questions which I hope will contribute to a lived

¹⁹ Dawe, Kevin (2005). Symbolic and Social Transformation in the Lute Cultures of Crete: Music, Technology and the Body in a Mediterranean Society. *Yearbook for Traditional Music* 37: 60.

²⁰ Bennett, Jane (2012). Powers of the Hoard: Further Notes on Material Agency. *Animal, Vegetable, Mineral: Ethics and Objects*, ed. Jeffery Jerome Cohen. Washington, DC: Oliphaunt Books, 241.

organology that is attentive not just to the vibrancy of living musical styles and musicians, but also to the vibrant life of the material world. . . . Some questions I have posed . . . may border on the absurd."²¹

The effect is only further highlighted by the appearance of different formations of the construction "taking seriously" in both Roda and Bates. However apt an apologetics may seem in the broader context of a philosophically stoic academic community; the fields of ethnomusicology and organology are particularly oriented to embrace intellectually sound arguments for what may be seen to animate our collaborating with musical instruments. After all, narratives based in creativity, and organology by uncovering everything to be known of a musical mechanism ultimately motivate ethnomusicology. In that way, Ian Bogost speaks most directly to both in his assertion that ". . . so much of object-oriented ontology is, to me, a reclamation of a sense of wonder often lost in childhood . . ."²²

"By making my own drums and processing my own goat skins, to use Ingold's terminology, I did anthropology *with* leather, not *of* leather; which is to say by corresponding with the material in terms of what it does rather than what it is, I was able to learn from it and be transformed by it. Employing a flat ontology requires taking non-human actors seriously as informants and not treating them as inert or passive reflections of human action."²³

As Roderick would explain, "Objects not only have their own beings, but they have their own modes of being."²⁴ Bogost possesses a software engineer's dedication to exhaustive lists, unit operations, and exploded-view diagramming. Matched with a directly spoken sense of wonder (the theme of an entire chapter in *Alien Phenomenology*), Bogost's OOO approach mirrors and reinforces the mechanical, systematic nature of organology.

²¹ Bates, Eliot (2012). The Social Life of Musical Instruments. *Ethnomusicology* 56(3): 387.

²² Bogost, Ian (2015). The Aesthetics of Philosophical Carpentry *The Nonhuman Turn*, ed. Richard Grusin. Minneapolis: University of Minnesota Press, 83.

²³ Roda, P. Allen (2014). Tabla Tuning on the Workshop Stage: Toward a Materialist Musical Ethnography. *Ethnomusicology Forum* 23(3): 365.

²⁴ Roderick, Noah (2016). *The Being of Analogy*. London: Open Humanities Press, 23.

"The inherent partition between things is a premise of OOO, and lists help underscore those separations, turning the flowing legato of literary account into the jarring staccato of real being. . . .

The off-pitch sound of lists to the literary ear only emphasizes their real purpose: disjunction instead of flow. Lists remind us that no matter how fluidly a system may operate, its members nevertheless remain utterly isolated, mutual aliens."²⁵

Meanwhile, Jane Bennett stories the "thing power" of objects and their performative, active assemblages (ensembles) in a manner and style that satisfies the ethnomusicologist's dedication to cultural narrative with musical instruments. Bennett asks, "What if things can, in some undetermined way, hail us?" Every ethnomusicologist (and organologist) has a determined answer to that question with origins in music. Instruments do hail us. We, as musicians, are only left to place ourselves on Bennett's:

"strength of bond scale [increasing →]

owner -- connoisseur -- collector -- archivist -- packrat -- chronically disorganized -- hoarder"²⁶

We, who animate and are animated by musical instruments, first delight in the creative act of musicking with our instruments. I enlist Yo-Yo Ma as an example of a way of speaking of musical instruments that we know well of ourselves and others. In his recent appearance on the *Ask Me Another* podcast, Ma describes the "generosity in its spirit" of his Stradivarius cello, which is "older than the United States." Podcast host Ophera Eisenberg asks, naturally, "what is the personality of that instrument?"²⁷

When it comes to relations with musical instruments as actants, we are as individuals present without judgment. We, as scholars then, could easily embrace the delight, creativity, mischief, and hope of the flavor

²⁵ Bogost, Ian (2012). *Alien Phenomenology, Or, What It's Like to Be a Thing*. Minneapolis: University of Minnesota Press.

²⁶ Bennett, Jane (2012). Powers of the Hoard: Further Notes on Material Agency. *Animal, Vegetable, Mineral: Ethics and Objects*, ed. Jeffery Jerome Cohen. Washington, DC: Oliphaunt Books, 237–67.

²⁷ WNYC and National Public Radio (2021) *Ask Me Another: Yo-Yo Ma: Civic Duty*. [Audio podcast]. National Public Radio. <https://www.npr.org/programs/ask-me-another/988011210/yo-yo-ma-civic-duty>. Published on NPR 16 April, last visited 6 May 2023.

of ANT and OOO that both Bogost and Bennett bring into the philosophical imagination.

PART 3: PA'O KHAYA

Since 2003, I have conducted ongoing ethnographic fieldwork with Pa'O musicians in Taunggyi, Shan State, Myanmar. The Pa'O had chosen (ca. 1915) to adopt and adapt the Anglo concertina (*khaya*), first received from British soldiers and Salvation Army officers, in the second decade of the twentieth century as a logical replacement to traditional free-reed bamboo mouth organs. *Khayas* are employed as instrumental accompaniment to long, sung historical narratives and religious texts.



Figure 2a and 2b (left and right): Pa'O musicians in Taunggyi, Shan State, Myanmar, 2003. Photos by Christopher A. Miller.

A commonality among all Pa'O *khaya* players that I have interviewed to the present is that they experience the musical instrument as their primary instructor in practice and performance. Eliot Bates looks to fiction to find explicit expressions of the agency of musical instruments to instruct the human musicians who play them. My ethnographic experience with Pa'O *khaya* players provides a real-life example. The following Pa'O *khaya* players, in individual interviews, emphatically claim to have come to *khaya* without previous experience; began a focused, physical relationship with the instrument; and learned to play *khaya* without formal human-to-human instruction but rather with the instrument (and its spirit) itself as mentor:

1. Khun Phra Tom Pha Khen
2. Khun Maung li
3. Khun San Veng
4. Khun Chaung Cam

5. Khun Kok Pha Phru
6. Khun Mo Phu
7. Khun Thun Rang
8. Khun Pho Chong
9. Khun Maw Thek
10. Khun Tha Li

Despite a sonically consistent style of Pa'O khaya playing across musicians, with some innovations thereof among individual performers, the story all Pa'O khaya players tell is one of encounter with their instrument. There is no human-mediated experience with an older mentor or exchange with a parent; nor is there the expectation of a practiced musician to share embodied knowledge with a younger generation. In fact, without knowing so, Pa'O narratives of khaya satisfy all three criteria of the power of thingness introduced at the beginning of this article. There is a slow, persistent khaya/player relationship that endures to result in musicking together. The duality of physicality/spirituality in each participant is porously shared in music production. As the khaya is known to find its player and vice versa, there is an "inorganic sympathy/strange attraction"²⁸ that brings the two together, apparently on equal terms.

Inspired by this clear illustration of agency for the khaya, and compelled by ideas generated within ANT literature, I want to compose my sense of the actor-network in relation *with* khaya. And this, I would argue, is one of the most useful impacts of ANT for the enterprise of ethnographic inquiry in organology. While one may be able to accomplish this task in narrative form, I have found in my own research that a visual image, one that moves closer to the lists and exploded-view diagrams of organology and Bogost, is best utilized for the purpose. After all, much like doing ANT in this manner, they are tools for clearly representing that which we seek to understand most broadly and deeply. The image I include below is meant only to provide an illustration of a use case for the ideas, but it is also exposing the insecurities and inadequacies of my own process. I would not consider the image complete, nor is it ever really meant to be. It exists

²⁸ Bennett, Jane (2011). Powers of the Hoard: Artistry and Agency in a World of Vibrant Matter. Vera List Center for Art and Politics, The New School. lecture given on 13 September, 2011. <https://youtu.be/q607Ni23QjA> Published on YouTube 27 September 2011, last visited 6 May 2023.

An additional service that the image below provides, for the purposes of this article, is to acknowledge in a shorthand manner the many aspects of my work with khaya that exist outside of the limited scope of this particular article and yet remain important to the research and destined for future publications. I could easily do the same with an illustration of the networks of literature and scholarship beyond my reference list that impact and inspire the ideas that I am sharing.

Levi Bryant suggests that “Objects require no subject to manifest themselves in the world . . . an object *does*. . . knowing an object . . . consists in knowing the *powers* or *capacities* of an object.”²⁹ In order to further demonstrate that his khaya was a vibrant actant in his musical life, Khun Phra Tom Pha Khen opened his khaya for me to photograph the Buddhist *yantra* [astrological/numerological chart] inside of the bellows of the instrument. Reflective of the syncretic merger of Theravada and Mahayana Buddhism practiced in Pa'O communities, this magic square evidenced the active spirituality of the instrument itself and its place in the larger cosmos of assertive existence and “thing power.”

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	၁၅	၂၄	၃၆	၇၈
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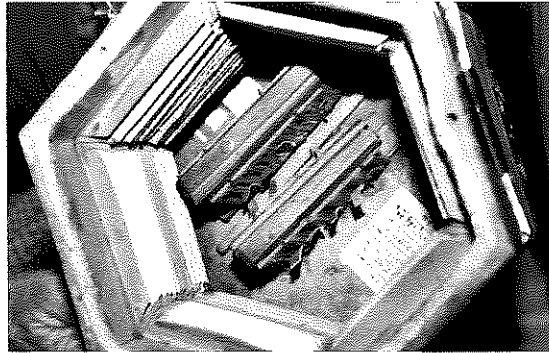


Figure 4a and 4b (left and right): Yantra inside the bellows of a Pa'O khaya. Scheme and photograph by Christopher A. Miller.

While a comprehensive engagement with the role of Buddhism in Pa'O society, and therefore musical culture, is beyond the scope of the present article, there are two aspects that I will touch upon briefly here. In each, I would argue that there is a relevant expression of khaya-being that serves the purpose of better understanding its actor-network and therefore the usefulness of ANT in this context. Suffice it

²⁹ Bryant, Levi (2010). *The Democracy of Objects*. London: Open Humanities Press, 88-89.

to say that Pa'O communities rely on an outward-facing tradition of strict Theravada Buddhist practice among a range of tools that help them maintain political autonomy (Pa'O Special Administered Zone 6, Shan State) and some measure of isolation and peace, even during the most recent political upheaval brought on by the 'coups d'etat' in 2021.

First, within both the imagery shared above and further extending into the textual content of the songs that khaya accompany, the supposed divisions in practice between Theravada, Mahayana, and even possibly Vajrayana Buddhism are notably traversed. For complex sets of reasons across generations of time and experiences of local, regional, and global colonial pressures, a contemporary practice of outwardly conservative and *Vinaya*-intensive Theravada Buddhism has settled into Pa'O lives. These pressures on humans in Pa'O society may manifest in restrictions that are otherwise subverted by other actants and their behaviors, a dynamic that is illustrated well in the work of Kate Crosby and Thomas Patton,³⁰ among others in religious studies disciplines. I would argue that khaya have the unique opportunity to express these "margins" of Buddhist practice in the context of Pa'O society.

Secondly, not entirely divorced from the above but closer to our shared fields' concern with musical practice, is the problem of the seventh precept among those that guide the behavior of a devoutly practicing Buddhist. This particular precept, one that restricts participation in "amusements" has been interpreted to include music among more conservative Theravada communities. Both Ter Ellingson and Jim Sykes have explored this aspect of Buddhism in musical communities and with regard to musical instruments specifically.³¹ Sykes is specifically and expertly detailed in description

³⁰ Crosby, Kate (2020). *Esoteric Theravada: The Story of the Forgotten Meditation Tradition of Southeast Asia*. Boulder, Colorado: Shambhala; Patton, Thomas N. (2018). *The Buddha's Wizards: Magic, Protection, and Healing in Burmese Buddhism*. New York: Columbia University Press.

³¹ Ellingson, Ter (1980). Ancient Indian Drum Syllables and Bu Ston's Sham Pa Ta Ritual. *Ethnomusicology* 24(3): 431–452; Sykes, Jim (2018). South Asian Drumming Beyond Tala: The Problem with "Meter" in Buddhist Sri Lanka. *Analytical Approaches to World Music* 6(2). Open online access via: https://journal.iftawm.org/wp-content/uploads/2022/02/Sykes_AAWM_Vol_6_2a.pdf, last accessed 25 September, 2023.

of performance conventions that elude the restrictions of the seventh precept. I would add here khaya to those instruments for which there has been a manner of performance practice and style that intentionally disrupts easy categorization as such an amusement that would limit its use in Buddhist communities. A full exploration of how this is accomplished must wait for future publication, but for the purposes of this article and its illustrations of agency, I am saying that this disruption is provided by the instrument itself as an actant in relation to the musician and musical tradition.

CODA: ORGANOLOGY HAS ALWAYS BEEN OBJECT-ORIENTED

In seeking to identify the source of “thing power”, Jane Bennett reached back centuries to Baruch Spinoza and the concept of “conatus” to name the drive “for all things to seek alliances with other bodies that enhance its vitality.”³² Bennett sets a stage for Bates’ previously cited question, “does the performer perform the instrument or the other way around?” The resultant tenor is not in any sense what Bates feared: absurdity. It is actually no question at all but rather a philosophical frame better reformed as a statement: the musician and the instrument always perform each other. The relationship may pivot per circumstance but is essentially flat at its core.

As has been demonstrated in the preceding decade and acknowledged again here, the overlapping concern of ethnomusicology and organology with musical instruments as objects benefits from the framework and tools of ANT. What remains to be seen, then, is the extent to which our fields may further push into the territory of OOO. There within is a greater expectation of de-centering the human and deconstructing the colonial, to be even more intentional in the pursuit of understanding, if imperfectly, the nature of the object in and of itself. As Tessa Leach implores us, “. . . to be anthrodecentric we must focus on the whole object and accept our psychological impression of

³² Bennett, Jane (2011). Powers of the Hoard: Artistry and Agency in a World of Vibrant Matter. Vera List Center for Art and Politics, The New School. lecture given on 13 September, 2011. <https://youtu.be/q607Ni23QjA> Published on YouTube 27 September 2011, last visited 6 May 2023.

it as just one side of the story.”³³ I would emphasize that organology has always been object-oriented and inherently resistant to anthropomorphism. With OOO, organology benefits from a rejuvenated lexicon and articulated philosophical framework for the description of existing organological research, already and historically reliant on non-narrative tools such as lists, charts, exploded view diagrams, and newer instruments such as FTIR Spectrometry, Polarised Light Microscopy, X-Radiography, as means of enriching the canon. Concurrently, by its dedication to the whole-scale illumination of musical instruments, the field of organology has a significant role to play by pushing OOO research into new territory and making new contributions of its own.

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³³ Leach, Tessa G. (2022). *Machine Sensation: Anthropomorphism and 'Natural Interaction with Nonhumans*. London: Open Humanities Press, 17.

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BIEGGA, ČÁHCI, DUODDARAT, AND OTHER 'GEO-PHONES': POLYORGANICITY OF SÁPMI AND ENVIRONMENTAL ACCOMPANI- MENTS TO SÁMI JOIK

Nicola Renzi¹

Abstract

Similarly to other circumpolar cultures, Sámi indigenous peoples from Arctic Europe have not developed specific interests in fostering a significant variety of musical instruments. Within ethnographic literature, this circumstance is read as a symptom of Sámi early semi-nomadic history and Arctic harsh conditions, which discouraged the carriage of burdensome instruments along reindeer trails, and rather catalyzed the development of a highly sophisticated vocal tradition. Joik is commonly defined as vocal music traditionally performed by individuals without any accompaniment and believed to originate from nature and "live" in open environments. Based on fieldwork and literature review, the paper discusses the nuanced boundaries around the idea of "accompaniment" within traditional and modern joik. From emic ontological and acoustemological perspectives, the Sámi interpret wind, rivers, boulders, and every feature of Sápmi environment as potential music actants capable of intervening polyphonically and polyorganically to the performance of joik. Additionally, contemporary Sámi musicians are increasingly introducing virtual reconstructions of Sápmi sonosphere to their productions by manipulating field-recordings as instrumental sounds. By presenting heterogeneous samples of Sámi land-based sound sources, practices and aesthetics, the notion of musical instrument is called into question, urging it past what is humanly manageable and opening it up to more-than-human ontologies.

Keywords

Circumpolar cultures, Sámi Indigenous peoples Environment, Polyorganicity

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Similarly to other circumpolar cultures, Sámi indigenous peoples from Arctic Europe have not developed specific interests in fostering a significant variety of musical instruments.² While early ethnographies conspicuously appear to have overlooked entirely the existence of musical objects in Sámi material culture, nowadays the Indigenous instruments documented and established in literature are only two: these are the 'goavddis' and the 'fádnu'.³

² Emsheimer, Ernst (1947). A Lapp Musical Instrument. *Ethnos* 12(1-2): 86–92; Senungetuk, Heidi Aklaseaq (2017). Indigenous Musics of the Arctic. *Oxford Bibliographies, Online Issue*.

³ It is important to acknowledge that the designation goavddis belongs to the Davvisámi (North Sámi) material tradition, while different nomenclatures and morphologies of the drum – such as govadas, goabdes, gievrie or rumbu – underline the linguistic and material diversity of Sápmi. As for the nomenclature of the fádnu, see below. Had in Emsheimer, Ernst (1947). A Lapp Musical Instrument. *Ethnos* 12(1-2): 86 already noted the presence of other rattles in the “older Lapp culture”. Apart from the fádnu and the goavddis, several other ‘sonorous’ objects are still crafted and employed within and outside Sámi ‘musical’ performances. While a footnote may not be the ideal space to bring light onto these cases, it is imperative to acknowledge the existence of a wider range of instruments that have been overlooked or even omitted in past and current literature.

Although some of these objects are found also in neighbouring Nordic music cultures, in her major work on the joik tradition Sámi researcher Maj-Lis Skaltje stresses the presence in Sápmi of willow bark whistles [ullogat], strung rattles made from rows of metal buttons on a cord [skuvanat], concussion reeds obtained from the vibration of two leaves pressed together by a bark frame [spižohat], vessels idiophones recovered from the metal buckets used during the cloudberry picking (spánnjat), a chordophone [bongolajka] with a single string – typically used for rievssat [Lagopus lagopus] hunting – fixed on one end to a resonator box while not fixed on the other end, where it is manually stretched through the aid of a knife [niibi] to obtain unstable pitches that imitate the flow of joiking. I owe this knowledge to conversations with juoigi and researcher Utsi, Mai Britt and Nicola Renzi (2022). Personal communication. September 21 in Guovdageaidnu; Skaltje, Maj-Lis (2005). *Luondu juoiggaha*. Guovdageaidnu: DAT.

Among the Eastern Sámi communities, in the Kola Peninsula, strung and stick rattles (known as ‘кэнниц’ and ‘шэрдэгк’ in Kildin Sámi language) are commonly crafted from reindeer hooves and antlers. Iakovlev, Roman and Nicola Renzi (2023). Personal communication. March 20 in Guovdageaidnu. I personally observed a strung rattle crafted in Gárasavvon and obtained from reindeer hooves strung in rows on a cord and struck by Inger Marie Nilut as rhythmic accompaniment to the performance of Bikko Biera luohiti (5 April 2023, *Etniin juoiggadeimme*, Davvi Division, Guovdageaidnu). In addition to these ‘more conventional’ idiophones, it is worth noting the significant role played by silver jewelry hung to traditional Sámi clothing (gákti, liidni, boagán). While dancing

The first one is a frame drum with a single usable membrane made from reindeer skin (*Rangifer tarandus*) and tightened to an ovoidal wooden shell whose structure and sizes used to vary regionally – as also the name of the instrument does. The head of the drum is traditionally decorated with a rich figurative system, and it is stroke with a special ‘T’ or ‘Y’ shaped mallet known as *veahčir* in Davvisámegiella (North Sámi language), obtained from reindeer antler and sometimes fur. Inside the frame, some *goavdát* present ornaments made from silver, animal teeth or bones, which considerably expand the sonic spectrum of the drum. Because of its traditional usage as oracular tool, the *goavddis* is not always regarded as a musical instrument, both in ethnographic literature and in Indigenous discourses.⁴ While its ancestral

and swinging to the music, these pendant rattles produce a characteristic jingling pulsation that adds to the overall soundscape of the performance. Reindeer bells are also a prevalent sonorous object in Sámi material culture, although they are not necessarily used for musical purposes and are managed by other-than-human beings (see below). To this list of idiophones, Soloviev has briefly described the presence of a whirling aerophone known as *Наввът* in the material culture of the Russian Sámi: Soloviev, Igor (2015). *Musical Instruments of Saami (Attempt to Understand Semantics of Ringing Tone)*. *Музыкальный Журнал Европейского Севера*, 3: 4.

- ⁴ The drums that survived the violent process of Christianization have been meticulously catalogued, described and analyzed by Ernst Manker in the two volumes that compose his seminal work *Die lappische Zaubertrommel*. For further readings, refer to Manker, Ernst (1938). *Die lappische Zaubertrommel. Eine ethnologische Monographie. 1: Die Trommel als Denkmal materieller Kultur* (Acta Lapponica, 1). Stockholm: Thule; Manker, Ernst (1950). *Die lappische Zaubertrommel. Eine ethnologische Monographie 2 – Die Trommel als Urkunde geistigen Lebens* (Acta Lapponica, 6). Stockholm: Geber. For an insightful and thorough emic perspective on craft, history, and spiritual significances of Sámi drums, I recommend the reading of a recent publication by Sámi handicraftsman and drum-maker Prost, Fredrik (2022). *Lenges hearggi Sáhčal fatnasa*. Guovdageaidnu: DAT. A detailed description of the process of Christianization with a specific focus on Sámi drums is offered in Rydving, Håkan (1991). *The Saami Drums and the Religious Encounter. The Saami Shaman Drum Based on papers read at the symposium on the Sami shaman drum held at Åbo, Finland, on the 18th-20th of August 1988*. Edited by Tore Ahlbäck and Jan Bergman. Turku: The Donner Institute for Research in Religion and Cultural History, 28-51; Rydving, Håkan (1995). *The End of Drum-time: Religious Change Among the Lule Saami, 1670s-1740s*. Stockholm: Almqvist & Wiksell International. It is of utmost importance to recognize that the drums which survived the systematic destruction perpetuated by the Church were forcedly taken away from Sámi communities, and those that were not lost ended up dispersed in many European museums and private collections. In recent years, an Indigenous-led process of repatriation (*máhcaheapmi*) of Sámi artifacts has begun to bear fruits. However, of the 72 remaining drums, only four are today in possession of Sámi museums. For an overview of the contemporary return of Sámi drums, see *RUOKTOT – Sámi rumbbuid máhcaheapmi* (2022). [Exhibition]. RiddoDuottarMuseat (2022).

ritual purpose was not that of music-making – whether this term can be applied at all to Sámi traditional sonic practices – in the second half of the last century the *goavddis* underwent a radical refunctionalization which led it to achieving a protagonist role in the Indigenous anti-colonial resistance empowering, in this case, legitimately called music performances.⁵

The second “autoctone” musical instrument of the Sámi is an ephemeral aerophone which today is seldomly crafted or even regarded to as extinct.⁶ Designated as *fádnu* (or *fadno*) in the sporadic ethnographic mentions, it is an idioglottic double reed instrument obtained by the crafting of the fresh stalk of the *Angelica archangelica* – also known as *fáddno* in Bidumsámegiella (Pite Sámi language). Most of the existing sources seem to trace the *fádnu* back to the material tradition of the Sámi who live along the streams and waterways that run diagonally

RUOKTOT – Sámi rumbbuid máhcaheapmi (2022). [Exhibition]. RDM. Kárášjohka. 12 April 202 to 7 September 2023; Gaup, Káren Elle, Inger Jensen, and Leif Pareli (2021). *Bååstede. The Return of Sámi Cultural Heritage*. Trondheim: Museumsforlaget..

- ⁵ A valuable source providing deep insights on Sámi rhythms, as well as on traditional and modern drumming is currently being developed by Jakop Janssøn through his doctoral research and the accompanying podcast Janssøn, Jakop (Host). (2023, April 18). Øistein Hanssen - Det var nesten slik at joiken bodde i stilken (No. 9) [Audio podcast episode]. Sámi ritmmat / Samiske rytmer. Apple podcasts. Available at <https://podcasts.apple.com/no/podcast/s%C3%A1miritmmat-samiske-rytmer/id1668111804>, last visited 21 September, 2023. I also recently explored the refunctionalization of Sámi drums in Renzi, Nicola (2020). The Sami Drum from Oracular Rituality to Musical Performance. *Sound Ethnographies* 3(1), 13-46. For an overview of the recent transformations of the morphology and figurative systems of Sámi drum see also Joy, Francis (2014). What Influence Do the Old Sámi Noaidi Drums from Lapland Play in The Construction of the New Shaman Drums by Sámi Persons Today? *Folklore* 56, 117-158; Renzi, Nicola (2022). “What Will the Spirits Tell Us about the Events to Come?»: Mapping the Environmental Crisis on a Sami Noaidi Drum. *Book of Abstracts of the 46th World Conference of the International Council for Traditional Music*. Aveiro: UA Editora.
- ⁶ Through the valuable insights shared by Jakop Janssøn on his podcast *Sámi ritmmat / Samiske rytmer*, I came to know about the only Sámi player of *fádnu* known today: Øistein Hanssen. To his knowledge, Hanssen is the only Sámi that still crafts and plays the instrument – even though seldomly because of its ephemeral nature. For a rare and insightful description of history and crafting of the *fádnu* presented by a maker and practitioner of this instrument, listen to Janssøn, Jakop (Host). (2023, April 18). Øistein Hanssen - Det var nesten slik at joiken bodde i stilken (No. 9) [Audio podcast episode]. Sámi ritmmat / Samiske rytmer. Apple podcasts. Available at <https://podcasts.apple.com/no/podcast/s%C3%A1miritmmat-samiske-rytmer/id1668111804>, last visited 21 September, 2023.

across the Swedish side of Sápmi; the mountainous rivers and coniferous forests which characterize this region offer ideal habitats for the plant to thrive.⁷ The first mention of the fádnu is attributed to Emilie Demant-Hatt, who erroneously labeled it as a flute.⁸ Karl Tirén first recorded its sound on wax cylinder in 1914, while a more comprehensive examination and identification of the fádnu was conducted by Ernst Emsheimer in 1947 based on the direct observation of four specimens crafted by Nils Nilsson Skum, collected by Demant-Hatt and dispatched to him by Ernst Manker.⁹ As Emsheimer noted in his account on the fádnu, the plant «has given its name to the instrument, and at the same time supplies also the material».¹⁰ The German organologist looked at the aerophone as the sole *genuine* musical instrument of the Sámi because of the ritual purpose of the drum and by virtue of its melodic nature, allowed by the finger holes cut in the stalk of the plant.

The circumstance of such an apparently scarce variety of musical instruments is read as a symptom of Sámi early semi-nomadic history and Arctic harsh conditions, which discouraged the carriage of burdensome objects along reindeer trails, and rather catalyzed the development of a highly sophisticated vocal tradition – juoigan. The early understanding of juoigan (hereinafter ‘joik’) has been that of a cultural practice exclusive to humans. Specifically, it is defined as vocal music

⁷ Kylin, Madeleine (2010). *Angelica archangelica* L. Alnarp: Swedish University of Agricultural Sciences, 16; Lüderwaldt, Andreas (1980). *Samish Music. The New Grove Dictionary of Music and Musicians*. Edited by Stanley Sadie. London: Macmillan Publishers Ltd, 449-452; Jousté, Marko (2001). Porosaamelaisjoiuin säveljärjestelmän tutkimuksen piirteitä. *Etnomusikologian vuosikirja* 13, 149.

⁸ Demant-Hatt, Emilie (1913). *Med lapparne i højfeldet. Lapparna och deras land II*. Stockholm: n.p.

⁹ Tirén's recording of the fádnu can be found in Tirén, Karl (1914). *Karl Tiréns jojkinspelningar på fonografrullar, 1913-1915*. Svenskt visarkiv. Accession SVA CYL 0359. (<https://katalog.visarkiv.se/lib/views/kt/Show-Record.aspx?id=1355805>), while a brief description of the instrument is also included in Tirén, Karl (1942). *Die Lappische Volksmusik: Aufzeichnungen von Juoikos Melodien bei den schwedischen Lappen* (Acta Lapponica, 3). Stockholm: Geber.

¹⁰ Emsheimer, Ernst (1947). A Lapp Musical Instrument. *Ethnos* 12(1-2): 87. It is worth noting that ‘fádnu’ is the name for the one-year-old plant, its leaves and for the plant without buds, while the two-years-old, fully grown and flowering plant is called ‘boska’. Moreover, in Davvisámegiella, the full plant is also known as ‘olbmoborranrássi’, which literally means “edible grass for humans” as it is used both for medicinal and food purposes; Inga, B. and Ö. Danell (2013). Traditional ecological knowledge among Sami reindeer herders in northern Sweden about vascular plants grazed by reindeer. *Rangifer* 32(1): 1–17.

traditionally performed by individuals without any accompaniment, whereas Indigenous oral accounts admit also its other-than-human derivation and believe it to originate from nature and to live and thrive in open environments.¹¹

With this paper I discuss the nuanced boundaries around the idea of ‘accompaniment’ within traditional [árbevirolaš] and modern [ođđa] joik. From emic ontological and acoustemological perspectives, the Sámi interpret wind [biegga], water [čáhci], mountains [duoddarat], and every possible feature of Sápmi environment as potential sonic actants capable of intervening or accompanying polyphonically and – as this paper tries to demonstrate – polyorganically to the performance of joik. Additionally, contemporary Sámi juoigut and musicians are steadily incorporating virtual reconstructions of Sápmi ‘sonosphere’ to their productions by manipulating field recordings and nature samples as instrumental sounds. These sonic and musical sources, both past and contemporary, seem to confirm the necessity to address and call into question the notion of musical instrument in Sámi and other Indigenous frameworks, urging it past what is only humanly manageable and opening it up to other-than-human axiologies. A thorough joint examination of Indigenous onto-epistemologies and post-humanist approaches advances a valuable opportunity to challenge the limits of the current systematic by offering it to diverse, intersectional readings.

A promising starting point for commencing this examination can be found in the early engagement of Sámi juoigut and artists with audio

¹¹ Valkeapää, Nils-Aslak (1983). *Greetings from Lapland* (tr. by Beverly Wahl). London: Zed Press, 59. Similar suggestions may be found in Turi, Johan (2010). *Muitalus sámiiid birra*. Stockholm: Nordiska Bokhandeln, 211; Gaup, Ailo (1982). *Joiken og kniven*. Oslo: Gyldendal, 83; Valkeapää, Nils-Aslak (1985). *Ruoktu Vaimmus*. Guovdageaidnu: DAT; Valkeapää, Nils-Aslak (1988). *Beaivi, áhčážan*. Guovdageaidnu: DAT, poem 51; Stoor, Krister (2007). *Juoiganmuitalusat. Jojkberättelser. En studie av jokens narrativa egenskaper*. PhD Dissertation. Umeå: Umeå universitet, 126; Ramnarine, Tina (2009). *Acoustemology, Indigeneity, and Joik in Valkeapää’s Symphonic Activism: Views from Europe’s Arctic Fringes for Environmental Ethnomusicology*. *Ethnomusicology* 53(2), 187-211; Valkonen, Jarno and Sanna Valkonen (2018). *Viidon sieidit: saamelaisen luontosuhteen uudet mittasuhteet*. Anar: Kustannus Puntsi. 42; Aubinet, Stéphane (2020). *The Craft of Yoiking: Philosophical Variations on Sámi Chants*. PhD Dissertation. Oslo: Universitetet i Oslo. I personally encountered similar perspectives on beyond-human agency in joiking during my fieldwork: Sara Jr. Johan and Nicola Renzi (2021). Personal communication. 29 April 2021 in Máze; Aikio, Ante and Nicola Renzi (2021). Personal communication, 2 June in Levi; Somby Ánde and Nicola Renzi (2021). Personal communication. 11 June in Sirbma.

technology and music production. These intersections provided a fertile ground for exploring and finding both local and global aesthetics and – on a meta-discursive level – they underscore the innovative contributions of Indigenous musicians and artists in shaping traditional and contemporary music ecologies. The joik of the herding journey known as “Johtin luohiti”, performed and recorded by the legendary Sámi artist Nils-Aslak Valkeapää (also known as Áillohaš), serves as a prime example of this intersection. “Johtin luohiti” is the opening track of the *Joikujá* LP, a pioneering album that Áillohaš released in 1968 and which initiated the music genre of “modern joik”. After being stigmatized for over five centuries of colonial coercion and assimilation, joik managed to re-emerge from the silence it was coerced to by opening the traditional parameters to «a remarkable variety of instrumental ensembles» and styles, which rendered modern joik acceptable in the Nordic Countries, but also contributed to the local revitalization of joik in its traditional virtues.¹²

Three are the major innovations introduced by *Joikujá* album. In the first place, it is the earliest joik recording produced and authored by a Sámi juoigi, marking a crucial and unprecedented moment of cultural sovereignty for Sámi arts. Secondly, it is the first recording of joik accompanied by musical instruments, exemplified by the guitar arpeggio in ‘Johtin luohiti’: this innovation reflected the flourishing and adaptive nature of Sámi culture, an idea that was strongly held by Áillohaš.¹³ Thirdly but equally important, *Joikujá* is the first joik recording incorporating environmental sounds as an integral part of the composition, a feature that deserves further attention, as it not only highlights the importance of aural environmental knowledge but was also functional in preserving crucial aesthetics and ecological aspects of traditional joik.

By incorporating samples of reindeer bells tinkling, dogs barking, people shouting, and wind blowing, the use of environmental sounds in joik recordings aimed at enhancing the perhaps primary objective of joik performance, that is to evoke the subject of the joik – in this case reindeer herding activities. On the other hand, as noted by Jones-Bamman in his seminal work on the history of modern joik, field recordings

¹² Jones-Bamman and Richard Wiren (1993). “As long as we continue to joik, we’ll remember who we are.” *Negotiating Identity and the Performance of Culture: The Saami Joik*. PhD Dissertation. Washington: University of Washington, i.

¹³ Valkeapää, Nils-Aslak (1983). *Greetings from Lapland*. London: Zed Press, 57-58.

gave the “outdoors [its] own ‘voice’” and played a crucial role in virtualizing the soundscape within which joiking was traditionally expected to be heard and performed.¹⁴ Such a sonic virtualization, in turn, was able to suggest a more intimate relationship between the juoigi, the listener, and the joiked subject. In other words, the incorporation of Sápmi nature sounds into joik recordings resulted in a re-inscription of the vocal practice and its reception within their traditional milieu – in the open and relational environments where joik arises and thrives.

The significance of open environments as essential conditions and requisites for joik performances is not uncommon in both written and oral accounts relating to this vocal tradition. Finnish folklorist Samuli Paulaharju argued that a Sámi “does not joik inside the house, because within the walls the voice does not resonate as grandly and freely as it does in the open air and on the high fells”.¹⁵ A comparable perspective seems to regularly echo into the present. Beverly Diamond, for example, recounts the criticisms of Sámi juoigit towards the recording studio (where modern joik productions are created) as a space often characterized by a cold acoustic environment that is deemed unsuitable for the traditional expression of joik.¹⁶ During a conversation with Sámi rapper and producer Ailu Valle I have been personally reminded of this sense of uneasiness, as well as about the challenges of bringing a joik into the recording studio. According to Ailu Valle, the environment where joik is traditionally performed is very different from that of a studio. In the open air, a juoigi can interact with other people, with the sounds of birds, wind, waters, snowmobiles, but also benefits from natural reverb and echoes that are formerly absent in the studio. As Ailu Valle explained, when you bring «a joik into the studio [it] sounds

¹⁴ Jones-Bamman and Richard Wiren (1993). “As long as we continue to joik, we’ll remember who we are.” *Negotiating Identity and the Performance of Culture: The Saami Joik*. PhD Dissertation. Washington: University of Washington, 283.

¹⁵ Paulaharju, Samuli (1922). *Lapin muisteluksia*. Helsinki: Kustannusosakeyhtiö Kirja, 131. The original text states: “[k]odassaan ei lappalainen joikaa, sillä seinien sisässä ei ääni lähde hyvästi ulos eikä soi niin komeasti ja vapaasti kuin ulkoilmassa ja korkeilla tuntureilla”.

¹⁶ Diamond, Beverly (2007). “Allowing the Listener to Fly as They Want to”: Sámi Perspectives on Indigenous CDProduction in Northern Europe. *The World of Music* 49(1), 25-26; Diamond, Beverly (2017). *Mixing It Up: A Comparative Approach to Sámi Audio Production*. *Music, Indigeneity, Digital Media*. Edited by Thomas R. Hilder, Henry Stobart and Shzr Ee Tan. Cambridge: Cambridge University Press, 110.

so dry... There's absolutely no echo in it. It sounds unnatural». ¹⁷ To address this, the Sámi rapper suggested that reverb is almost an obvious choice when it comes to monitor and mix a joik in the studio, and this is likely why reverbs and echoes have become standard in Sámi music production. ¹⁸

If in the previous conversation, Ailu Valle primarily discussed the value of virtual sound effects in joik recordings, Ánde Somby, a prominent juoigi with whom I collaborated during my recent fieldwork, placed great importance on the actual interaction between joik and other-than-human sound events:

“Bringing a joik into a studio can be challenging, you know... It is a very dry room with very little inspiration, filled with microphones that communicate a serious atmosphere: a one-time thing! It is not impossible, but it takes a little bit of training to overcome it. Studio dries out the joik. [...] I love to [sonically] interact with my surroundings. It's like being in a band with wonderful musicians in interplay with you. There is the bird on one side, the river flowing on the other, and there is the wind, the echoes of the mountains...” ¹⁹

Perhaps my research emphasis on soundscapes and echosystems, rather than on the isolated vocal tradition, has influenced my experience with Sámi joik revealing a notable interaction – or «interplay» – between the juoigi and the sonic environment in which the performance occurs. This dynamic could be described as a form of eco-poliphony, wherein the juoigi and the surrounding environment engage in a mutually transformative sonic exchange.

Further examples of the interplay between performers and their sonic environment were encountered during previous conversations with juoigitt from different parts of Sápmi. These findings suggest that this may be a stimulating area for further research and exploration. For instance, Mathis Eira, a young juoigi from Guovdageaidnu whom I met during a *dollagáttis*, an informal outdoor gathering around a provisional fireplace, pointed out that the rhythm of joik performed in open

¹⁷ Ailu Valle, personal communication, 7 May 2021, Avvil.

¹⁸ The juoigi and producer Johan Sara Jr. shared with me similar observations; Sara Jr. Johan and Nicola Renzi (2021). Personal communication. 29 April 2021, Máze.

¹⁹ Somby Ánde and Nicola Renzi (2021). Personal communication. 11 June in Sirbma. On a related note, it is important to recognize also how on the same occasion, a few moments later, Ánde Somby described himself as a juoigi that can joik in every environment and often even offered his support to fellow juoigitt to help overcome the feeling of discomfort in the studio setting.

environments can be dictated by various sonic sources, such as the sound of waves lapping on the lakeshore, the rustling of foliage on the ground, the interaction between the wind and the fire or surrounding rock surfaces, and the sounds of birds singing and mosquitoes buzzing around the performer. These elements help to «set the joik in motion» and they sustain the performance providing rhythmic and, at times, harmonic support.²⁰ A similar pattern occurred during a concert I curated for the Istituto Interculturale di Studi Musicali Comparati (IISMC) and the Sámi Pavilion of the 59th Venice Biennale, where the prominent joigi Sara Marielle Gaup Beaska joiked the Deatnu river while rhythmically engaging with the undertow of the waves breaking on the nearby canal pier.²¹ Another joigi and reindeer herder from Guovdageaidnu reported that when she follows the reindeer on the duoddarat with her snowmobile, the engine sound of the vehicle occasionally provides a bass line which triggers the spontaneous performance of joik.²² Similarly, another young joigi recounted how she would occasionally begin to hum joiks while shopping at the local supermarket, where the ventilation system serves as a ‘really nice drone’ over which the joik arises almost instinctively.²³ These observations suggest that the performance of joik may be stimulated and influenced by a range of environmental factors, including anthropic sound sources, which naturally provide valid rhythmic, melodic or harmonic support to the traditional *a cappella* performance. As such, these examples seem to leave little room to the former ethnographic definition of joik as exclusively ‘unaccompanied’ vocal music.

Although not all the informants I have discussed these themes with agreed on the conceptualization of the landscape as proper musical instrument – which is a rather reasonable stance – this idea was brought up more than once (implicitly or as explicit metaphor) in the conversations with Sámi joigits, carrying along cues and impressions of organo-

²⁰ Mathis Eira, personal communication, 21 September 2022, Suohpatjávri.

²¹ Sara Marielle Gaup Beaska’s engagement with the surrounding Venetian soundscape is not an isolated occurrence. On March 2, 2023, during recent demonstrations carried out by young Sámi activists in Oslo, the rhythmic repetition of the rallying cry “CSV” created a soundscape powerful enough to ignite (or in Mathis Eira’s words, to “set in motion”) a powerful joik in Sara Marielle’s voice. This interplay empowered the young actionists who were opposing the ongoing human rights violations in Fovsen-Njaarke, South Sápmi.

²² I recently had the opportunity to witness and record a similar (fugacious) performance during the Easter Festival celebrations in Guovdageaidnu, 2023.

²³ Hilda Länsman, personal communication, 4 February 2023, Guovdageaidnu.

logical interest. By applying the von-Hornbostel-Sachs classificatory principle, which categorizes instruments based on the nature of their first vibrating body, we can examine wind, rivers, mountains, and other biotic and abiotic features of the land as polyorganic components of an immense musical instrument embodied by the land and which served as an ancestral accompaniment to traditional joik performances since time immemorial.

Organologically speaking, the sound of the wind is appreciable only in relation to the nature of the surface it interacts with, as the latter specifies the wind's unique "dialectal variety".²⁴ The wind, as atmospheric phenomenon, excites and sets in vibration lands and waters in diverse ways, depending on variables such as its velocity, direction, and the quality of the materials it passes through. In his renowned poem *Ruoktu Vaimmus* (1985), Áillohaš poetically alluded to this phenomenon in terms of a symphonic "resonance":

<i>dáid duoddariid alihis</i>	From these blue tundras
<i>gulan eallima muitalusa</i>	I hear the story of life
<i>biekkain jogain vumiin</i>	winds rivers forests
<i>juoigame</i>	yoik
<i>ja duoddariid biekkat juige</i>	And the tundra's winds yoiked
<i>vumiin gorssain legiin vuonain</i>	in the forests gorges valleys fjords
<i>čuojai luonddu sinfoniia</i>	the symphony of nature resounded

To further explore these discourses, it is relevant to delve into another piece of Áillohaš' work, specifically his collaborative composition with Seppo Paakkunainen, *Juoigansinfoniija* – the "Symphony of Joik" (1994). The second movement of the symphony is entitled "Humadii, duoddarat juige" and features interesting ambiguities, both on musical and linguistic perspectives, which seem to directly speak to the issues identified earlier in this paper. It is noteworthy that in the album booklet the English title for this movement is "Drone, joik of the hills". However, a more in-depth linguistic analysis of the Sámi title reveals deeper insights into the ontologies and epistemologies embedded in the piece.

Upon closer examination, for example, it becomes clear that the phrase "Humadii, duoddarat juige" consists of two coordinated syntactic units (sintagma verbale) where the first is composed of the sole preteritum of the 3SG of the verb "humadat" [to talk], while the second one is built around the preteritum of the 3PL of the transitive verb "juoigat"

²⁴ Schafer, Raymond Murray (1977). *The Tuning of the World*. New York: Knopf, 22.

([to joik]. Whilst “Humadii” is a sentence fragment missing its subject, the “duoddarat” appear as the main actant, the performative subjects of the verb “juige”. It is important to note that, in spite of what the English title seems to suggest, the theme we hear in this movement is not the joik ‘of’ the hills in the sense of a *luohti* (the rhythmic-melodic formula of a joik) aimed at evoking the hills. Instead, a listener familiar with the broad joik repertoires will recognise that the *luohti* – which has a thematic role within the movement and is symbolically entrusted to wind instruments – is that of the ‘joik of the wind’ [*biegga luohti*]. Hence, it can be deduced that in the second syntactic unit the hills [*duoddarat*] were joiking the wind [*biegga*].

But how can such a static, inorganic and silent element such as a hill perform a joik? Addressing this question requires careful consideration of Sámi onto-epistemologies. However, the organology of wind presented above may aid in attenuating the seemingly perplexities within a Western aural understanding of the phenomenon: a hill can joik because it is sonically excited by the wind, caressing its surface and passes through the trees, bringing the *duoddarat* and the surrounding nature to resonate, as poetically rendered by Áillohaš in his art. If playing a musical instrument requires mastering the craft of reproducing recognizable and appropriate sounds, the recognizability of the *luohti* in the symphonic movement facilitates in grasping the skillful animacy of wind as performer, and the Land – Earth – as resonator.

The organological implications of the natural environment and the brief field cases exemplified earlier converge in the genesis of this paper’s title and its exploration of what I provocatively refer to as *geo-phones*. As the spelling already specifies, the term *geo-phones* used in this paper should not be conflated with the concept of *geo-phonies*, as used in the field of soundscape ecology to describe non-biological sounds in the environment, and neither with the *geophone* sensor used to detect vibrations in the ground or from various surfaces. Rather, the concept of *geo-phone* employed here could serve as a classificatory tool to expand the traditional systematic by opening it up to musical sources found beyond human agency.

It must be emphasized again that my intent in this paper is utterly provocative. The word “instrument” carries in the connotation of something constructed or at least implemented by human craft, rendering its definition seemingly incompatible with natural phenomena such as wind or rivers. However, this etymology only holds true for ontologies constructed upon nature-culture dichotomies... and Sámi ontologies,

along with many other Indigenous and non-indigenous worldviews, are alien to this perspective. Another criticality in adopting the class of geo-phones is that its definition may conflict with one of the primary objectives of the Hornbostel-Sachs classification, which formerly included a critique to the overlap between classes in earlier systematics. Depending on various factors, wind, rivers, and boulders can be already classified as aerophones, membranophones, or idiophones before being geo-phones, and vice versa. A third complication – to which specific attention is reserved in the final pages – arises when one considers natural elements such as wind, water, or rocks as musical instruments not when they sonically interact between each other, but rather when their sound is sampled and incorporated into a music production. In the latter case, one could argue that the musical instrument is either the transducer capsules excited by the physical nature of the phenomena or the digital audio workstation (DAW) that carried out instrumental manipulations.²⁵

While a number of traditional Sámi juoigut may have often felt discouraged by the aridity of the studio, it is imperative to note how many others saw this new space as an exciting and ideal opportunity to leverage new technologies in «crafting culturally distinct forms of communication and artistic production» that were reflective of local aesthetics and ecologies, while also addressing larger audiences.²⁶ In light of their inherent unmanageability by humans, the inclusion of other-than-human sounds in the environment as polyorganic instrumental elements may be perceived as a radical notion within the organological discipline. Nonetheless, the sampling and manipulation of natural sounds in the most recent Sámi music productions raises compelling questions.

What can we learn, for example, from the use of waterscapes in the track “Vuolggán juostá – Somewhere I start”, released by Sámi composer and artist Johan Sara Jr. in the album *Rievdadus – Transmission* (2010)?²⁷ This modern joik evokes the fluid transformations of a river across time and space in the tundra, tracing its journey from the inland

²⁵ Bell, Adam Patrick (2018). *Dawn of the DAW: The Studio as Musical Instrument*. Oxford: Oxford University Press.

²⁶ Diamond, Beverly (2017). Mixing It Up: A Comparative Approach to Sámi Audio Production. *Music, Indigeneity, Digital Media*. Edited by Thomas R. Hilder, Henry Stobart and Shzr Ee Tan. Cambridge: Cambridge University Press, 107.

²⁷ Johan Sara Jr., *Vuolggán juostá - Somewhere I Start*: <https://www.youtube.com/watch?v=CJmN3BIRSK4>, last visited 23 April 2023.

to the coast, from the static silence of winter to the tumultuous roars of the spring. To virtualise and to communicate such a transmission of energies – as the river “get[s] stronger for every meter” – Johan Sara Jr. implements the sounds of water he sampled in the field by manipulating their pitch, their timbre, their density and intensity, but also by organizing them in patterns which clearly contribute to the design of a rhythmic, harmonic and ecological accompaniment.²⁸ Can we hear or interpret these expressions of the river as instrumental sounds? If we acknowledge their instrumental potential, then again, we must reflect also on the instrumental nature of non-manipulated soundscapes that hold significant meaning in the environmental accompaniment to the traditional performance of joik.

The class of geophones appears undoubtedly too contingent for a comprehensive systematic arrangement that aims at providing practical means of identifying and describing such diverse cultural, material and ontological expressions. Certainly, the intention of this text is not to provide definitive answers or to advance novel systematic classificatory principles. Rather, my aim is to contribute to foster a dialogue that encompasses new perspectives, led and alimanted by past and present Indigenous ontologies, as well as by historically marginalized systems of knowledge that have often been silenced by Western ontologies, from which the current systematic approaches are derived and limited to.

The bottom-up character of this approach to organology prompts us to delve deeper into questions that more broadly address the decolonization of Western sciences, knowledge production and arts: how do we, as ethnomusicologists and organologists, approach the ontological gaps in the analysis of environmental sounds and natural accompaniments in musical performances? How can Indigenous Knowledge inform our understanding of the limits and potentialities of the current systematic? Might the current definition of “musical instrument” be imposing a rigid structure that overlooks and even denies ancestral *musical* ontologies that hold significance for the Sámi? To what extent is the notion of “instrument” limited to the materiality of the musical source, rather than encompassing the ontological and aesthetic frameworks around it? And temporarily setting aside the consideration of geophonic environmental sounds, how might we reflect upon sonorous objects – such as reindeer bells – which are crafted by humans

²⁸ From the booklet of the album Sara Jr., Johan (2010). *Rievodadus*. Norway: DAT.

while their sonic management is enacted by other-than-human beings? To what criteria can these instruments be studied as “musical” in comparison to the sound of elements such as wind, waters, and mountains, which are not typically considered as such? Beside the already controversial concept of “music”, perhaps it is the term “instrument” itself that imposes boundaries that are not always pondered by non-Western ontologies, urging it past what is only humanly craftable, implementable, and manageable.

The case of environmental accompaniments to Sámi joik is not unique, as the growing recognition of other Indigenous onto-acoustemologies and post-humanist positions in Academia calls for the opening of unprecedented spaces for reflections addressing and questioning the world we have long taken for granted. Both traditional and contemporary Sámi musical practices stimulate alternative perspectives to the criticalities which this working paper has sought to address.

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EMBRACING NATURE FOR CULTURAL CONTINUITY: WAZA TRUMPETS AND THE MUSICAL TRADITION OF THE BERTA

Timkehet Teffera¹

Abstract

The present study results from an ethnomusicological field research carried out in 2005 Benishangul Gumuz region of western Ethiopia². This region is famous for its plentiful flute, trumpet and animal horns observed in nearly every village of the Berta³ communities inhabiting the border regions of both Ethiopia and the Sudan. My investigation will provide a detailed examination of end-blown gourd trumpets called waza. It explores the traditional production process of these musical instruments, a special skill transmitted orally for generations. All materials used for waza making derive from what nature provides. For that, traditional and experienced instrument makers plant special gourds suitable to construct wazas in sets of up to 12 variously sized and tuned tubes. The study elucidates the century-old oral tradition of instrument making among the Berta. It also explores a waza ensemble performance, i.e. the instrumental setting, sound production related with the hocket technique, as well socio-cultural features. Video and audio recordings as well as photos taken during the fieldwork in the villages Inzi Shederia, Gambella and Nifro Gebeya located in close proximity of the region's capital, Assosa.

Keywords

Sudan, Ethiopia, Waza, End-blown trumpet, Ensemble music

SOME BACKGROUND

The Berta people populate the border of western Ethiopia and eastern Sudan. My journey to the Ethiopian Berta from the Benishangul

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² The administration of the regional state, the district's head, the musicians and attendees of the music performance deserve my gratitude for their kind cooperation.

³ Also called Berta, Bartha, Burta, Berta, Beni Shangul, Bela Shangul, Wetawit. According to Sheik Almahadin Hojele (2005) the term Benishangul derives from the words Ben and Shangul that means "people of a quarry".

Gumuz Region, was part of a 6 months East African trip in five countries. The main focus of this research journey aimed at collecting relevant data on all types of wind instruments (aerophones). The first investigated country was Ethiopia, where I explored the musical tradition and cultural assets of the Berta and collected relevant data. Accordingly, it was not only waza trumpets I examined, but also various flute ensembles representing nearly every village of the community. Apart from several ensembles I recorded on the spot (audio-visual), the recording of the waza ensemble took place in the small locality called Gambella, located not far from Assosa, the region's capital.

At the outset, it would be important to give some highlights about the Berta group, their settlement area as well as their social, cultural, and religious backgrounds. Clans like the Madbis, Faghawaji, Fatoga, Gamili and Fadashi showcase the community. Each clan lives in a separate settlement led by a chieftain, or a sheikhdom. The Ethiopian Benishangul Gumuz region is made up of six administrative zones. In Sudan, the Berta reside in localities called Ad-Damazin (also Ad-Damāzīn) and Rosaries paralleling the Ethiopian border⁴. Regardless of their settlement area, all Berta communities in both Ethiopia and Sudan share common historical, social, cultural, religious, and ritualistic assets, values, experiences and settings. Based on these common backgrounds, they consider themselves as one people divided by the political borders of Ethiopia and Sudan⁵. In the course of history, several migratory waves took place in the border region of the two countries, namely from Sudan to Ethiopia, especially in the nineteenth century. The reason might perhaps be related with overpopulation or escaping Arab slave traders who controlled the region for a long time.

The Berta primarily speak the tonal language bearing the same name and deriving from the Nilo-Saharan linguistic family. Arabic and Amharic are additional languages⁶ spoken by the Berta following the expansion of Islam, and other external and internal penetrations in the

⁴ Simon, Arthur (2003). *Die Musik der Berta am Blauen Nil*. (Recordings made 1982/83 and commentary). Museum Collection Berlin, SM 17082, Berlin: WERGO, 3.

⁵ Günther, Robert (1972). *Die Sozialstruktur im Spiegel musikalischer Konvention bei den Völkern Westäthiopiens*. *Jahrbuch für musikalische Volks- und Völkerkunde* 6, 51.

⁶ Cerulli, E. (1947). *Three Berta Dialects in Western Ethiopia*. *Journal of the International African Institute*. 17(3): 157.

19th century. Consequently, the influence of the Funj Sultanate, Sudanese Arabs, the Mahdist, and central Ethiopian royal kingdoms may be quoted as examples⁷. Due to these and other factors, the Berta have been suffering political, cultural and religious penetrations over a long period. It is furthermore, believed that in the Berta were brought to Ethiopian capital, Addis Ababa, as slaves triggered by the flourishing slave trade that was controlled by the most powerful Sheikh Khojele and his family around the end of the 19th century. The business not only included Ethiopia, but also Sudan.

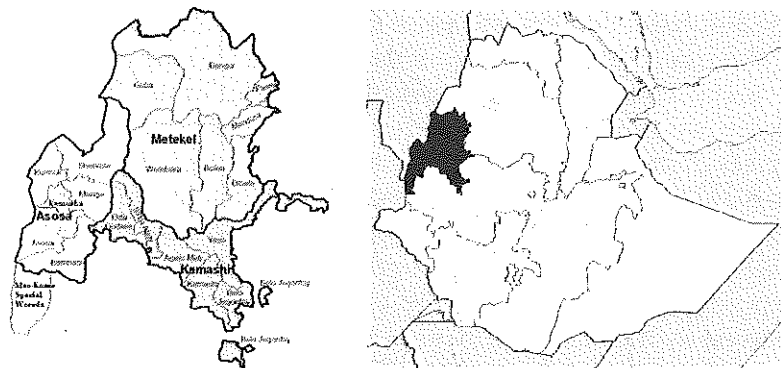


Figure 1a-b: Map of the Benishangul Gumuz Region⁸; complete map of Ethiopia indicating the location of the region

Islam was introduced to the Berta in the nineteenth century. The main reason for the initially peaceful penetration and expansion of the Muslim faith was primarily the commercial potential of the Benishangul Gumuz region. Despite the massive conversion of the Berta to Islam, a

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- ⁷ Møller, Bjørn (2004). *Regional Security in the Horn of Africa*. Paper for the 9th International Congress of the Somali Studies International Association on Diaspora and State Formation in the Horn of Africa, Aalborg University, 3-5 September 2004; <http://www2.ihis.aau.dk/development/Somali%20papers-%20pdf%20format/Bjorn%20Moller.pdf>, last visited 30 May 2020, 70-71; Simon, Arthur (2003). *Die Musik der Berta am Blauen Nil*. (Recordings made 1982/83 and commentary). Museum Collection Berlin, SM 17082, Berlin: WERGO, 49.
- ⁸ Worku, Hailu (2015). *Environmental and Social Impact Assessment Capacity Building Plan for Local Governments in Ethiopia*. Ministry of Finance and Economic Development, Addis Ababa, Ethiopia. https://www.researchgate.net/profile/Hailu_Worku3, last visited 30 May 2020.

gradually diminishing number still today practices traditional religion⁹. Elements of Arabic cultural influences may be observed in the way the Berta are dressed as well as in their social behaviour¹⁰. Despite strong Arabic-Islamic influence, the Berta always strived to maintain the identity of their community and the exceptionality of their traditional music that plays a central role in everyday life to date. Thus, contrary to the relatively later introduced religious music (Islam), the Berta rather identify themselves with their indigenous and secular music as Simon correctly elucidates¹¹.

The traditional music repertoire of the Berta is complex. Music is an integral part of community life, whereas music making belongs to one of the social activities that encourage communal unity. So, music can be performed on different occasions serving various purposes. Two categories of musical activities may be distinguished. The first type of music making refers to the traditional secular music, commonly serving communal entertainment and recreation. The second type of their musical repertoire alludes to the religious domain, the Islam. Here, various religious festivities taking place throughout the year are accompanied by music primarily performed by men.

WAZA TRUMPET ENSEMBLE

The waza is an end-blown trumpet, with a tube composed of 3, 4, 6 or more fitting gourd segments. According to Almahadi Hojele, suitable types of gourds are deliberately planted for the production of the waza trumpets. Referring to the Sudanese Berta, Gottlieb reports that they similarly favor a specific gourd plant type called ago¹².

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- ⁹ Triulzi, Alessandro (1975). Trade, Islam, and the Mahdia in Northwestern Wallagga, Ethiopia. *The Journal of African History*, 16 (1): 55.
- ¹⁰ Gottlieb, Robert (1996). *Sudan II—Music of the Blue Nile Province: The Ingesana and Berta Tribes. An Anthology of African Music*. UNESCO Collection D8073/AD 090. AUVIDIS / UNESCO, 8-9.
- ¹¹ Simon, Arthur (1983). Islam und Musik in Afrika. *Musik in Afrika*. Edited by Arthur Simon. Berlin: Abteilung Musikethnologie SMB, 309.
- ¹² Simon, Arthur (2001). Sudan. *New Grove Dictionary of Music and Musicians*, 25. Edited by Stanley Sadie. London: Macmillan, 656; Simon, Arthur (2003). *Die Musik der Berta am Blauen Nil*. (Recordings made 1982/83 and commentary). Museum Collection Berlin, SM 17082, Berlin: WERGO; Kebede, Ashenafi (1982). *Roots of Black Music: The Vocal, Instrumental, and Dance Heritage of Africa and Black America*. Tallahassee: Ethius Book, 74.



Figure 2a-b: Waza trumpet ensemble; Gambella Village near Assisa city, Benishangul Gumuz Region, 13 February 2005

The presence of natural materials in Berta land has been imperative to maintain the waza making tradition, which also applied to all other traditional music instruments of the Berta. For the sake of a continued availability of the instrument making materials, the Berta play a central role in securing a healthy ecological habitat and balance. The result is that the instrument making practice still exists today among the Berta, who guaranteed the continuity of their musical traditions and associated customs. Segments of conical tubes are prepared to construct waza trumpets that become increasingly wider towards the tube's end. The tips of the increasingly larger tube segments are pushed into the bottoms of the smaller tubes similar to a telescope. The junctions are fixed with a natural glue extracted from trees found in the region. The glue is known as *adegella*. Another material used as glue is honey wax¹³. Thin bamboo sticks are pushed inside the tube crosswise to support the tube's interior. Each waza has a funnel-shaped mouthpiece made of gourd (figures 3a-b).

Furthermore, the exteriors of waza trumpets exceeding 0.5 meters are supported with three or more thin bamboo sticks running vertically and fastened with strings (from tree barks) or similar plants (figure 4).

The first eight trumpets have 3-4, the 9th trumpet of ca. 6 and the 10th trumpet consist of more than 6 variously sized pieces/segments. The lengths of the waza are between 45 to 200 centimeters. The average diameter of the mouth pieces are between 4 and 6 centimeters. Each trumpet has its own designation. From the smallest to the largest (short to long), they are called: *wazalu*, *tere*, *mepe alu*, *shoro pala*, *gino oqi dañe*, *shiñir balla*, *asesehu*, *nupe pali dañe*, *gino oqi dañe* and *shore*

¹³ Gottlieb, Robert (1996). *Sudan II—Music of the Blue Nile Province: The Ingessana and Berta Tribes. An Anthology of African Music*. UNESCO Collection D8073/AD 090. AUVIDIS / UNESCO, 8.

dañe¹⁴. The waza ensemble under discussion was explored in Gambella village, near Assosa. The group consisted of 10 male waza players¹⁵.

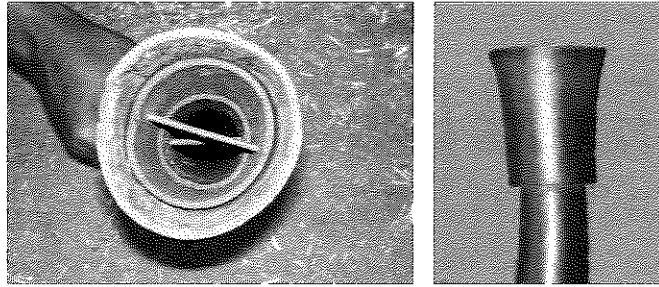


Figure 3a (left): Interior of a waza tube with bamboo sticks to protect the tube; Figure 3b (right): mouth piece of a waza trumpet, Gambella Village near Assisa city, Benishangul Gumuz Region, 13 February 2005

The researcher, Artur Simon undertook intensive fieldwork, made recordings and collected data among the Sudanese Berta. He mostly observed 10 – 12 waza belonging to an ensemble¹⁶. The number of musicians playing together in a group may vary from one ensemble to the other. The reasons may mostly be based on technical issues related with sound production, accentuation, as well as the aesthetic preference of experienced musicians.

It is important to note that each waza trumpet usually produces a single tone. It is therefore important to make a waza set in one process. Accordingly, in the process of instrument construction, the tuning of each waza is adjusted as per Berta musical rules. Once the sound has been determined by the instrument maker who determines the tube's length accordingly, then any kind of alteration becomes impossible except for slight adjustments.

¹⁴ The fifth and ninth trumpets have the same designation.

¹⁵ Field research in Ethiopia, February 2005, see audiovisual recordings, Video no. 01: 41:21- 60:00 minutes and Video 02: 00:00–31:48 minutes (private collection: Teffera/East Africa/2005).

¹⁶ Simon, Arthur (1994). *Afrika südlich der Sahara. Musik in Geschichte und Gegenwart*, 1. Kassel: Bärenreiter, 100; Simon, Arthur (2003). *Die Musik der Berta am Blauen Nil*. (Recordings made 1982/83 and commentary). Museum Collection Berlin, SM 17082, Berlin: WERGO, 4.

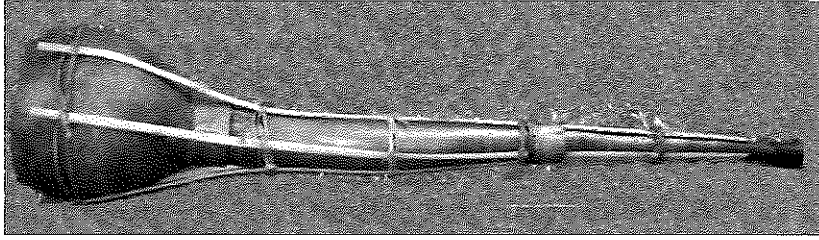


Figure 4: A complete waza trumpet supported with bamboo sticks on the exterior, Gambella Village near Assisa city, Benishangul Gumuz Region, 13 February, 2005.

Similarly, Robert Gottlieb carried out fieldwork during the 1980s among Berta communities in Sudan. He also recorded various ensembles comprising a maximum of twelve active members. Each trumpet is adjusted with its peculiar sound frequency that is determined already during its construction¹⁷. Therefore, 10 – 12 musicians playing in an ensemble seems to be common in quite many Berta villages. Whereas the traditional modes of the Berta have a limited number of pitches, the use of more than 4 or 5 trumpets usually serves the amplification of certain pitches. The decisions regarding how many wazas and which ones need to be put together and/or added to the basic set is left to the experienced musicians of a given ensemble. Accordingly, their long-lasting experience in one and the same waza ensemble, allows them to have certain sound-related preferences. The number of waza in an ensemble is furthermore determined depending on the given event, mostly a communal get together.

As a result of Gottlieb's research, the designations of the twelve waza trumpets, their meanings and musical function as well as their measures as listed in the table below:

We may note that the instrument's names vary from a Berta group to another or from village to village. These names often allude to a certain sound produced by the respected trumpet or to the specific musical function during an ensemble performance¹⁸.

¹⁷ Gottlieb, Robert (1996). *Sudan II—Music of the Blue Nile Province: The Ingesana and Berta Tribes. An Anthology of African Music*. UNESCO Collection D8073/AD 090. AUVIDIS / UNESCO, 9.

¹⁸ The same usage of instrument's names as well serves for the numerous flute ensembles of the Berta similarly found in many villages. Gottlieb, Robert (1996). *Sudan II—Music of the Blue Nile Province: The Ingesana and Berta Tribes*.

Another music instrument belonging to a waza ensemble is the transverse horn called angari shown (figures 5a-b). Angari horns are mostly crafted from goat's horns of ca. 35 centimeters of length. A lateral mouthpiece is drilled next to the horn's tip. The angari is often decorated with fringes of animal hair, shells and colorful beads.

#	trumpet's name	translation	length / cm
1	waza al meser	first waza	40
2	adolo bala	small leaf	46
3	waza alu	important waza	56
4	mushung bala	small girl	66
5	nely bala	small woman	77
6	shinir bala	small donkey	86
7	adodo	leaf	96
8	agondo	wild animal	108
9	asezagu	rattle	120
10	nely dang	big woman	140
11	shinir dang	big donkey	155
12	agrush	loud tone	175

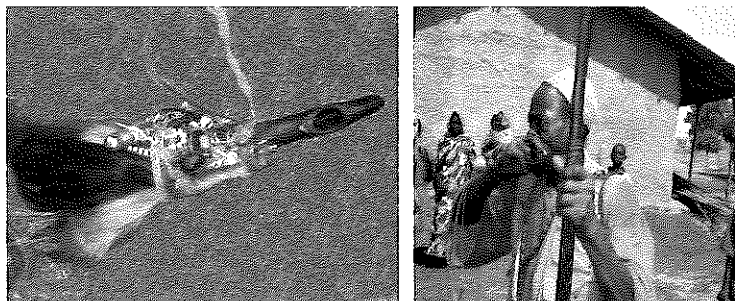
Waza trumpet set according to Gottlieb¹⁹

The method of attaching the different gourd segments to make one big waza is applied among all instrument makers and settlements of the Berta in Ethiopia and Sudan. It is also common that such a trumpet set is habitually made by the same instrument maker in one process. Experienced instrument makers often start with the shortest trumpet, waza alu and then proceed to the next larger ones up to the end. This method enables the instrument maker to adjust the length of each waza parallel to its tuning. The resulting pitches of all the wazas are tested separately and in sets. While doing so, the instrument maker would

An Anthology of African Music. UNESCO Collection D8073/AD 090. AUVIDIS / UNESCO, 9.

¹⁹ Gottlieb, Robert (1996). Sudan II—Music of the Blue Nile Province: The Ingasana and Berta Tribes. *An Anthology of African Music*. UNESCO Collection D8073/AD 090. AUVIDIS / UNESCO, 9.

undertake corrections on one, two or more waza by applying various techniques²⁰. I may note that the musical instruments do not have precise measurements contrary to manufactured instruments found in many developed countries. Therefore, measurements are taken from already existing waza set/s. This method is quite common in many traditional music cultures of Ethiopia as well as Africa.



Figures 5a-b: Transverse animal horn angari, Gambella Village near Assosa city, Benishangul Gumuz Region; 13 February 2005

The fork-shaped wooden branch bulu and the mallet pale play an important role in accompanying the waza sets during music performance (figures 6a-b). Up to five musicians may be assigned to play this concussion ideophone. At times, animal horns may also be used as mallets. Gourd rattles are also common percussion instruments belonging to waza ensemble performances used for rhythmic accentuation and to give the waza sounds a special note (figure 7).



²⁰ Gottlieb, Robert (1996). *Sudan II—Music of the Blue Nile Province: The Ingesana and Berta Tribes. An Anthology of African Music*. UNESCO Collection D8073/AD 090. AUVIDIS / UNESCO, 9.

Figure 6a (left): Bulu pale wooden fork and mallet, Yared Music School collection, Addis Ababa University; Figure 6b: Bulu pale player positioning the pale on his right shoulder with the bulu horn in his right hand; in his left hand he holds a waza; Gambella village near Assosa, Beni-Shangul Gumuz; 13 February and the entire October, 2005.

Waza sets are preserved in the house of the village's elder, a clan or religious leader. In earlier times, these musical instruments served as an emblem of authority and represented royal Berta courts. Berta rulers back then used to have court musicians, who performed music during events related with the court only²¹. The tradition of ensemble performance consisting of single pitched aerophones has been quite common in many former African royal courts. Among them

- side-blown agwara, kanga and amakondere trumpets of the Alur, Banyoro, Baganda and Bayankole from west and central Uganda
- endere flute ensembles of the Baganda
- woissa flute sets from Omo of south Ethiopia
- end-blown pororessa and dinke trumpets of the Wolayitta, Kembatta and Hadiyya from southwest Ethiopia
- end-blown dussul trumpets of the Sudanese Nymang, etc.

These aerophones are played sets of 5, 6, 8, 10 or more. Before starting to play the waza, water is poured on the interior and exterior walls of the trumpets in order to close possible invisible slits but also to produce the expected sound. The instrument cannot be used without having undergone this process (figure 8).

With reference to the technical sound production, the waza is similar to that of the European trumpet with its funnel-shaped mouthpiece. These trumpets get their sound from the vibration of the musician's compressed lips (the player's embouchure) that sets the air column in wave. In doing so, the nearly-closed lips are positioned on the circular edge of the blowing hole (figures 9a-b).

²¹ Simon, Arthur (2003). *Die Musik der Berta am Blauen Nil*. (Recordings made 1982/83 and commentary). Museum Collection Berlin, SM 17082, Berlin: WERGO; Ismail, Mahi (1995). Sudan. *The New Grove Dictionary of Music and Musicians*. Vol. 18. Edited by Stanley Sadie. London: Macmillan, 328.



Figure 7 (left): Women holding gourd rattles during a waza ensemble performance; Gambella village near Assosa, Beni-Shangul Gumuz, Figure 8 (right): Pouring water on waza trumpets before usage, Gambella village near Assosa, Beni-Shangul Gumuz, 13 February, 2005.



Figures 9a, 9b, and 9c (from left to right): Playing the waza trumpets, positioning of the lips; Gambella village near Assosa, Beni-Shangul Gumuz, 13 February, 2005.

After finishing the wetting of the wazas, every musician selects his favorite instrument and starts testing its sound individually and in groups hence, checking the tuning. After making sure the entire set is ready to be used, the musicians proceed to the spot where the celebration or the communal event takes place.

During a performance, the first five waza trumpets are held in front of the musician's body, whereas trumpets 7 to 10 are quite long so that the end of the tube rests on the ground, while the musician stands at his full height holding the instrument in both hands and blowing into the mouth hole with all his power. The musicians often support the embouchure with their right hand and the middle of the tube with their left hand.

The angari player holds his horn in his right hand. The asese gourd rattles, usually held in the right hand, are shaken in rhythm to the given musical structure.

The first five waza players on the other hand simultaneously play the idiophone bulu pale shown in figures 13a and 13b. During a waza ensemble performance, the musicians usually form a circle. The singing and dancing group of both women and men, encircle the waza players.

The waza ensemble reflects the everyday social life of the Berta in both Ethiopia and Sudan. The ensembles are similar except for some minor differences referring to the instrument's names. This is perhaps related with the different Berta dialects. Today, each Berta village has one or more aerophone ensembles consisting of both trumpets and flutes.

With the exception of the asese gourd rattles played by female participants during a waza music performance, exclusively men play all other instruments. Women also participate mainly by dancing and singing.

Waza performances take place at certain times of the year, usually during the harvest season between September and early November²². During the rainy season or around the beginning of autumn, it is taboo to play the trumpets²³. According to Mohamed²⁴ people are afraid that evil spirits that can destroy the harvest, are created through the sound. However, this general lack of music during this season is not necessarily connected with beliefs rather than with the fact that the majority of the community lives from farming including musicians. They work intensively in their fields so that they are extremely tired in the evenings when they get home. Therefore, they do not have any ambition for a get-together, music making, and dancing. Activities of farmers are rather to be expected after the tilling of the land, when they feel it is time to relax and pursue their pleasures.

²² Gottlieb, Robert (1996). *Sudan II—Music of the Blue Nile Province: The Ingesana and Berta Tribes. An Anthology of African Music*. UNESCO Collection D8073/AD 090. AUVIDIS / UNESCO, 9.

²³ Al-Daw, Ali Abd-Alla, Abd-Alla Ibrahim Muhammed, and Hasan Al-Sir (1985). *Traditional Musical Instruments in Sudan*. Institute of African and Asian Studies. University of Khartoum. The Folklore Research Centre. Department of Culture, Ministry of Culture and Information, Khartoum, 75-77; Simon, Arthur (2001). *Sudan. New Grove Dictionary of Music and Musicians*. Vol. 25. Ed. by Stanley Sadie. Macmillan Publishers Ltd. London, 657.

²⁴ Mohamed, Seif Yasien (1988). *Traditionelle Musik im Kulturwandel des Nordsudan: Eine Studie zur musikalischen Akkulturation am Beispiel der Hauptstadt Khartoum*. Dissertation. Köln. Unpubl. mat., 26.

Each time, prior to playing the waza trumpets, that are usually stored for a long time, a sheep, goat or hen is sacrificed. Blood is sprinkled on the instruments and in the house, where they have been stored²⁵.

the waza ensemble generally serves the communal entertainment of the Berta. such events also take place on various ceremonial and ritual occasions like wedding ceremonies, and rain worship. Nowadays waza ensemble shows are also an integral part of annual music festivals²⁶ of the Berta. as Ismail²⁷ points out, waza trumpets are also played at mourning ceremonies, namely at the death of personalities or clan leaders.

Waza trumpets accompany traditional Berta antiphonal songs frequently arranged in a call-response pattern between a lead singer and an accompanying chorus group. Another part of the music repertoire also accompanied by waza trumpet sets consisting of songs performed in unison. In songs accompanied by trumpet or flute ensembles, the lyrics often contain short verses repeated several times according to existing rules. Their contents mostly suit the communal amusement, however, there are also spontaneous lyrics created on the spot, namely during the group performance.

Every waza is habitually made to produce a single specified tone in the process of instrument making as clarified earlier. Therefore, a music performance requires a certain number of waza musicians since otherwise the expected melodic and metro-rhythmic structure cannot be achieved.

The tuning of the ten wazas recorded in the Gambella village are depicted in figure 19. The spectral representation shows the basic frequency and the other formants of all ten trumpets belonging to the ensemble up to a maximum frequency ranging to 3 kHz. They corre-

²⁵ Gottlieb, Robert (1996). *Sudan II—Music of the Blue Nile Province: The Ingesana and Berta Tribes. An Anthology of African Music*. UNESCO Collection D8073/AD 090. AUVIDIS / UNESCO, 9.

²⁶ Simon, Arthur (2003). *Die Musik der Berta am Blauen Nil*. (Recordings made 1982/83 and commentary). Museum Collection Berlin, SM 17082, Berlin: WERGO, 4.

²⁷ Ismail, Mahi (1995). Sudan. *The New Grove Dictionary of Music and Musicians*. Vol. 18. Edited by Stanley Sadie. London: Macmillan, 328.

spond to the pitch produced in sequence by each trumpet. The frequency between the shortest (high tone) and longest waza (low tone) is 87.31Hz to 314.65Hz.

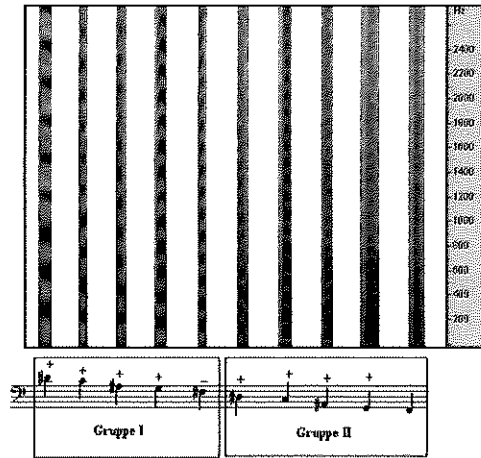


Figure 10a: *Waza* trumpets tuning.

For a better overview, the frequencies of the first partials of all wazas that were examined in the said time frame are shown as follows:

WAZA ENSEMBLE

No.	trumpets	tones/cents	1st partial tone (Hz)
1	waza alu	d [#] +18 Cent	314.65
2	tere	c' +37 Cent	282.10
3	mepe palu	a [#] +41 Cent	232.93
4	shoro pala	g +15 Cent	197.76
5	gino oqi dañe	f [#] 14 Cent	183.43
6	shiñir balla	d [#] +33 Cent	158.6
7	asesehu	c +45 Cent	134.26
8	nupe pali dañe	A [#] +12 Cent	128.14
9	gino oqi dañe	G +25 Cent	123.10
10	shore dañe	F	87.31

Figure 10b: Listed pitches as measured.

According to Simon, the waza trumpets are divided into two groups according to their pitch. The first group refers to the waza bala 'the small waza' group with (trumpets 1 to 5), whereas the second group is

the waza dang ‘the big waza’, (the largest trumpets from 6 to 10). Simon’s sound recordings were made in different localities of the Berta. Accordingly, he lists the pitches and interval relationships (ten trumpets in each ensemble) resulting from two different ensembles of the waza²⁸. The following table elaborates this:

trumpets	Uffud El Nuweiri pitch distance (cents)	Uffud El Töm pitch distance (cents)
1 2	whole tone (206)	half tone + (3/4 tone) (133)
2 3	minor third (287)	minor third + (323)
3 4	half tone (108)	whole tone (206)
4 5	5/4 tone (249)	5/4 tone (245)
5 6	5/4 tone (256)	5/4 tone (258)
6 7	whole tone (186)	half tone (93)
7 8	5/4 tone (236)	major third (375)
8 9	3/4 tone (161)	whole tone + (224)
9 10	5/4 tone + (266)	5/4 tone (238)

Figure 11: Waza trumpets tuning according to Simon²⁹ arranged from the highest to the lowest trumpet.

The music notation presented in figure 12 also shows the tone series of a waza trumpet ensemble examined by Gottlieb, in which 12 trumpet players are divided into the two groups as mentioned above³⁰. Mohamed demonstrates a different waza tuning given in figure 13. Here, the number of instruments is ten³¹.

²⁸ Simon, Arthur (2003). *Die Musik der Berta am Blauen Nil*. (Recordings made 1982/83 and commentary). Museum Collection Berlin, SM 17082, Berlin: WERGO, 4-6.

²⁹ Ibidem, 6.

³⁰ Gottlieb, Robert (1996). *Sudan II—Music of the Blue Nile Province: The Ingesana and Berta Tribes. An Anthology of African Music*. UNESCO Collection D8073/AD 090. AUVIDIS / UNESCO, 9.

³¹ Mohamed, Seif Yasien (1988). *Traditionelle Musik im Kulturwandel des Nordsudan: Eine Studie zur musikalischen Akkulturation am Beispiel der Hauptstadt Khartoum*. Dissertation. Köln. Unpubl. mat., 62.

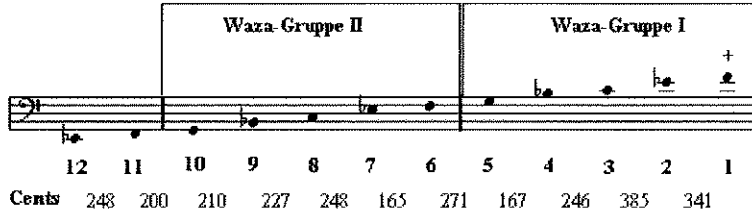


Figure 12: Waza tuning according to Gottlieb³² from the lowest trumpet in ascending order.

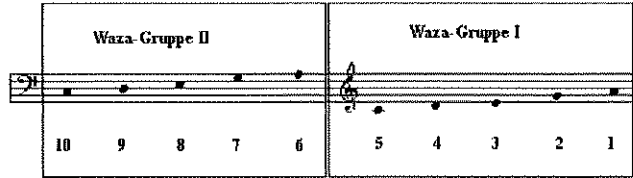


Figure 13: Waza tuning according to Mohamed³³ from the lowest trumpet in ascending order.

From the instrument tunings shown above, we can see that the division of ten/ twelve trumpets into two groups is a fixed rule. In the tunings reproduced in notes (figure 10b, 12 and 13), one can see how the five pitches of the first group are repeated an octave lower by the other five trumpets of group II. This means that all additional trumpets (for example in figure 12: trumpets eleven and twelve) use the pitches that are already present in the tuning and sound either in lower or higher octaves. Thus, they mainly serve the purpose of amplification of certain pitches and for sound coloring. The range of a waza ensemble usually extends over two octaves, but in exclusive cases, such as in figure 13 it may even extend beyond that.

CONCLUSION

Endowed with a century old history, Berta communities have successfully maintained their music culture until today. One of the traditional music practices is represented by a variety of aerophone ensembles,

Gottlieb, Robert (1996). *Sudan II—Music of the Blue Nile Province: The Ingesana and Berta Tribes. An Anthology of African Music.* UNESCO Collection D8073/AD 090. AUVIDIS / UNESCO, 9.

³³ Mohamed, Seif Yasien (1988). *Traditionelle Musik im Kulturwandel des Nordsudan: Eine Studie zur musikalischen Akkulturation am Beispiel der Hauptstadt Khartoum.* Dissertation. Köln. Unpubl. mat., 62.

from which this study discussed one, namely the dignified waza trumpets. In the process of preserving this unique tradition, it was also imperative for the Berta to guarantee ecological balance for a continued access to materials for instrument making. Waza ensembles are found in every Berta village, meaning that the availability of natural materials is ensured everywhere. Berta instrument makers, who are simultaneously farmers, plant special bottle-shaped gourds for the waza trumpets. Whenever an instrument maker cuts a piece of gourd for instrument making, he immediately replaces it with a new plant. This orderly process has secured an enduring existence of gourd plants for instrument making. Waza and other traditional musical instruments are still today constructed. Music events, among others, accompanied by waza ensembles will continue being part of everyday life as long as the Berta live in harmony with nature and protect the ecological balance.

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WOONG YI LEE'S TRANSNATIONAL 'MUSICKING' RESEARCH

Xue Tong¹

Abstract

This article takes Woong Yi Lee (Chinese name Shi Zi Ran), a Korean daegeum musician living in Shanghai as the focal point of the research, and discusses his music changes after transnationalization by following his music exchange activities, music performances, daegeum production and teaching and other content. In terms of musical exchange activities, Shi Zi Ran has taken on the composite identity of a tea man² and a musician since his arrival in China, and has enriched the cultural space of Daxian music by adding it to tea culture activities. As a musician, he donated a number of Korean musical instruments to the Shanghai Conservatory of Music, contributing to cultural exchange. In terms of musical performance, he tries to perform cross-culturally with instruments such as the erhu and Chinese drums, and selectively takes and enhances the performance techniques of the traditional music of the daegeum in his performances. In his music teaching, Shi Zi Ran teaches the Chinese to produce and play daegeum. It can be said that in a transnational context, the presence of daegeum takes on a new cultural function and value in Shi Zi Ran's life journey.

Keywords

Daegeum, Shi Zi Ran, Performance study, Autoethnography

SOME BACKGROUND

Shi Zi Ran is a performer of Lee. Saseng-gang's daegeum Sajio in Korea. He used to be a monk. Now he is active in China as a musician and a tea man. It can be said that he is a man of tension. So, what was the role of the daegeum in his dual role as a tea man and musician after settling in China? And how does he perform cross-cultural music? Does the tradition of the daegeum still exist after arriving in China? The present study will focus on Shi Zi Ran's transnational musical activities, starting with his becoming a tea person, and will explore his transnational 'music-making' and identity construction with a specific analysis.

¹ Xue Tong is a graduate student of Shanghai Conservatory of Music.

² 'Tea men' are people who are skilled in the art of drinking tea, who love and cherish tea.

THE FORMATION OF THE DUAL IDENTITY OF TEA MAN AND MUSICIAN

For reasons such as the death of his mother, Shi Zi Ran moved from Korea to Shanghai, China in 2000. Here, he grew to love the Chinese tea culture. Thanks to the open and tolerant cultural atmosphere of the tea culture circle, he has integrated into the Chinese tea culture circle and has become a famous tea person. He contracted to grow tea trees in the Huangshan Mountains and had set up the 'Shi Zi Ran Tea Culture Institute' to identify and sell tea leaves (Figure 1). Shi Zi Ran also has a large collection of teas that cost him a lot of money and require a lot of energy and time to maintain, but when he talks to him about tea, he always feels a sense of pride from his heart. In addition, in May 2021, the organising committee of the International Tea Association, a leading tea culture organisation in China, awarded Shi Zi Ran with a certificate of recognition as one of the "100 Famous Tea People" (Figure 2) in recognition of his work and influence in the field of tea culture. It can be said that Shi Zi Ran has become a real tea person and is enjoying his status.



Figure 1 (left): A photograph of tea produced by the 'Shi Zi Ran Tea Culture Institute' in 2021. taken by the author at Shi Zi Ran's home on 11 March; Figure 2 (right): A photograph of the '100 Famous Tea People'-Certificate of Appreciation. Taken by the author at Shi Zi Ran's home on 12 July 2022

MUSIC EXCHANGE ACTIVITIES

With his new identity as a tea man, Shi Zi Ran did not give up on music and the daegeum, but instead incorporated the daegeum into his tea culture activities. For him, this important tea culture event is the *Beautiful Stage*. "The *Beautiful Stage* event started as a monthly

gathering of music lovers for impromptu performances and exchanges."³ The event was launched in 1983, but due to camera limitations, photos and videos of the event are no longer available and can only be sorted out from Shi Zi Ran's reminiscent descriptions. According to him, many participants were now traditional Korean musicians and students, many of whom were his friends. The activities are based on Korean traditional music. After coming to China, the name *Beautiful Stage* continued, but Korean music was relatively reduced, and the "tea ceremony" was added, which became an important activity label for Shi Zi Ran's organization of tea and music. Shi Zi Ran often performs daegeum in the *Beautiful Stage* event, and often invites numerous Chinese musicians to participate in the performance. Moreover, due to the addition of activities such as drinking tea and talking about tea ceremony, the *Beautiful Stage* activity often appears under the name of "beautiful tea party" (Figures 3 and 4).



Figure 3 and Figure 4: *Beautiful Stage* promotional photos taken in 2014. The pictures come by courtesy of the Tencent WeChat public account of Suzhou True Color Art Museum.

In addition to the *Beautiful Stage*, Shi Zi Ran still integrates daegeum into the daily tea friend exchange activities. He has a wide range of friends and maintains good relationship with many tea friends. In daily tea tasting exchanges, he often plays daegeum, and uses daegeum to have some interesting interactions with tea friends. As shown in Figure 5, a tea friend visit Shi Zi Ran. While drinking tea and chatting, Shi Zi Ran played his daegeum, and a male tea friend

³ Shi Zi Ran and Xue Tong (2021). Personal Communication in Shanghai.

"consciously" clapped his hands to accompany him. The melody of daegeum follows the rhythm of the hand clapping that is leisurely quiet and enjoyable.



Figure 5a (left): A photograph of Shi Zi Ran interacting with tea friend, taken by the author at Shi Zi Ran's home on 12 July 2022 in Shanghai; Figure 5b (right): A photograph of Shi Zi Ran donating musical instruments to the Shanghai Conservatory of Music in 2022. Provided by Shi Ziran to the author in Shanghai.

In 2002, the third year after Shi Zi Ran arrived in Shanghai, the Shanghai Conservatory of Music celebrated its 75th anniversary inviting him to attend the event. At the event, Shi Zi Ran donated a number of traditional Korean musical instruments such as the daegeum and the gayagum, which are still on display in the Museum for Oriental Musical Instruments of the Shanghai Conservatory of Music. Furthermore, after arriving in China, Shi Zi Ran also led a group of Korean students to perform at the Shanghai Conservatory of Music, contributing to cultural exchange in his way.

CROSS-CULTURAL MUSIC PERFORMANCE

As a Korean musician, Shi Zi Ran has experimented with cross-cultural performances of traditional Chinese music since his arrival in China. With regard to Cross-cultural, Max Peter Baumann once suggested that "Cross-cultural is not merely the coexistence of two cultures, but the intersection of multiple cultures. Cross-cultural cooperation dissolves the differences between one's own culture and an unfamiliar culture."⁴ Therefore, here is used a collaborative performance of a daegeum and a Chinese drum to explore how Shi Zi Ran's daegeum collides with Chinese music in Cross-cultural context.

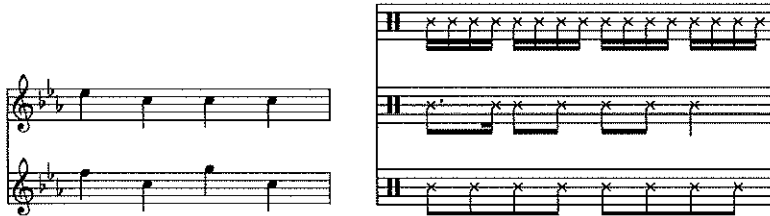
⁴ Ma Li. (2018). Baumann's Study of "World Music" as a Cross-cultural Strategy. *Huang Zhong (Journal of Wuhan Conservatory of Music)*, 4: 67-76.

The traditional daegeum is usually accompanied by a Korean Janggu, but Shi Zi Ran does not have a long drum player in his circle in China. Hence, he often seeks to collaborate with Chinese drums (Figure 7) from a performance at the *Beautiful Stage* event held in Qingpu District, Shanghai in 2018.



Figure 6: A photograph of Shi Zi Ran performances with Chinese drums provided by Shi Zi Ran in Shanghai 2018.

The collaboration between daegeum and the drums is a short performance, lasting only 1 minute and 50 seconds. From the way they performed together, the two work well together in terms of rhythm and speed. In general, the collision and fusion of the two groups is mainly reflected through body language and musical techniques. I recorded the performance as follows.



Figures 7a and 7b (left and right): Notation drafts of the daegeum performance Notation drafts Chinese drum performance notation

As shown in example 2 of the score, there are three variations of the drum rhythm in the performance, and these are all common rhythmic patterns for Chinese drums. Shi Zi Ran plays in a very excited state. The melody is improvised from the notes in score 1, with most of the notes in each phrase falling on the note c. Melodically, I did not find special features, but in my analysis of his performance, I found that Shi Zi Ran did not use the typical technique Nongum of a daegeum in this performance, but played a lot of downward sliding notes. Each was played in a relatively short duration, which sounded cheerful and lively in conjunction with the fast drumming of the Chinese drum. We may note that this collaboration between daegeum and the drums is selective in terms of musical technique and body language. In terms of

musical technique, Nongum is generally used to express lyrical and sorrowful emotions, whereas Chinese drums are often used in joyful and lively venues, and the two do not fit together in terms of emotional expression, and are therefore discarded in the performance. Secondly, in terms of body language, this cooperation is still accompanied by a lot of eye contact and interaction, which has already happened in the cooperation between Shi Zi Ran and other musical instruments. Besides the eye contact, the performance is accompanied by the rhythm of the body. In the traditional daegeum performance, the rhythm of the body is often accompanied by some techniques, such as *Nongum*. In the cooperation with Chinese drum, Shi Zi Ran's body also has a rhythm, but it does not belong to the rhythm of daegeum's music, but the Chinese drum. Because there is a big difference in rhythm between the Chinese drums and the Korean Jangu. This is also the most interesting part of this cooperation.

DAEGEUM PRODUCTION AND TEACHING

In the process of the daegeum study from Shi Zi Ran, He once made a daegeum for me with a double-bone bamboo⁵ brought from Korea, and told me that many Korean daegeum performers can make daegeum.⁶ After arriving in China, although Shi Zi Ran seldom made daegeum, he instructed a flute maker Ding Zhigang in Tongling Bridge, in the Zhe Jiang Province to make a Chinese version of daegeum. This can also be said to be Shi Zi Ran's promotion practice in making daegeum.

The more detailed data and processes involved in the production of these daegeums may not be available in the present discussion due to confidentiality, but it is still possible to discuss some of the characteristics of the Chinese version daegeum through literature review and oral interviews. Unlike the double-boned bamboo used in Korean daegeum, Ding Zhigang's Daegeum are made of Chinese mao bamboo⁷. Due to the difference in the bamboo, there is a certain difference in tone between the two instruments. I knew very little about Chinese mao bamboo, so I asked Ding Zhigang about it, and he

⁵ A variant of bamboo. In Korea this bamboo is the best material for daegeum making.

⁶ Shi Zi Ran and Xue Tong (2021). Personal Communication in Shanghai.

⁷ A monocarpic, scattered, evergreen, tree-like bamboo plant of the family Gramineae, genus *Cortex*, with poles up to over 20 metres high.

replied that "Chinese mao bamboo grows much thicker and stronger than other Chinese bamboo, which is a good alternative to Korean bamboo for the production of a daegeum, and that double-boned is very difficult to find." ⁸

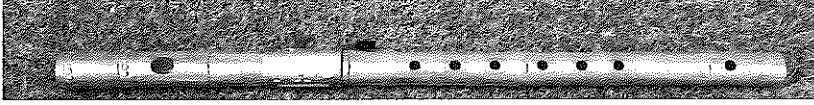


Figure 8: A photograph of a Chinese daegeum made by Ding Zhigang (2022). The picture was provided to the author by Ding Zhigang.

Since Shi Zi Ran has been active in the domestic tea and music cultural circle for a long time, many people have gradually become interested in daegeum, so some people want to learn daegeum from Shi Zi Ran, Shi Zi Ran also accepted some students, including me. Thanks to the efforts of many people, he set up the Shi Zi Ran Academy of Astrology at the Yuan Yang Academy in Dali, Yunnan Province, where he teaches regularly.



Figure 9: Photograph of Shi Zi Ran establishing the Daegeum Research Institute in 2021. Photograph provided to the author by courtesy of Shi Zi Ran in Shanghai.

We may suggest that Shi Zi Ran did not completely abandon the teaching of daegeum after his arrival in China, and daegeum music appears to have been inheritance overseas. However, in terms of scale, the number of learners of daegeum is relatively small, and there are no people who make a living out of daegeum. Therefore, this kind of overseas inheritance has not formed a scale. But even so, it does objectively exist, and it is also an overseas continuation of its daegeum tradition. From the teaching situation, Shi Zi Ran's way of teaching daegeum after going abroad is still relatively traditional. I will discuss from several aspects below.

⁸ Ding Zhigang and Xue Tong (2020). Personal Communication in Shanghai.

In terms of music scores, according to the Korean daegeum Sajio music scores collected by the author, the teaching of Korean daegeum music is based on a combination of staff and *Jeongganbo*. However, Shi Zi Ran did not use staves for teaching, thinking that staves are not very suitable for learning daegeum, and said that he used *Jeongganbo* when learning daegeum. Therefore, I used the Korean traditional *Jeongganbo* at the beginning of study. The picture below shows how Shi Zi Ran Teach me about *Jeongganbo*. From this point of view, Shi Zi Ran maintains his tradition.

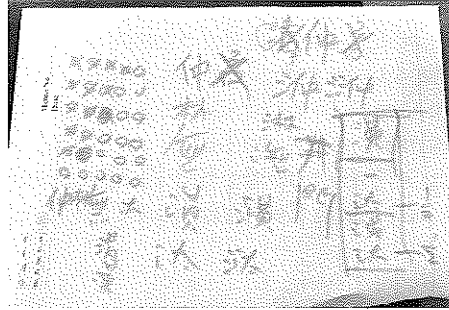


Figure 10: Photograph of Manuscript of a lesson given to me by Shi Zi Ran. Photo taken by the author on 9 November 2020 in Shanghai.

In terms of teaching methods, unlike the way I used to learn music, Shi Zi Ran sent me a video of himself playing in the first lesson and asked me to imitate it first. Later, he told me that this method of imitation and oral teaching is also his tradition of learning daegeum performance. Not only for me, but also for the students of the Daegeum Research Institute and other tea culture lovers, he informed us that he also adopts this teaching method.

In addition to maintaining tradition, Shi Zi Ran's teaching also deviates from Korean tradition. For example, when teaching the playing techniques of the daegeum. He called me to the backside of his body in order for me to see more clearly the weaving movements of his lips and arms. Besides, he said, "You can't do that in Korea, teachers don't allow students to watch from the backside." ⁹Standing on the backside of the player does give a clearer view of the body movements (Figure 11).

⁹ Shi Zi Ran and Xue Tong (2021). Personal communication in Shanghai.



Figure 11: Photograph of the backside of Shi Zi Ran's body while playing, taken 2021 by the author while following a lesson with Shi Zi Ran in Shanghai.

It is clear from Shi Zi Ran's statement that he would not have taught his students in this way in Korea, and it is likely that this was a reserved aspect of the teachers' teaching. But after arriving in China, without the constraints of society and genre, such reserved teaching rules gradually dissipated. In terms of choosing the order of what to study, Shi Zi Ran mentioned to me, "Usually Korean students learn to play Korean folk songs first when they study daegeum, but it doesn't matter to you, it's all fine."¹⁰ Therefore, in order to master the daegeum performance skills more quickly, I have chosen to directly learn to play daegeum Sajio instead of folk songs with less difficulty. From Shi Zi Ran's attitude, it is clear that within his school, the study of daegeum is required to follow a certain order, and it is not up to the student to decide for himself how to learn it. But as a foreigner, I was not required to do so by Shi Zi Ran, which can be seen as another dissipation of his teaching tradition.

CONCLUSION

In general, Shi Zi Ran lives both as a tea man and a musician in a transnational context, with the daegeum being an important partner in his musical and cultural activities. In terms of cross-cultural performances, Shi Zi Ran continues to use the daegeum to try to cooperate with other instrumental music or art. The experimentation

¹⁰ Shi Zi Ran and Xue Tong (2021). Personal communication in Shanghai.

and exploration of the music itself and physical movement can be seen in specific performances, both in the dismantling of tradition to suit the new music and in the emphasis on performance techniques to reinforce tradition. In addition, he instructed the Chinese in the making of musical instruments, making Korean daegeums from Chinese bamboo, another extension of the tradition in comparison to Korea. Shi Zi Ran's daegeum has been inherited through domestic teaching. Although it is not on a large scale, it is still a transnational continuation of its teaching tradition. Breaking and dissolution of traditional rules. It is in this process that the music of Shi Zi Ran has changed and thus remained the same since his arrival in China.

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RE-SOUNDING THE AZANDE MANZA XYLOPHONE COLLECTION THROUGH A DIY REPLICIA INSTRUMENT AND ARTISTIC EXPERIMENTATION

Adilia Yip¹

Abstract

The paper will discuss the interdisciplinary methodology of re-constructing the music practice, embodiment, and social-cultural traits of historical musical instruments through making replica-sound installations and artistic experimentation. Out of the vast collection of 159 Central African xylophones of Africa Museum (Brussels), the project focuses on two manza xylophones of the Azande people in north DR Congo, a musical heritage that has been in perceptible decline since the 1950's². Performed in court events, the xylophones were owned by Chief Guga at Bondo, and acquired by Belgian military and ethnographer Hutereau in 1912, who has also collected sound recordings of these instruments. We have scarce information about the musical practice due to limited and incomplete ethnographical documentation, and lack of interest in past scientific research and expedition; hence, the project proposes to reconstruct the missing knowledge through analysing audiovisual, photography, and document archives, and through hypothesising the movement patterns, bodily posture and techniques of playing the sound recordings using the replica-sound installations. This experimental approach will reveal to us xylophone musicians' embodied experience, their musicking and listening processes (Small 1998), and a deepened understanding into the social meanings and functions of the instruments.

Keywords

African music cultures, Azande, Manza, Xylophone, Replica recordings

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² Giorgetti, P. Filiberto (1951). *Note di Musica Zande*. Verona: Istituto Missioni Africane. Confirmed during Michiels, Frank and Adilia Yip (2021). Interview on 25 February in Tervuren.

INTRODUCTION

This article focuses primarily on two manza xylophones, the court instruments that were acquired from the Azande Chief Guga of the Bondo territory, the current location called Guma, in the lower Uele district of northern DR Congo, during the expedition of Hutereau (1875-1914) in 1911-12 in the regions of l'Itimbiri-Uele-Ubangi of Belgian Congo³. The two xylophones were given the inventory numbers MO.0.0.14306 and MO.0.0.14308 when they have arrived at the museum in 1913⁴ and became part of the RMCA musical instrument collection that consists of 159 xylophones collected across Central Africa since the end of the 19th century and the beginning of colonization.⁵ Based upon an artistic research experimentation approach, the current research aims at a deeper understanding of the music practice of Chief Guga's manza through building an electronic replica of the instruments, and to analyze the historical sound recordings collected by Hutereau in the same expedition.⁶ The research gains new insights on the disappearing intangible cultural heritage and music practice—the music embodiment and bimanual coordination in particular—and further, unveils the triangular relationships between the musician's body, the instrument's construction, and the compositional concepts.

³ Hutereau's second expedition was conducted in 1913-1914 in Congo-Kasai-Lake Leopold II-Lukenie-Sankuru, and he was appointed as the head of the ethnographic section of the museum. Maes, Joseph (1934). *L'Ethnologie de l'Afrique Centrale et le Musée du Congo Belge*. *Africa: Journal of the International African Institute* 7(2): DOI:10.2307/1155530, 181-182.

⁴ Boone, Olga (1936). *Les Xylophones Du Congo Belge*. Tervueren: *Annales du Musée du Congo Belge, Ethnographie, Serie III, Tome III, Fascicule 2*, 102.

⁵ The RMCA xylophone collection on the catalogue of MIMO Musical Instrument Museums Online <https://mimo-international.com/>. The origins of the instruments spread across different territories of Central Africa, including the present countries of Central African Republic and Democratic Republic of Congo. The collection has six xylophones from other countries, for instance, three xylophones were originated in Mali, Nigeria and Senegal respectively, two from Burkina Faso, and one from Sudan.

⁶ The DEKKMMA project (Digitalisatie van het Etnomusicologisch Klankarchief van het Koninklijk Museum voor Midden-Afrika / Digitization of the Ethnomusicological Sound Archive of the Royal Museum for Central Africa) is a joint-effort of the Royal Museum for Central Africa (RMCA), Université Libre de Bruxelles and Ghent University. Its mission is to digitize the entire ethnomusicological sound archive of the RMCA.

THE MANZA XYLOPHONES OF AZANDE CHIEF GUGA

The manza is a fixed-key wooden xylophone with multiple calabashes, a main board and bridge boards. It belongs to the category 3C in the classification system of Boone⁷. Manza is the endogenous name given to most fixed-key wooden xylophones of the 3C category that were found in various Azande areas along the Uele River, such as, Bondo, Bili, Poko, Doruma, Bambesa, Likati, and Monga⁸. In the analysis of Boone⁹, the museum xylophone collection has twenty-three instruments of this kind; however, it is not clear whether all of these xylophones were called manza, and the exact ownership and functions. To clarify, Manza is also the name of the ethnic group in the Central African Republic, and an Ubangian language spoken by the Manja people.

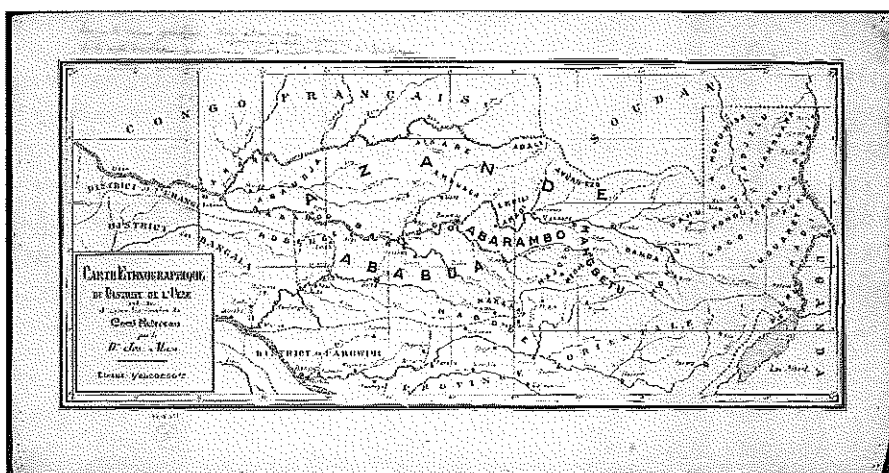
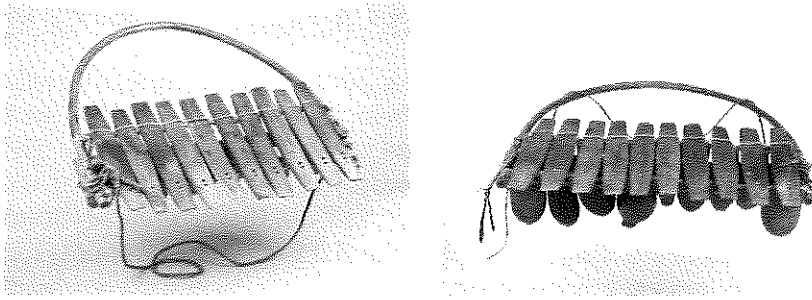


Figure 1: Map by Joseph Maes outlining the journey of the expedition of Hutereau (1911-13) © RMCA, HO.1987.18.122 and map of Belgian Congo (1932-1960).

⁷ Boone, Olga (1936). *Les Xylophones Du Congo Belge*. Tervueren: Annales du Musee du Congo Belge, Ethnographie, Serie III, Tome III, Fascicule 2, 99-100.

⁸ *Ibidem*, 101-104.

⁹ Boone, Olga (1936). *Les Xylophones Du Congo Belge*. Tervueren: Annales du Musee du Congo Belge, Ethnographie, Serie III, Tome III, Fascicule 2.



Figures 2a and 2b: Chief Guga's manza MO.0.0.14308 (left) and MO.0.0.14306 (right) ©RMCA. Photo by courtesy of J. van de Vyver.

Manza could also be the name for different categories of xylophones. Manza or mandja were used to call the trough xylophones of the Ngbandi people in the lower Uele region¹⁰, the small loose-key xylophone of five keys in the Sango territory¹¹, and in the village Dembia of Zande¹². There are similar names to manza such as medzang for the Fang people in North Gabon¹³, or mbanza for the Gbambiya people in the Central African Republic¹⁴. On the other hand, a variety of indigenous names can be found for other types of fixed-key xylophones with multiple calabashes, such as, madimba (Pende, Luba, Kuba, Bena Lulua, Bena Kanioka), madjimba (Luba), kidimba (Luba) and kalangba/karangba (Togbo, Linda people)¹⁵.

¹⁰ Boone, Olga (1936). *Les Xylophones Du Congo Belge*. Tervueren: Annales du Musee du Congo Belge, Ethnographie, Serie III, Tome III, Fascicule 2, 83-84.

¹¹ *Ibidem*, 80, 83.

¹² Kubik, Gerhard (1994). *Theory of African Music*. Wilhelmshaven: Noetzel, 101-103.

¹³ Le Bomin, Sylvia (2001). *Raison Morphologique et Langage Musical: Musiques de Xylophone en Afrique Centrale*. Cahiers De Musiques Traditionnelles, 14: DOI:10.2307/40240409, 206-208.

¹⁴ *Ibidem*, 203-205.

¹⁵ Boone, Olga (1936). *Les Xylophones Du Congo Belge*. Tervueren: Annales du Musee du Congo Belge, Ethnographie, Serie III, Tome III, Fascicule 2, 89-107; Arom, S. (1991). *African Polyphony and Polyrythm: Musical Structure and Methodology*. Cambridge: Cambridge University Press, 520.

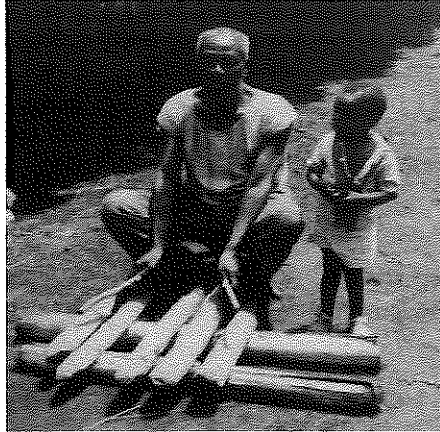


Figure 3: A five-note log xylophone manza in Dembia, Central African Republic in the field work of Kubik¹⁶ in May 1964. Photo by courtesy of the photographer.

The two Azande manzas of Chief Guga were the symbols of authority and nobility. According to the letters exchanged between Maes and Colinet¹⁷ (RMCA archive, 1932), the manza xylophones were rare among the population due to the exclusive ownership and restricted for court ceremonies and enthronements. The instruments consist of ten keys, and each key is mounted onto the main frame board in two ways: first, at about one-third of the keys, a rope passes through two small holes to attach the keys to the suspending structure made up of a big rope and thin wooden bridges. There is a bridge between the wooden keys. Second, a rope circles loosely around the other end of the keys to attach to the suspending system. The suspending system is attached to the frame board, and it acts as a cushion for the keyboard to vibrate and ring without being dampened by the frame board. Ten open holes of 4 to 5 cm in diameter are cut out on the rectangle frame board for holding the calabashes. The calabash resonators are glued to frame board by resin or rubber, and fixated by passing through some short sticks (straw or dried grass). The sizes of the calabashes are carefully matched to the pitches of the keys. For instance, when the pitches

¹⁶ Kubik, Gerhard (1994). *Theory of African Music*. Wilhelmshaven: Noetzel, 102.

¹⁷ Maes, J. (1932). *Lettrè à Monsieur Colinet, Administrateur Territorial Doruma*. Dossier Ethnographique n°619, DA.2.640_0015, Tervuren: Archive of Royal Museum for Central Africa. Unpubl. mat.

are higher, the calabashes are smaller. Different from many xylophone cultures in Africa, the calabashes of manza don't create a mirliton effect.

The wooden keys of manza MO.0.0.14306 are made in similar sizes of 34.5 to 35 cm long and 6 cm wide, while the keys of manza MO.0.0.14308 are about 31.5 to 34.5 cm long and 5.5 to 6 cm wide. For tuning the pitches, the wooden keys were shaved on the bottom side in the middle of the key, and were tapped at both ends. The keys were made of pterocarpus wood, most commonly traded as padouk (or padouk). Padouk is also commonly used in the production of Western xylophones and marimbas.

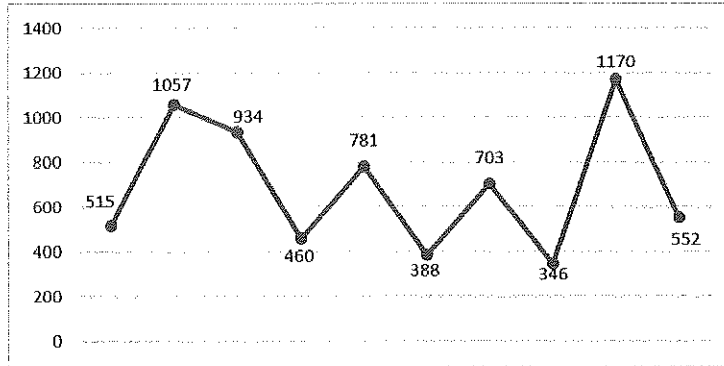
The two manzas were tuned to a pentatonic scale comprising of five distinct pitches, while each pitch is paired with an octave interval. In Western terms, the scales can be approximately written out as C4 - C5 - A#5 - A#4 - G5 - G4 - F5 - F4 - C#5 - C#4 for the manza 14306, and C5 - C6 - A#5 - A#4 - G5 - G4 - F5 - F4 - C#6 - C#5 for 14308. This gives a graph of a zigzag pattern, and the scale is neither equitonal, nor anhemitonic, because it consists of a semitone interval which is uncommon among the fixed-key xylophones in Central Africa.¹⁸ Notably, the intervals between the octaves are remarkably precise with respect to the 2:1 frequency ratio.¹⁹ A general descending direction of pitches from the left to the right of the musician is observed, which is a feature that deviates from the norm of most xylophone cultures in Africa, as well as in the world. In spite of tuned to the same five-tone scale, the two octave pairs of C and C# pitches of 14308 are one octave higher than 14306. The same phenomenon is observed from the two manzas MO.0.0.33911 and MO.0.0.33912 collected in Yakoma in 1932.²⁰ *Manza*

¹⁸ Marandola, F. (1999). L'apport des nouvelles technologies à l'étude des échelles musicales d'Afrique centrale. *Journal des Africanistes*, 69(2). DOI: 10.3406/jafr.1999.1211, 111.

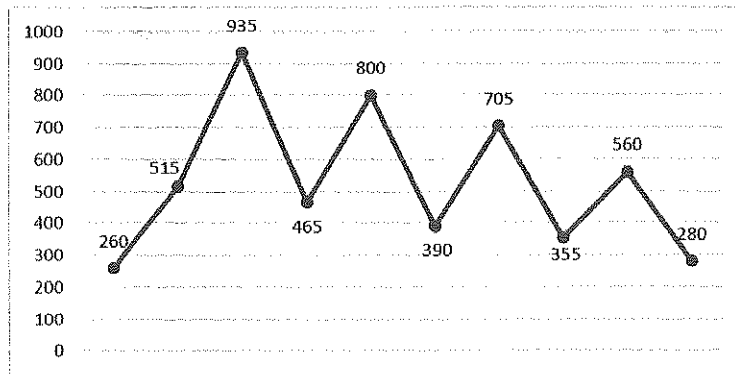
¹⁹ Linwood, Jamie Murray (1995). *The Manufacture of Tuned Percussion Instruments in Indonesia and Africa. A Selective Study*. Dissertation submitted in partial fulfilment of the requirements of the London Guildhall University for the degree of Doctor of Philosophy. Calcutta House Library. Unpubl. mat., 209. The precision of the octave interval is also observed from the xylophones of Gbaya and the kalangba of Bambari. However, Voisin suggests that consonances such as the strict octave or fifth are not recognized by Central African musicians as noteworthy intervals. Voisin, F. (1994). *Musical Scales in Central Africa and Java: Modelling by Synthesis*. *Leonardo Music Journal*, 85-90. DOI:10.2307/1513185, 2 and 35.

²⁰ Further research will resume in June 2023.

xylophones came from the same origin and owner exist in an ensemble of two to three instruments with the same five-note scale, but the octave pairs on the left-most and the right-most of the instrument could be transposed to an octave higher (i.e., or lower).



Pitch frequencies: **515** **1057** 934 460 781 388 703 346 **1170** (552) 552
 Relative pitch names: C5 C6 A#5 A#4 G5 G4 F5 F4 C#6 C#5



Pitch frequency: **260** 515 935 465 800 390 705 355 560 280
 Relative pitch names: C4 C5 A#5 A#4 G5 G4 F5 F4 C#5 C#4

Figure 4a and 4b (above and below): My measurements of Chief Guga's manza MO.0.0.14308 (above) and MO.0.0.14306 (lower). The descending pitch order counts from left to right of the keyboard. I was playing at the side of the arc (original playing position). The bolded and underlined pitches illustrate the transposition of the octave pairs.

The manza mallets are made up of thin wooden sticks tipped with rubber. The shaft of the stick is on average 31 cm long, with the rubber head in 4 cm long and 2 cm in diameter. The rubber layer is quite thin like matches, instead of shaped into a ball. The layer acts as a cushion that helps to produce a rounder sound, and reduce the scratches and

dents made onto the surface of the wooden keys due to striking. The instruments in this category don't create mirliton effect.

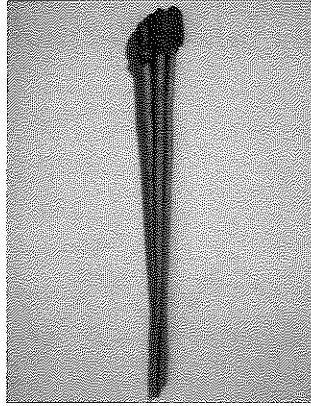


Figure 5: The sticks MO.0.0.14307 for manza MO.0.0.14306 and MO.0.0.14308. ©RMCA. Photo by courtesy of J.-M. Vandyck.

Based on the reports from ethnographers, Boone²¹ pointed out the manza and the fix-keyed xylophones of the same octave-paired tunings are supposed to play with four mallets, while each hand holds two mallets to facilitate playing the paired octaves. The statement coincides with the research of Arom²² on the kalangba in Banda-Linda and the manza in Sabanga of the Central African Republic. Different from the Azande manza, these types of fixed-key xylophones are owned and performed by the common people, and produce a mirliton effect. Linwood's research²³ shows the same use of four mallets for the court xylophones nzanjangoula in Vougba, Nzakara. In the RMCA collections and archives, the acquisition of the Azande manza xylophones were accompanied by four mallets, and appeared in ethnographical photographs of musicians and performances. For example, Chief Senza and

²¹ Boone, Olga (1936). *Les Xylophones Du Congo Belge*. Tervueren: Annales du Musee du Congo Belge, Ethnographie, Serie III, Tome III, Fascicule 2, 127.

²² Arom, S. (1991). *African Polyphony and Polyrythm: Musical Structure and Methodology*. Cambridge: Cambridge University Press, 520.

²³ Linwood, Jamie Murray (1995). *The Manufacture of Tuned Percussion Instruments in Indonesia and Africa. A Selective Study*. Dissertation submitted in partial fulfilment of the requirements of the London Guildhall University for the degree of Doctor of Philosophy. Calcutta House Library. Unpubl. mat., 186.

his brother in Bili, two virtuosic manza musicians, were using those four mallets in the photograph.

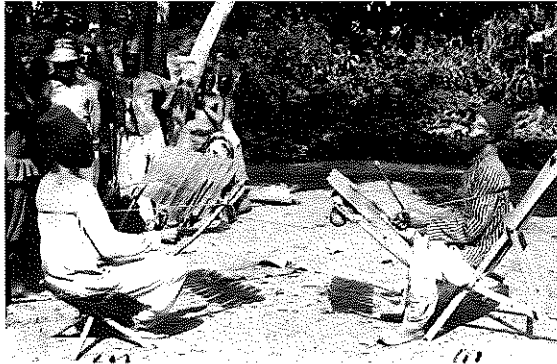


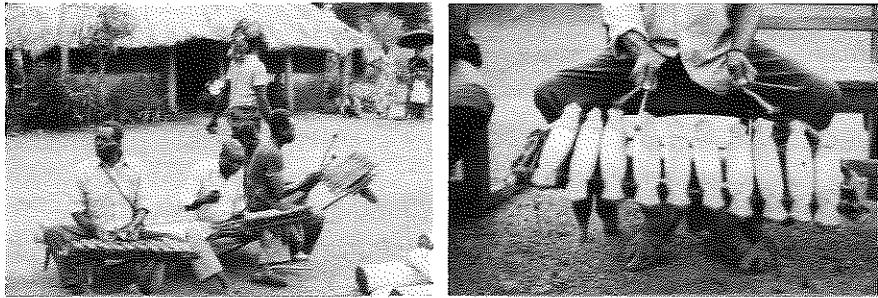
Figure 6: Chief Senza and his brother Kanga, two virtuosic Zande manza musicians of the royal Vungara clan, taken by Hutereau at Bili. Source: RMCA archive EP.0.0.14694.

A plausible reason of using four mallets to strike the octave pairs could be the reinforcement of the instrument's sonority²⁴. In regard to the sonority of manza and the ensemble combination, the manza is seemingly not powerful and loud enough when performed together with vocals and drums, therefore, doubling the sonority in an octave can increase its sound volume. Most often, two or three manzas were performed at the same time, identified as the high (batanga), middle (bangelo) and low (bamanza) range. According to Hutereau's recordings on DEKKMMA, a solo manza performance in Bondo was accompanied by a solo or a group of singers, or a gaza drum (skin drum). In Doruma, a region of Azande in the upper Uele River, the manzas were rarely performed with three instruments simultaneously. The low intensity of sonority hindered its collaboration with other instruments, nor to accompany dances. It is used only in the circle of notables gathered in the barondo, or the bwadimo (reserved enclosures of the harems for the ladies in Islamic communities), as well as on the occasion of certain

²⁴ Boone, Olga (1936). *Les Xylophones Du Congo Belge*. Tervueren: Annales du Musée du Congo Belge, Ethnographie, Serie III, Tome III, Fascicule 2, 127; Arom, S. (1991). *African Polyphony and Polyrhythm: Musical Structure and Methodology*. Cambridge: Cambridge University Press, 520; Ciccarello, V. (2014). *Panorama Musical de l'Uele, Bas-Uele: Pouvoirs Locaux Et Économie Agricole: Héritages D'un Passé Brouillé*. Tervuren: Musée Royal De L'Afrique Centrale, 108-109.

celebrations or at the funeral of a great chief.²⁵ The manza ensemble of the Azande Chief Senza in Bili was made up of anzoro (bell) and various drums.²⁶

A wooden arc is connected to the keyboard's frame for resting and stabilizing the instrument at specific body positions of the performer. Refer to image 5, we can see that the musicians were sitting on the arc with open legs, and a long strap circles around the upper arms of the musicians. The keyboard was positioned at a tilted upright angle to the musician's body. In the photo archive, we can find various positions of the instruments, and ways of using the strap and arc. For the manzas in Limba, musicians were sitting on the arc, or the arc was placed between the legs²⁷ (Figures 7a and 7b).



Figures 7a and 7b (left and right): Manza musicians in Limba. Photography from 1986 by courtesy of Frank Michiels. Source: RMCA archive MP.0.0.5953 (left) and MP.0.0.5961 (right).

INCOMPLETE ETHNOGRAPHICAL DATA ON MUSIC PRACTICE

Hence, the instrument's zig-zag tuning, four mallets technique, and construction have attracted my attention. Little has been discussed in the museum archives and literature, and I have further questions on

²⁵ Ciccarello, V. (2014). *Panorama Musical de l'Uele, 'Bas-Uele: Pouvoirs Locaux Et Économie Agricole: Héritages D'un Passé Brouillé*. Tervuren: Musée Royal De L'Afrique Centrale, 109; Boone, Olga (1936). *Les Xylophones Du Congo Belge*. Tervuren: Annales du Musée du Congo Belge, Ethnographie, Serie III, Tome III, Fascicule 2, 120.

²⁶ The sound recordings of Hutereau (1912). Source: DEKKMMA archive, MR.1959.5.126, MR.1959.5.127 and MR.1959.5.130.

²⁷ Michiels, Frank and Adilia Yip (2021). Interview on 25 February in Tervuren.

music practice: How do Azande manza musicians play the instruments, and how do they conceive music? Would they play the instruments with two sticks, and rearrange the keyboard in a different way? How do manza musicians understand the phenomenon of the octave interval, as they tuned the instruments precisely with the frequency ratio of 2:1? These questions have led to a deeper investigation of the interrelationships between the musician's body, the musical instruments and the social-cultural traits.

Due to limited ethnographical reports, it is difficult to draw up a detailed explanation of the music practice of the manza xylophones. The photographs and historical records are giving us some clues, for example, techniques of holding the mallets, body position, combination of instruments; however, the deeper knowledge of music embodiment and musical concepts, as well as the precise ethnographical data are unrevealed to us. In addition, there are gaps of knowledge and tensions between fiction and authenticity in the archives, despite of the preciousness of these historical recordings, silent films, and photographs.²⁸ In the sound recordings of the Azande manza in Bongo, the same musical patterns were performed with different combinations of instruments, for instance, the manza, solo and group voices, and gaza drums.²⁹ It is difficult to judge whether these combinations and compositional structures were applied in the court performance, or arranged according to the request of the ethnographers and collectors. Some written records of the recordings are vague and incomplete, for instance, the title, name of musicians, function, and social context are missing in the database. The rare silent films taken during Hutereau's expedition in Belgian Congo³⁰ and Ruanda-Urundi (1911-13) only show blurry visuals in black and white, and the date and location of filming are not mentioned in the reports, nor the identity of the performers and instruments were included. In the film, people were standing behind the instruments and the dancer(s), which could be an idea suggested by the ethnographers to get better visual results for the film. Besides, we can hardly retrieve further knowledge of practice by

²⁸ Vanhee, H. Reality and Fiction in Ethnographic Photography of the 1950s. https://www.africamuseum.be/en/discover/focus_collections/display_group?groupid=359, last visited 25 September, 2023.

²⁹ DEKKMMA archive, not yet publ. mat.

³⁰ Hutereau, A. (1912). Notes sur les Instruments Congolais. s.n.; Hutereau, A. (1922). Histoire des Peuplades de l'Uele et de l'Ubangi. Bruxelles: N.p.

simply observing the photographs. With a given title “Young Chief Bakuba Dances”, the dancer and musicians were not performing in this image, and we don’t have data on the event and the social context. We can only obtain certain partial information, such as, the clothes of Chief Bakuba who was the dancer, and the group of musicians and their instruments—xylophone, slit drums and skin drums.

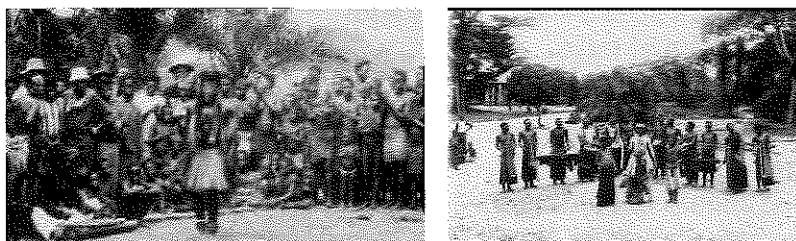


Figure 8a and 8b (left and right). (left): A still of Hutereau’s nitrate film (1911-12), filmed in Ubangi and Uele. The solo dancer was accompanied by a small paningbwa log xylophone (lower left corner) and ensemble. Access link: <https://youtu.be/euGb5YVZvLM>. Source: RMCA archive; (right): Photo *Young Chief Bakuba Dances* taken in 1905 in Congo. Source: RMCA collection AP.0.0.6511.

Therefore, my curiosity has driven me to research into the ways of performing and composing the manza. These music practices are incommensurable in our Western understanding. In spite of the incomplete ethnographical record, I designed an electronic replica xylophone and artistic experimentation to continue the investigation to support the other research packages of music analysis, archival research and ethnography.

ARTISTIC EXPERIMENTATION: MAPPING SOUND RECORDINGS TO INSTRUMENTS

The research of music practice through mapping the instrument’s physical construction to the sound recordings is not entirely new. Similar approaches can be found in ethnomusicology and archaeology. Blacking³¹ has played a similar model of Nyamulera notched flute (also the recordings) of Uganda that is possessed by The International Library of African Music to postulate the instrument organology and the

³¹ Blacking, John (1955). Eight Flute Tunes from Butembo, East Belgian Congo—An Analysis in Two Parts, Musical and Physical. *African Music 1* (2): 36-52.

playing technique of eight tunes of the Butembo Nyamulera flute from north-eastern Belgian Congo. For postulating the conception of musical scales and tuning systems of xylophone musicians in Central African Republic, researchers have modified the tuning of a synthesizer (MIDI keyboard) and extended the keys with wooden boards to simulate the original instruments and musical scales, thus, xylophone musicians were invited to justify the correctness of the tunings.³² In the analysis on the kalimba tunes from Nsenga, a Bantu-speaking people of south-eastern Zambia, Blacking³³ concluded that the instrument doesn't seem to have musical patterns common to different melodies; but when the fingerings and rhythm are compared, some recurring patterns of fingerings appear, inextricably linked to different patterns of polyrhythm. As remarked by ethnomusicologist Wachsmann, the importance of studying the human experience of playing an instrument is to reveal "their experiencing", a person's programs for sensing, thinking or dreaming (1982: 198).

The first step of making the DIY replica is to create a simplified wooden keyboard that imitates the physical shape of the manza. I measured and copied the sizes of the wooden keys and the structural frame of Chief Guga's manzas 14306 and 14308 to the replica. The main purpose is to provide physical and musical experiences for testing and practising the movement patterns and bimanual coordination of playing the manza and the DEKKMMA music recordings. The process shines light on the analysis and hypothesis of the music embodiment and ergonomics of manza music. The second step is to re-sound the manzas by using an electronic music system. I have sampled the sonorities of the original manza collection, and saved the files to the digital audio station (DAW) i.e., Reaper on my laptop. Striking the replica keyboard with mallets trigger the contact microphones, and they pass signals to Reaper. We will then hear the playback of the sound samples from the speakers or headphones.

³² Voisin, F. (1994). Musical Scales in Central Africa and Java: Modelling by Synthesis. *Leonardo Music Journal*, 85-90. DOI:10.2307/1513185.

³³ Blacking, John (1961). 'Patterns of Nsenga Kalimba Music,' *African Music: Journal of the International Library of African Music* 2 (4): 26-43. DOI 10.21504/amj.v2i4.704

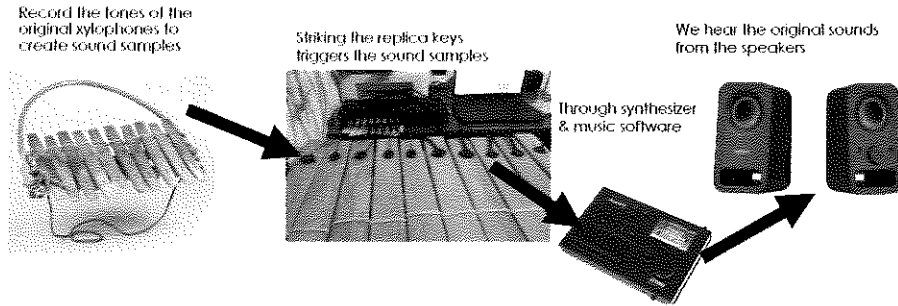


Figure 9: The DIY electronic sound system design.

Only particular structural parts of the manza are resembled to the replica. Since the natural sonority of the wooden keys is replaced by the electronic playback, it is unnecessary to build the resonators and tune the wooden keys. The replica keyboard and sound system use low-cost and recycled materials. The keyboard is attached to two long wooden logs using some ropes. One rope passes through the two holes of the wooden keys, and the other rope wraps around the keys. I cushioned the structural wooden logs with plastic foam—leftovers of exhibition materials of the museum—to replace the original rope suspending system, and the whole replica was made up of oak instead of the valuable padouk (*pterocarpus*). I re-used the sticks of my old marimba mallets, and tipped the end with old rubber tyre. The keyboard is mounted on a metal stand which is commonly used for an electronic piano keyboard, and I managed to adjust the height and the inclination of the stand to copy the body position of placing a manza. For the contact microphones, I have bought a couple of piezos and cables from a local electronics shop, and learned how to solder the delicate wires from friends and on Youtube. The production of each contact microphone only costed around 5 Euros.³⁴

MAPPING INSTRUMENTS WITH SOUND RECORDINGS

In the same expedition, it is believed that Hutereau has recorded a number of wax cylinder recordings with Chief Guga and his

³⁴ I would like to thank Edward Dekeyser, Ludovique Nyamabo Mulamba, Bernadette Choy, Yannick Heeren, Gorik De Smet, Lin Gerritse and Han Trax for their generous help in creating the electronic system, and Henry's House (Mortsel) for sponsoring the wood.

instruments. The study focused on three of these recordings with registration numbers MR.1959.5.157, MR.1959.5.160 and MR.1959.5.161.³⁵

There are no exact written records to confirm the presence of 14306 and 14308 in these recordings, but a simple measurement with Sonic Visualizer³⁶ can confirm this assumption. The frequency spectrograms show that the recordings match almost precisely for 14308, but only partially for 14306. This leaves us the questions of whether 14306 was in the recording at all, and if not, why the two instruments were not performed together as a duo. From my listening experience, I can hear clearly the five tones, and vaguely the octave intervals of the manza in these recordings. It is difficult to identify the octave pairs as separated melodic layers. Next to the poor audio clarity, the recordings also have very loud white noises, and the melodic and rhythmic patterns are bent constantly because of the irregular turning speed of the wax cylinder recording equipment. When the cylinder spun faster, the pitches had gone higher and sharper. Popular around 1896-1915, a wax roll of 120 rpm (rate per minute) can only play for as long as 4 minutes. Hutereau and his team might have speeded up the cylinder to record more music. This effect is obvious in recordings MR.1959.5.161 and MR.1959.5.157, in which the tempo and pitches fluctuate consistently. Due to these conditions, the comparison of the tuning of the recordings and instruments should be understood as an approximated evaluation. In conclusion, I may confirm that the instrument and recording are closely related, despite a small deviation of 29 cents, which is equal to a third of a semitone interval of 100 cents. Here is a table to illustrate the comparison in reference to the cent system.

³⁵ In the presentation flow, there were then played Excerpt of MR.1959.5.157, Excerpt of MR.1959.5.160, Excerpt of MR.1959.5.161 from the RMCA DEKMMMA sound archive.

³⁶ Sonic Visualizer, an open-source software for visualization, analysis and annotation of audio recordings.

Relative pitch name	Discrepancy between manza MO.0.0.14308 and Western equal-tempered tuning (measured in cents)	Discrepancy between recording MR.1959.5.160 and Western equal-tempered tuning (measured in cents)	Deviation between manza and recording measured in Cents.
C#6	Larger than +40 º (equivalent to D6 = -9º)	Larger than +40 º (equivalent to D6 = -20º)	11 º
C6	+18 º	+4 º	14 º
A#5	+4 º	+15 º	11 º
G5	-12 º	+17 º	29 º
F5	+5 º	+14 º	9 º
C#5	-2 º	-1 º	1 º
C5	-35 º	-15 º	20 º
A#4	-16 º	-4 º	11 º
G4	-14 º	-2 º	12 º
F4	-9 º	-19 º	10 º

Figure 10: Table comparing the tuning of the pitches of manza MO.0.0.14308 and recording MR.1959.5.160.

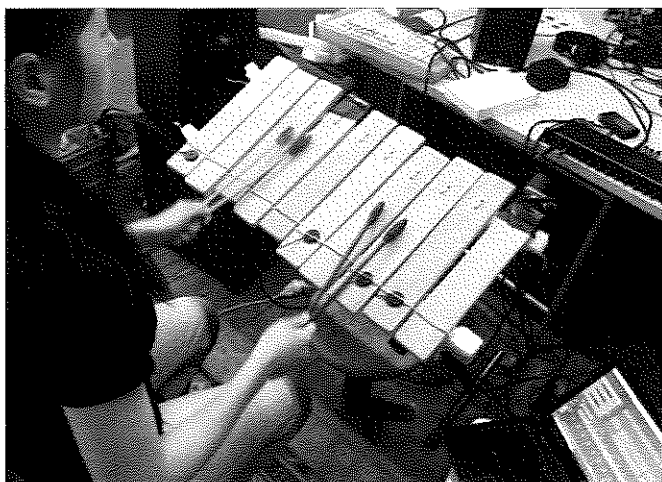


Figure 11: Rendition of sound recording MR.1959.5.160.³⁷

³⁷ Still of a video made by the author during a sound recording MR.1959.5.160: <https://youtu.be/srGjHV0fn-s>, last accessed 25 September, 2023.

SOME OBSERVATIONS OF THE PERFORMANCE PRACTICE

ENSEMBLE PRACTICE

The written data on DEKMMA archive states that there was only one manza used in these recordings, which is MR.1959.5.157. It was performed by a solo manza, while the other two tracks were performed together with voice(s) and a gaza drum. According to Boone and the photographic record of Michiels³⁸ (1986), two or three manzas were often performed at the same time, and they are usually not accompanied by other percussion instruments because the sonority of manza is comparatively weaker. Thus, the instrumentation heard in these recordings don't synchronize with the literature. This could be a preference of Chief Guga, and it seems 14308 was the solo instrument, i.e., batanga, of Chief Guga's ensemble, and it does not necessarily perform together with another manza of lower range like 14306. We cannot explain yet the function of 14306 in the ensemble, albeit it must be one of them. It is also possible that there are still other types of manzas in Chief Guga's ensemble, but they were not documented or recorded by Western ethnographers.

BIMANUAL COORDINATION

The movement planes³⁹ of Chief Guga's manzas are shared equally between the two hands, where the left hand strikes the left half of the keyboard, and the right hand strikes the part on the right. The musician holds two mallets in each hand, and strikes the octave pairs simultaneously. I suggest the left hand plays the octave pairs of C, A#, G, and the right hand plays G, F, C# (figure 4, 5). Hence, I suppose the movement planes of the manza bimanual coordination is symmetrical,

³⁸ Boone, Olga (1936). *Les Xylophones Du Congo Belge*. Tervueren: Annales du Musee du Congo Belge, Ethnographie, Serie III, Tome III, Fascicule 2, 120; Frank Michiels was an important Belgian jazz musician at the end of the last century. Percussion was his very field of activities. Michiels, Frank and Adilia Yip (2021). Interview on 25 February in Tervuren.

³⁹ The concept of movement and spatial plane is coined by Kathleen Coessens to illustrate and compare the movement approaches of pianist and cellist. Coessens, Kathleen (2019). *On the Sensorial of the Human Body in Performance. Sensorial Aesthetics in Music Practices*. Leuven: Leuven University Press, 133-150. DOI:10.2307/j.ctvc771s4

and the octave pair G5-G4 in the middle is shared by both hands. Besides, the central and straight body position as shown in the photo of Chief Senza suggests that abrupt and cross-hand movements are not favourable and might drop the instrument. The arc and strap don't seem to allow the body to turn around while playing.

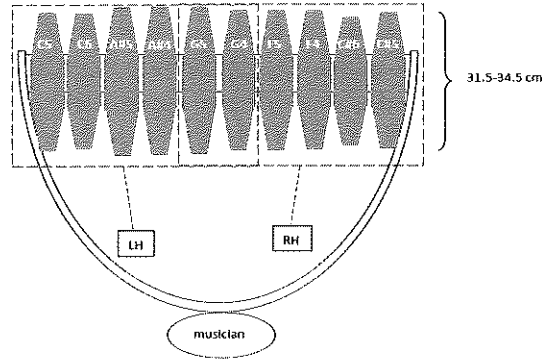


Figure 12: Layout of the keyboard of manza MO.0.0.14308. The two dashed-line squares mark the movement planes assigned to each hand.

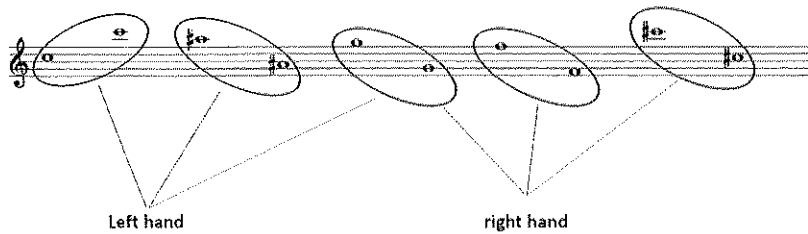


Figure 13: Symmetrical bimanual movement planes of the zig-zag scale of manza MO.0.0.14308.

Therefore, the zig-zag scale and the organology of the manza keyboard guide the specific bimanual coordination patterns. In recordings MR.1959.5.160 and MR.1959.5.161, the repetitive short fragment of C-A# was played two times by the left hand. But when it was repeated for the second time, the C-A# pattern starts at a quaver rest later. This gives a hoquet effect against the right-hand melody. Besides, observed from the recordings, the higher tones of C and C# octave pairs seem to be accentuated by the musicians, and the lower octave pairs of G and F sound rather like accompaniment. A general movement pattern of starting from the C# and C octave pairs, then, move inward to the middle of A#, G and F is observed in these recordings.

Figure 14 consists of three systems of musical notation, each with a right-hand staff and a left-hand staff. The top system (MR.1959.5.157) shows a right hand with a melody of eighth notes and a left hand with a bass line of eighth notes. The middle system (MR.1959.5.160) shows a right hand with a melody of eighth notes and a left hand with a bass line of eighth notes. The bottom system (MR.1959.5.161) shows a right hand with a melody of eighth notes and a left hand with a bass line of eighth notes.

Figure 14: Western transcription of the excerpts MR.1959.5.157 (above); MR.1959.5.160 (middle) and MR.1959.5.161 (bottom), illustrating the bimanual coordination.

RELATIONSHIPS BETWEEN THE MALLETS AND THE INSTRUMENT CONSTRUCTION

I argue that the flat rubber tipped mallets were made to work with the inclined position of the manza keyboard. Compared to xylophone that are placed horizontally (i.e., like a table), the manza's upright inclination permits the flat rubber tip to strike the keyboard without the long sticks clashing the keyboard. In most cases, the horizontal xylophones were performed with mallets that are tipped with round balls, and mounted on thicker and shorter sticks. Examples could be the Yakoma fixed-key xylophones MO.0.0.33911 and 33912, and manza MO.0.0.34515 of Gambavudu in the lower Uele district. If the flat-tipped mallets are used for a horizontal xylophone, musicians might have to lift up their wrists to prevent the unwanted clashing noises by the shafts of the sticks on the wooden keys. The most appropriate ergonomics of the wrists is to stay lower than the hands, otherwise, lifting the wrists is an unnatural position and cause injuries.

HAND GRIP

The last observation is the hand grip of the four mallets. While holding two mallets in each hand, the hand grip doesn't have to adjust constantly for playing the octave pairs, which are in identical spatial distance. There is no need of flexibility of the fingers for changing the distance between the mallets, and musicians only need to grip the mallets

firmly to strike simultaneously the octave pairs. The image of Michiels⁴⁰ shows a close-up of the hand grip (Figure 7b), which the manza musician was basically holding the mallets with a clenching fist. The thumb rests above the mallets, and the fingers wrap tightly around them. In comparison, Western percussionists endorse flexible hand grips in order to accommodate his/her body build, size of the hands, and personal approach in music (Figure 15). The fingers adjust the distance of the two mallets with refined movements, so that he/she can play different musical intervals and distances of the keyboard.

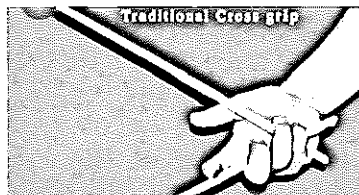


Figure 15: Traditional cross grip of Western marimba four-mallet technique.

CONCLUSIONS

The artistic experimentation and the electronic replica have enabled me to examine the xylophones in a closer range, despite there are still many questions left unanswered, for instance, explanation over the precise ratio of 2:1 for the octave pairs. Although the experimentation approach is largely predisposed by my knowledge and skills as a Western art music trained musician, it is regarded as the crucial take-off for the ethnography and participatory creative actions of the project. Through analyzing the archives, instruments, and music recordings, I may re-construct the music practice through artistic experimentation, and the experiment gives insights on the relationships between musician's body, instrument, and compositional concepts. Music practice is the main pillar of the participatory and ethnographical activities, and it guides the future co-creation and co-experimentation for reviving the forgotten and declining music practice of the patrimonial society in Azande. The intangible cultural heritage has been kept with the xylophone collection of the museum, but the culture has been forgotten and on decline due to the disruption and erasure by colonisation and Western cultural influences. The end goal of the project is to support the co-

⁴⁰ Michiels, Frank and Adilia Yip (2021). Interview on 25 February in Ter-
vuren.

creation and co-experimentation activities with source communities and diaspora, and we will invite participation of musicians and students in Europe to join as well. We hope the creative dialogues may help us to revive and unmute the meanings and musical language of the declining/declined musical instrument collections. Researcher and participants will search together *the different same* for the musical instrument collections, and hence, the collaborative experience will lead us to deeper reflections on decolonial values and the right approaches for the restitution of musical instrument collections.

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REMARKS

The DEKKMMA project (Digitalisatie van het Etnomusicologisch Klankarchief van het Koninklijk Museum voor Midden-Afrika / Digitization of the Ethnomusicological Sound Archive of the Royal Museum for Central Africa) is a joint effort of the Royal Museum for Central Africa (RMCA), Université Libre de Bruxelles and Ghent University. Its mission is to digitize the entire ethnomusicological sound archive of the RMCA.

The two abbreviations used are DEKKMMA and RMCA for those purposes.

THE FUNCTION OF THE TIMBRE OF MUSICAL INSTRUMENTS AND IT'S REFLECTION IN RELIGIOUS CEREMONIES OF CHINA

Zhong Wei Cheng¹

Abstract

There are many kinds of national musical instruments in China, which can be divided into wind, string, plucked string percussion according to different performance methods. Each type of musical instruments has different timbres due to different sounding materials and the high and low frequencies produced while playing melodic units. In the current occasions of folk activities, the use of various musical instruments presents a uniqueness of distribution of occasions. This topic will focus on the discussion of the characteristics of the timbre of the main musical instrument in folk Daoist ceremonies and the issue of the timbre of the instrument, aiming to answer 'What kind of functionality does the timbre of the instrument has in Daoist rituals?' and 'Why does they have these functionalities?' and other questions.

Keywords

Ritual music, Musical instruments, Timbre, Functionality

OVERVIEW OF RESEARCH OBJECTS

Folk belief cultures flourish in Cangnan² area, among which Daoist culture is the most representative. According to different schools, Daosim in Cangnan area is divided into multiple branches: Quanzhen

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² Cangnan County: A county under the jurisdiction of Wenzhou City, Zhejiang Province, China.

Zhong Wei Cheng (2023). The Function of the Timbre of Musical Instruments and It's Reflection in Religious Ceremonies of China. *SIMP, Studia Instrumentorum Musicae Polpularis (New Series)*, 8. Edited by Gisa Jähnichen. Berlin: Logos, 227-242.

DOI 10.30819/5685.15

School³, Zhengyi School⁴, Donghua School dresses, Lushan School and other branches, and the object of discussion in this article is mainly the rituals of praying for blessings and curing illnesses performed by the Zhengyi School. The reason for choosing the Zhengyi School is that the local Zhengyi School has the largest number of public officials on the list, and 5th ceremonies held are extensive in the local area; 'Zhengyi School of Ritual Music' was successfully declared as a national intangible cultural heritage protection list.

The instruments in Zhengyi Daoist ceremonies are mainly played by Xuan and musicians.⁶ Among them, Gong Xi is in charge of percussion instruments, such as big drums, big gongs, small gongs, and cymbals; musicians are in charge of melody instruments, such as suona, flute, banhu, erhu, and yuehu. At the beginning of the ceremony, Xuan and the musicians will sit on both sides of the main altar (Figure 1), and cooperate with each other to make music together. Therefore, in various musical instrument combinations, due to the difference of the main instrument, there are three combinations of wind and percussion

³ Quanzhen school means that males are called qiandao, females are called kundao. They are required to become monks and nuns and practice as monks and nuns, live in Daoist temples, wear their hair in a bun, wear square robes with wide sleeves. To them, marriage is not allowed, they follow the given scriptures, and accept the three precepts. Their practice methods consist of listening to teachings, discussing scriptures and prophecies, and alchemy for internal cultivation. The Daoist priests in this county focus on discussing scriptures and prophecies that can be summarized as 'Chaodu Dojo', commonly known as 'doing Buddhist deeds'. The explanation is from Cao Benye and Xu Hongtu (2000). *Research on Daoist Music of Wenzhou Pingyang Dongyue Temple*. Taipei: Xinwenfeng, 23.

⁴ Zhengyi School is the one, that was ordained by Zhang Zhenren, the celestial master in the Longhu Mountains, Jiangxi Province, and became then commonly known as 'accepted'. They are all male, do not become monks, do not eat vegetarian food, can marry, and live similarly to ordinary people. They are layman Daoists". Among them, there are Daoist priests and public officials. The explanation is from Cao Benye and Xu Hongtu (2000). *Research on Daoist Music of Wenzhou Pingyang Dongyue Temple*. Taipei: Xinwenfeng, 23.

⁵ Because of the dialect problem, Xi Gong is also called 'Shi Gong'. The word 'Xu Gong' mentioned in this article refers to a fraction of Zhang Zhenzhen in the Longhu Mountains of the Cangnan area.

⁶ The person in charge of playing musical instruments in the Zhengyi Daoist Temple in Cangnan area is called a musician.

ensemble music, silk bamboo gong and drum music and Qing gong and drum music.

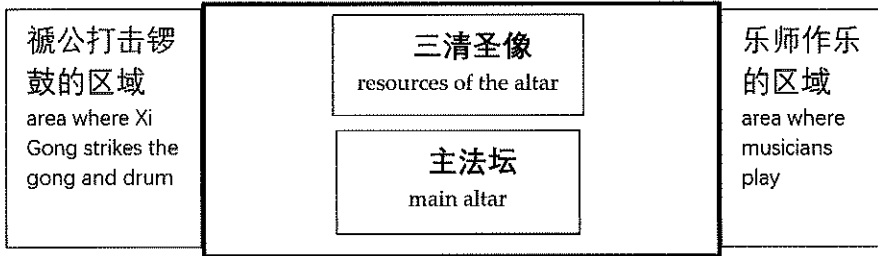


Figure 1: Outline map of dojo area distribution, scheme by the author.

The form of wind and percussion music has been used in Daoist ceremonies in Cangnan area for a long time. However, the author found in the literature review that most of the current research on Daoist music in the academic circles focuses on issues such as vocal arias, the characteristics of the repertoire and its functionality, while ignoring the content records of the wind and percussion combination. Therefore, the author interviewed many local wind and percussion musicians (also known as musicians) and Xuan Gong, and first learned about when wind and percussion music began to be used in local Daoist ceremonies. After sorting out, I basically have the following opinions:

It is said that it was only in the past 30 years. Because everyone in the village was poor in the early days, there was no extra money to hold Daoist ceremonies. Usually, the whole village is gathered to invite Daoist priests to perform the ceremony. Since there are no musicians, the public only use gongs, drums, cymbals, boards and metal instruments to accompany the ceremony. Later, when the villagers became rich, they began to invite musicians to come to make music for Daoist ceremonies; another theory is that there has always been a tradition of using wind and percussion music in local Daoist ceremonies. In the early days, there were only suona and banhu in the ceremony, and then the musicians gradually added yuehu, di, ruan and other instruments.

During many field trips, the author collected and sorted out a large amount of audio and video materials, oral interview materials of musicians and relevant historical documents. Based on the available information, the use of wind and percussion music in the Daoist rituals of the Cangnan Zhengyi School has formed a relatively fixed shape.

ORIGIN OF THE PROBLEM

In July 2021, I conducted a field investigation for more than 40 days in Cangnan County, Wenzhou City, Zhejiang Province. The content of the investigation is the use of national musical instruments in Zhengyi Daoist ceremonies in Cangnan area. According to the content of the ceremony, the Daoist ceremonies of the Cangnan Zhengyi School mainly include: praying for blessings, curing illnesses, celebrating birthdays, fulfilling wishes, opening the way for funerals, etc. Among them, Daoist ceremonies with the content of 'blessing' are held most frequently. Therefore, the author chose the 'blessing' ashram in the Daoist ritual of the Zhengyi School as the case for discussion in this article.

There are many procedures set up in the 'Prayer' Daoist place, including: opening the drum, asking for water, stamping the seal, opening the teacher, ordering the altar, and entering the watch. During the investigation, I found that in many ceremonial links, the musicians next to me can choose different instruments according to the process of the ceremony, and perform the corresponding repertoire required for the ceremony. For example, before the ceremony, the musicians will place various wind instruments (*suona*, *di*), string instruments (*yuehu*, *banhu*) and plucked string instruments (*ruan*) beside them for easy access; Then they play the *suona* first. During this period, the ceremonial master Xuan walked into the altar with the sound of the *suona* and began to perform *Gangbu Dou* (a series of movements of respecting the deities before the ceremony). Immediately they enter the next process (usually a singing session with human voices such as *Qizheng*), and the musicians on the side will also follow the action of Xuan Gong to stop the *suona*, and immediately replace it with a string instrument (*banhu* or *yanhu* and other string instruments), And accompanied by the melody chanted by Xuan, perform musical instruments of the same melody; after Xuan finished singing, the musicians would replace the string instrument with a *suona* again, and Xuan performed a series of gestures of thanking the Deity along with the melody played by *suona*, and finally exited the Deity-altar. At this point, the ceremony is over.

Changing musical instruments during ceremonial sessions is a common phenomenon in Daoist ceremonies in this area. But why change instruments during the ceremony? How is the use of musical instruments related to the ritual? As the question was raised, I thought first, is this related to the timbre of the instrument? Therefore, the following

is my discussion on the basis of field investigation, narration by musicians, the relationship between musical instruments and rituals, and the analysis of data characteristics of musical instrument timbre.

RITUAL REPRODUCTION

time	Ceremony name and frequency	lead instrument	Name of the piece	musician
07:25—07:28		suona	Liu Yaojin	Xiao Ridong
07:28—07:44	Do a feast (first time)	no musical instrument	/	/
07:44—07:47		suona	return	Xiao Ridong
07:54—07:59		suona	Liu Yaojin	Xiao Ridong
07:59—08:14	Into the table (first time)	Banhu	Hornets out of the hole	Xiao Ridong
08:14—08:17		suona	Small open the door	Xiao Ridong
08:30—08:33		suona	Liu Yaojin	Xiao Ridong
08:33—08:38	Do a feast (second time)	no musical instrument	/	/
08:38—08:41		suona	return song	Xiao Ridong
08:48—08:50		suona	Liu Yaojin	Xiao Ridong
08:50—09:10	Into the table (second time)	Banhu	Hornets out of the hole	Xiao Ridong
09:10—09:12		suona	Small opening, small transition	Xiao Ridong
09:18—09:20		suona	Liu Yaojin	Xiao Ridong
09:20—09:31	Confession (first time)	banhu, zhongruan	June Snow, Confession Song	Xiao Ridong, Xuan Gong
09:31—09:33		suona	Small open the door	Xiao Ridong
09:53—09:57		suona	Liu Yaojin	Xiao Ridong
09:57—10:04	Into the table (third time)	banhu	Hornets out of the hole	Xiao Ridong
10:04—10:06		suona	Small open the door	Xiao Ridong
10:21—10:57	noon	suona, yuehu	Liu Yaojin, Wannianhuan	Xiao Ridong, Xuan Gong

Figure 2: Flowchart of Daoist ‘blessing’ ceremony of Zhengyi School in Jinjiazhuang Village on July 25 (morning part).

On 25th July, 2021, I watched a ‘ blessing ’ in Jinjiazhuang Village, Wangli Town, Cangnan County. The ceremony lasted for three days, and that day was the second day of the ceremony. According to the ritual process formulated according to the wishes of the host family, the content of the ceremony in the morning mainly focused on "

admitting the table⁷ and 'doing the offering'⁸. Therefore, from 7:25 to 10:57h, the ritual activities were carried out three times for the 'advancement', two 'doing sacrifices' and one 'repentance'. The specific ceremony process is as follows:

It can be seen from the picture that the order of presentations of the musical instruments in the two 'Jiaojiao' ceremonies is 'suona — no musical instrument — suona', without musical accompaniment. During the three 'advances' and one 'repentance' rituals, the musical instruments change in the form of 'suona - banhu - suona'.



Figures 3: (left, during the ceremony) musician Xiao Ridong is playing the suona; Figure 4 (right, during the ceremony) Musician Xiao Ridong bowing the banhu.

If the structural part of the 'entering the watch' ceremony is extracted, it will be presented as three small intervals, namely:

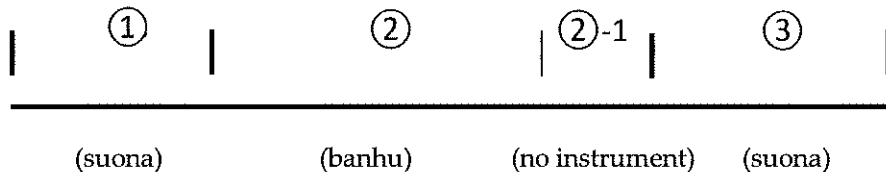


Figure 5: Schematic diagram of the structure of the 'Entering the Table' ceremony.

⁷ Entering the table: also known as 'upper table' and 'worship table' is one of the important ritual procedures in Daoist ceremonies. The process of this ceremony is to send a letter to the heaven hoping that the Deity will bless and fulfill the vow.

⁸ Ritual offerings: A type of Daoist ritual process, in which deities are invited to the altar to receive offerings. It is mainly to beg for blessings and eliminate disasters. Quoted from Luo Hanqi (2022). *Flow and Blend: Cangnan Daoist Ritual Sound Research*. Shanghai: Shanghai Conservatory of Music, 28.

Among them, ① represents the beginning of the ceremony. At this time, the musician played the suona, and at the same time, the three guilds entered the altar of the dojo one by one to the sound of the suona and began to perform Gangbudou, an act of worship before the 'entering the watch' ceremony). The believers (usually relatives of the host's family) will carry various tributes and follow behind the altar. After walking around the altar, they will line up and stand outside the altar. During this period, there are only the sounds of suona and percussion instruments. The piece played is *Liu Yaojin*, which is played at a faster speed and in a more enthusiastic style than in other contexts. The time used in this interval is generally 5-8 minutes, which is relatively short.

Immediately after finishing the Deity-worshiping gestures of Huan, he entered into the ② interval, which is also the core part of the ceremony. At this time, Xuan began to open the scriptures he had prepared and recite them in a melodic tune according to the content of the scriptures. The musician will put the suona aside and pick up the ready-made banhu and start playing according to the melody chanted by Xuan. The melody played is consistent with the melody chanted by Xuan. An excellent musician will also choose the corresponding pitch according to the melody sung by Mr. Xuan, and can flexibly change the fingering. At this time, the repertoires played by musical instruments are usually 'Wasps go out of the cave', 'Tai Chi Rhyme', and others. The performance speed of the repertoire is relatively gentle, with a lyrical style. The time used varies from 15-20 minutes.

Enter ②-1 after Xuan finished reciting the contents of the scriptures. During this part, the guild will recite the names of the believers (usually all members of the host's family) to pray for blessings and fulfillment of their wishes. At this time, there is no need to play any musical instruments, and the length of this interval mainly depends on the number of names of the host family members.

After all the names are recited, the ceremony begins to enter the section ③. At this time, the musician picked up the suona again, and began to play some faster and more enthusiastic songs such as *Little Interlude* and *Little Opening the Door*, indicating that the session has entered the end. The lords will do some gestures of thanking the Deity, and then put away the scriptures and exit the altar. Believers will burn the tribute they carry, as a way to convey their 'wish' to the Deities in the upper realm. After the performance of the repertoire, the whole process of 'watching' formally ended.

The entire 'watching' ceremony usually lasts about 20 minutes. According to the order of playing the musical instruments, they are respectively the changes of 'suona - banhu - suona', and this change shows a certain regularity. In the three 'Entering the Table' ceremonies held that morning, except for the object of the ceremony (the Deity or patriarch facing the performer) and the content of the scriptures chanted by Huan, the rest of the process and the use of musical instruments were basically the same.

FIELD INTERVIEW

The 'regularity' of the use of different musical instruments in the local Zhengyi Daoist rituals was of the author's interest. Then, what is the relationship between the use of different types of musical instruments and the ritual process or ritual content in Daoist 'blessing' rituals? With questions, the author successively interviewed local musicians Xiao Ridong (57 years old), Zhuang Qianjun (56 years old), Zhou Chongying (42 years old) and Xuan Gong.

Xiao Ridong: The use of various musical instruments in the Zhengyi Daoist 'blessing' ceremony is very flexible. During the ceremony, I need to watch the performance of the ceremony. For example, when 'entering the watch', I want to listen to the rhythm of gongs and drums, and at the same time watch the movements of the public servants around the altar. Their (Xu Gong) actions will remind me to what extent it is now or about to enter the next process action, and I need to prepare in advance.

Zhuang Qianjun: There is no requirement for which instrument to choose in the ceremony, but to present the content of the ceremony completely and clearly, so when we recite the scriptures, we will choose the banhu, which has a lower volume but more prominent timbre. stringed instruments to accompany them. In this way, the public can hear the sound of the instruments we play without being disturbed by the sound of the instruments.

Zhou Chongying: The musical instruments and repertoire used in Daoist ceremonies in the Cangnan area have a lot to do with local operas. For example, the suona used in the opening scene is played in operas. It evolved from the form of opera accompaniment.

Therefore, from the point of view of musicians, the author believes that there are rules for the use of musical instruments in Daoist ceremonies

of the Cangnan Zhengyi School. There are two main reasons for this. They are familiar with the process and content of the ceremony, and from what the musician Xiao Ridong mentioned, he needs and can choose the corresponding suona or banhu according to the progress of the ceremony, how far the public ceremony goes and when he needs it. He is familiar with these rules for changing instruments; second, the reason why musicians change instruments midway reflects the need for the sound of the instrument in the ceremony. Partly, when Xuan sings, he uses a banhu as a musical instrument accompanied by human voices. For insiders, the setting of this musical instrument is in line with the current ceremony, and it can also reflect the rules for the use of musical instruments.

ANALYSIS AND COMPARISON: TIMBRE OF MUSICAL INSTRUMENTS

Suona and banhu have different timbre characteristics. During the ceremony, the participants (that is, the public and the musicians) in order to achieve the ideal ritual effect, they think (such as a solemn religious atmosphere, a harmonious sound field), and select the corresponding instrument. Does this setting differ from the tonal characteristics of the instrument? Therefore, the author chose the audio and video data of the 'into the watch' instrument process recorded in the ceremony that day, and analyzed the timbre through the spectrum software shown in Figure 6.

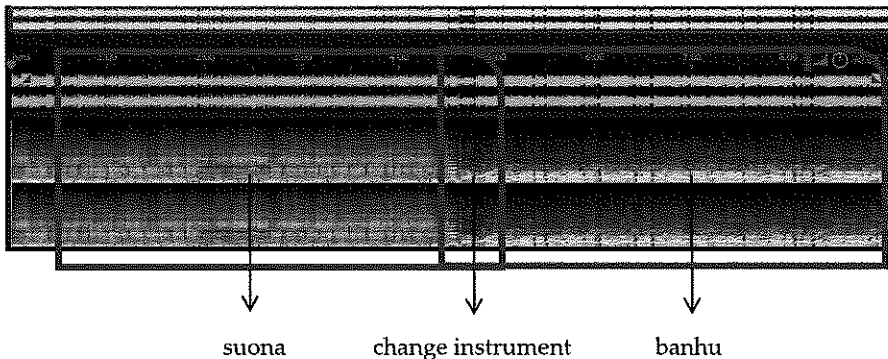


Figure 6: Spectrogram of the 0-9 minutes audio clip of the ceremony

The upper green area is the waveform, the horizontal axis represents time (s), and the multiple axes represent the loudness of the audio (db); the lower red area is the three-dimensional spectrogram, the horizontal

axis represents time (s), and the vertical axis indicates a change in formant (Hz) range (brightness band, louder volume). The author selected audio clips from 0-9 minutes to show the characteristics of the instrument transitio, and marked it with two red rectangular lines. Taking 4 minutes and 43 seconds of the audio as the boundary, the left side is the formant frequency of suona playing, and the right side is the formant frequency of banhu playing. The place where the two overlap is the position where the musician changes instruments. It can be seen from the changes of the front and back formants that, on the whole, the concentration of the red area (or the energy presented) in the suona part is higher than that in the banhu part.

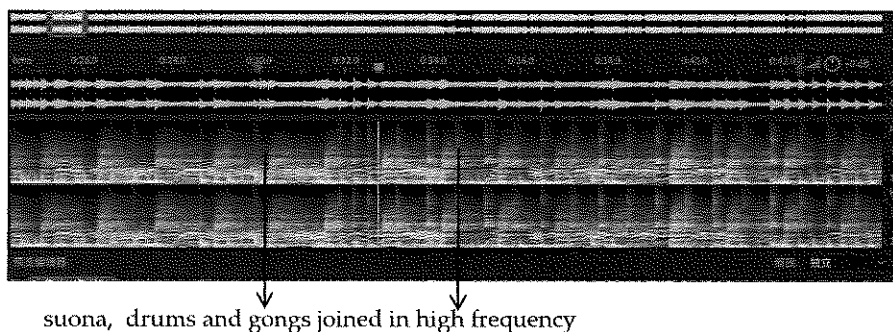


Figure 7: Spectral picture corresponding to the first part of the suona performance.

After amplifying the timbre frequency of the first part, you will find that, excluding the sounds that may be produced in the environment, the most obvious suona sound corresponds to a resonance peak at about 4 kHz, and the multiple obvious columnar frequencies in the middle are the percussion of gongs and drums musical instrument. From the melody line, it can be seen that the performance of the suona has continuity, and the performance of gongs and drums also shows the law of slow at the beginning and fast at the end.

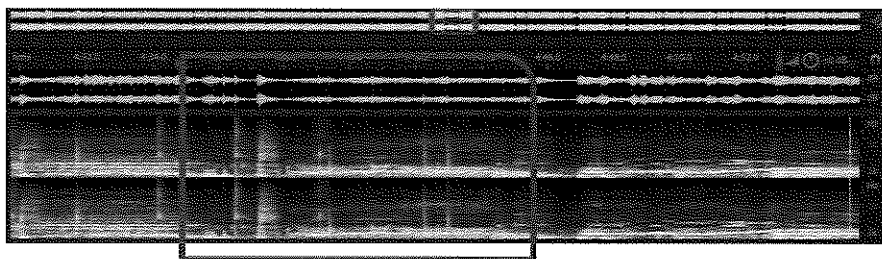


Figure 8: Spectrum diagram of transition between suona and banhu.

As shown in Figure 6, at the 4 minute and 43 second part of the musical instrument, the position marked in red is where the musician replaced the suona with a banhu, during which time Xuan began to chant scriptures. In this part, the beating frequency of gongs and drums slows down until it stops, and then it is mainly the singing part of banhu and Hu Gong. It can be seen from the figure that after 4 minutes and 43 seconds, the value corresponding to the brightest part (that is, the most obvious sound received) is between 1-2 kHz and tends to be stable, and it is obviously lower than that of the suona's frequency. Afterwards, the banhu performance was performed simultaneously with the vocal singing. It can be seen in the frequency spectrum that the frequencies of the two are highly consistent, and the audio experience is also relatively harmonious and stable.

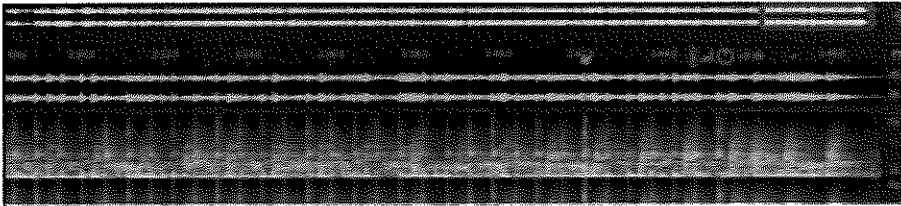


Figure 9: Corresponding spectrogram of the second suona performance.

At the end of the ceremony, the musicians replaced the banhu with suona. As shown in Figure 7, the suona resonance peak is mainly concentrated around 5 kHz, and even tends to exceed 5 kHz, so the sound energy of the whole segment is obviously stronger than the first two parts (the suona at the beginning and the banhu played in the middle).

Although the musical instrument suona is used in the opening and ending parts, there are certain differences in the visual presentation of the spectrum between the two. The author believes that this is closely related to the repertoire played by the musicians. For example, at the beginning, the piece played by the musicians was 'Willow Rocking Gold'. This piece is a traditional Chinese instrumental music card, which is widely used in Chinese folk opera music and wind and percussion music. In opera music, it is often used for cleaning, welcoming guests, for scenes such as viewing flowers and drinking alcohol, it is reasonable to use such repertoire as the opening of Daoist ceremonies, which is more in line with the background of the behavior of Xuan Gong going to the altar. The piece played at the end is *Little Opening the Door*. In Peking opera music, this piece is mainly used for the scenes of emperors and concubines coming to the court, driving, changing

clothes, or do their cleaning. It can also be used for changing scenes in various dramas and in plays as a soundtrack for character action performances.⁹ When the musicians are playing, in conjunction with the actions of Huan thanking the Deities and leaving the altar, the performance of the song tends to convey the instruction; the ceremony has been successfully completed, and the host's wish has been conveyed to the upper world in terms of auditory effect.

FUNCTIONAL ANALYSIS OF MUSICAL INSTRUMENT TIMBRE

The functional analysis of musical instrument timbre is mainly based on the theory of 'institutional sound attributes in rituals' put forward by Xiao Mei. The Daoist ritual discussed here has a fixed shape, and the insiders perform it through some kind of agreement and common knowledge, so it can be understood that the ritual has a certain institutional nature. Xiao Mei pointed out that the connotation of the ceremony can only be expressed in a perceivable system through the sound and must have been fixed in the abstraction of experience (ritual programming) in a perceivable form before it can be embodied, that is because of its 'regularity'. Repetitive behaviors in a predictable manner have been internalized as cultural patterns, perceived and shared by their cultural and social groups. They form a unique institutionality in the performance structure and sound properties of rituals, thus, 'the perceived sound can only be 'known to a government''.¹⁰ Therefore, the functional discussion of the timbre of musical instruments in this ceremony should still focus on 'listening', and discuss its functionality by combining various sound factors in the ceremony.

The sound of musical instruments runs through the entire ceremony process. The ceremony starts with the sound of gongs and drums, and then the sound of the suona comes out. Accompanied by Xuan, he plays 'Willow Rocking Gold'. Under this hide of Xuan, the transformation of musical instruments begins. The conversion is accompanied by the accompaniment of gongs and drums and the singing of 'Gong Gong'. After that, the banhu joins the accompaniment by playing and

⁹ Wang Xiuting and Yang Yuqin (2015) Tracing and Innovation of Peking Opera Instrumental Music Qupai [Xiaokaimen]. *Art of Chinese Opera*, .n.p.

¹⁰ Xiao Mei (2013). Institutional Sound Attributes in Rituals. *National Art*, 32-43.

singing the melody. With the end of 'Gong Gong' singing, the banhu stops playing, and the accompaniment of gongs and drums continues. The melody instrument musicians take a short break and start to switch instruments, and after a short break, enter the last section of suona playing, at this time the speed of suona playing is significantly faster than in the first section.

The mutual cooperation between musical instruments runs through the entire ritual process. When the instrument sounds, the ceremony begins, and when the instrument sounds, the ceremony ends. It can be seen that the sound of the musical instrument has the functional nature of connecting the entire ritual activity. In the process of Xuan's appearance, he communicated with the musicians through some coded language and then transitioned to the banhu, an instrument suitable for accompaniment to the singing section, which demonstrated the functionality of the melody instrument serving Xuan. For insiders involved in Daoist ceremonies, the use of musical instruments in rituals has become a normative appearance. The suona, as a traditional Chinese musical instrument, is widely used in folk weddings, funerals, operas and other occasions because of its grand volume and expressive power to exaggerate. In religious occasions such as Daoist ceremonies, the use of the suona undoubtedly corresponds to the folk atmosphere. The 'for the folk-custom atmosphere' is that the organizers, hostesses, and other participants of the ceremony are all 'humans', and the objects of the ceremony they face are deities or ancestors' spirits, Therefore, choosing this kind of music with local folk elements in the opening and ending parts is more in line with the needs of those 'people' at the moment.

In the middle part of the 'Entering the Table' ceremony, the banhu played by the musicians, the tune is consistent with the melody of the scriptures chanted by Hu, and the name of the melody is *The Hornets Come Out of the Cave*. This song is a traditional piece of the Zhengyi School, which belongs to Gaoqiang, that is, praising the merits and mana of the ancestors or Deities. It is often used in the 'Entering the Table' ceremony of Daoist rituals. This flow became a standard, and the speed is about 50-70 beats per minute.¹¹ In this part, the banhu playing is used to match the vocal singing, the main reason is that the

¹¹ Xuan Gong, Chen Xianhe, and Zhong Wei Cheng (2021). Interview on 12 January.

banhu, as a string instrument, and it is more suitable for the human voice in terms of timbre.

Using instruments for a vocal accompaniment is very common in traditional Chinese music, such as the jinghu in the Peking Opera, the banhu in the Qin Opera, the yuehu in the Yue Opera, the zhuihu in Henan Zhuizi, and so on. The string instruments rely on the vibration of the strings, which is convenient for fingers to slide when playing, and can even imitate the speech of characters. Moreover, the volume of the banhu is relatively big, and the timbre is highly recognizable. The sound is most easily captured by the human ear, especially in such relatively spacious ceremonial places.

The physical structure and timbre characteristics of the instruments themselves determine their function in rituals. As stated by Cao Benye and Xu Hongtu:

“...music in the ceremony, in addition to the chants accompanied by rhymes. Daoists performed various magical near-dance movements when performing dharma performances in the altar, such as "drawing symbols", "chanting mantras", "stepping on stairs", "Stepping on Bagua", "Running in Five Directions", ... are all surrounded by instrumental music. Taking rituals as an overall performing arts structure, instrumental music together with chanting scriptures, pinching fingers and chanting mantras form a comprehensive large-scale religious performing arts genre. Instrumental music is an important component that provides continuity and wholeness between (and within) the various ritual segments. The instrumental music interspersed between the various ceremonial links, or called "transitions", on the one hand functions to divide the various ceremonial links, and on the other hand fills the gaps between the ceremonial links with sound, so that the ceremony can be contained in the sound environment from the beginning to the end.¹²

To sum up, so called melody instruments play an important role in the Zhengyipai blessing ceremony. The melodic instrument runs through the whole ceremony process in cooperation of gongs and drums. The musicians promote the progress of the ceremony through cooperation with Gong Xi. From the perspective of sound, the three parts displayed by the melody instrument during the ceremony formed different functional characteristics: in the first part, the *Willow Rocking Gold* played by the suona appeared at a moderate speed, which opened the prelude to the ceremony, and because of the suona it is called the unique sound

¹² Cao Benye and Xu Hongtu (2000). *Research on Daoist Music of Wenzhou Pingyang Dongyue Temple*. Taipei: Xinwenfeng, 458.

characteristics that make the ceremony the centre of the field; the second part is singing to the public accompanied by the banhu. The emotion is more prominent; in the third part, the instrument is switched to suona again. At this time, the suona performance is obviously faster than the first part, reflecting the emotional characteristics of joy, which is closely related to the successful completion of 'Jing Biao'¹³. It can be seen that in Zhengyipai's blessing ceremony, the consideration of the timbre characteristics of musical instruments first serves the process of the ceremony, and then selects repertoires to perform according to the emotions in the field and the timbre characteristics of the instruments themselves at different stages of the ceremony. This specific timbre makes that the instrumental music arrangement has been tested many times, and it seems to have formed a kind of attribute identification of the instrumental timbre of an insider.¹⁴

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¹³ Another name for 'Entering the Table'.

¹⁴ On the identification of timbre attributes: The author believes that national musical instruments have original timbres at the beginning of their birth and their timbres have been accepted by the people, who are always able to recognize them.

Xuan Gong, Chen Xianhe, and Zhong Wei Cheng (2021). Interview on 12 January.

Xiao Ridong and Zhong Wei Cheng (2021). Interview in numerous days.

Zhou Chongying and Zhong Wei Cheng (2021). Interview in numerous days.

Zhuang Qianjun and Zhong Wei Cheng (2021). Interview in numerous days.

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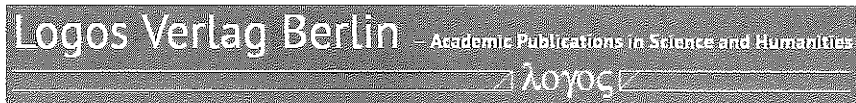
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