

From Bamboo to Metal. The relationship between bamboo instruments and gong ensembles in the Central Highlands of Vietnam

VINCENZO DELLA RATTA

Abstract

This article examines the relationship between bamboo musical instruments and gong ensembles in the Central Highlands of Vietnam (Tây Nguyên), mainly through the analysis of the *ding năm* mouth organ and the *ting ning* (or *gông*) tube zither, two bamboo instruments that my consultants claimed to be the originators of the musical approach of the *cing* and *cing arap* gong ensembles of the Austronesian language speaking Ede and Jarai ethnic groups. In the concluding remarks I make some additional reflections on gongs and their introduction in the Central Highlands of Vietnam.

Dal bambù al metallo: il rapporto tra strumenti di bambù ed ensemble di gong negli Altipiani Centrali del Vietnam. Questo articolo esamina le relazioni esistenti tra gli strumenti musicali di bambù e gli ensemble di gong negli Altipiani Centrali del Vietnam (Tây Nguyên), principalmente attraverso l'analisi dell'organo a bocca *ding năm* e della cetra tubolare *ting ning* (chiamata anche *gông*), due strumenti di bambù che i miei informatori consideravano all'origine dell'approccio musicale degli ensemble di gong *cing* e *cing arap* dei gruppi etnici parlanti lingua austronesiana Ede e Jarai. L'articolo si conclude con alcune considerazioni generali sui gong e sulla loro introduzione negli Altipiani Centrali del Vietnam.

Introduction

According to a popular Vietnamese saying, no one has really been to the Central Highlands (Tây Nguyên; Fig. 1)¹ if they have not heard the local gong music. In fact, gong ensembles are a prominent feature of this region (Trần Văn Khê and Nguyễn Thuyết Phong 2001: 593), and are exceptional within the *gong-chime culture* of Southeast Asia (Hood 1980a), because they consist of both bossed and flat gongs. The Central Highlands of Vietnam is inhabited by about twenty indigenous ethnic groups, collectively known as the *Montagnards*,² whose languages belong to the Austroasiatic and the Austronesian families (Guérin et al. 2003: 15-17; Hickey 1982: 5), and the reputation of this region has been further enhanced by the inclusion of their gong culture in the UNESCO's Intangible Cultural Heritage of Humanity list (2008).

However, this attractive saying belies a rather problematic situation. Like the rest of the country, the Tây Nguyên region has faced many traumatic events in the last century and a half, including the establishment of colonial rule, followed by a long period of war (Guérin et al. 2003; Salemink 2003). In the post-unification period, the Central Highlands acquired the status of “new economic zones” (*vùng kinh tế mới*), attracting huge numbers of people from other parts of the country (mainly belonging to the ethnic Vietnamese Kinh group), and this drastically transformed the entire region, socially as well as culturally (Evans 1992; Hardy 2003: 55; Salemink 2012: 130-131).

In 1986, the national policy of *đổi mới* (“renewal”) introduced a free market economy, which increased agricultural production and the exploitation of resources in the Tây Nguyên region. Spontaneous arrivals in the Central Highlands swelled the population increase that had already been planned by the state and various issues relating to land use and religious freedom further affected the lives of the Montagnards (Guérin et al. 2003: 83-313; Logan 2010: 192-205; UNHCR 2002: 7-26).

It is largely for these reasons that access to the Central Highlands is still restricted to foreigners, and visits are limited to a few selected villages or areas. The inclusion of the “Space of gong culture” of the Central Highlands of Vietnam in the UNESCO Intangible Cultural Heritage of Humanity list has not substantially changed this situation, and it is still very difficult for outsiders – whether they are scholars, music enthusiasts or tourists – to witness the rituals in which gong music is played.

For this reason, on my first field trip to the Central Highlands in 2007, I was unable to listen to a single traditional Jarai gong ensemble. I was well aware of the saying that I have mentioned at the beginning of this article and I told my Jarai friends about my

¹ The Central Highlands of Vietnam is an upland region bordering south-eastern Laos and north-eastern Cambodia (Michaud 2006: 59). It includes the provinces of Kon Tum, Gia Lai, Đắk Lắk, Đắk Nông, and Lâm Đồng (Tô Ngọc Thanh and Nguyễn Chí Bên 2006: 95).

² The indigenous ethnic groups of the Central Highlands of Vietnam were once known as the *Montagnards* (meaning “mountain people” in French). This term replaced the Vietnamese word *Mọi* (“savages” or “barbarians”). Today the Vietnamese use the term *Thượng*, which can be translated as “mountain people” (Hickey 1982: 3; Lưu Hùng and Nguyễn Văn Kự 2002: 39; Michaud 2006: 169-171).



FIGURE 1. The Central Highlands of Vietnam – the Tây Nguyên region. It includes the provinces of Kon Tum, Gia Lai, Đắk Lắk, Đắk Nông, and Lâm Đồng.

disappointment and frustration. But then, during an informal meeting at my hotel in Pleiku, a Jari friend, Siu Phu, told me that the tube zither, known as *gông* among the southern Jari subgroups but locally called *ting ning*, which our mutual friend, the musician Siu Khôi, was playing for us at the time, was in some way equivalent to a *chống arap* gong ensemble. I must have looked a bit confused, so on another occasion Siu Phu tried to explain what he meant. He started to play on an electronic keyboard and said: “You hear this? This is a *chống arap* ensemble!”

Unfortunately I was still unable to understand. I thought that these comparisons between a gong ensemble, the *ting ning* tube zither and above all a piano keyboard, were rather forced, and I suspected that Siu Phu was just making a kind attempt to relieve my disappointment at not being able to listen to a *chống arap* gong ensemble. It was only much later, after over ten years of intermittent fieldwork in the Tây Nguyên region, that I understood what Siu Phu had wanted to tell me. He meant that the approach to playing the *ting ning*, as well as the particular scale of this instrument and part of its repertoire, had been transferred to the *chống arap* gong ensemble. By comparing a traditional bamboo instrument with a keyboard, Siu Phu had been trying to explain that the musical scales, as well as other features, of virtually any gong ensemble can be played on the latter, with its far wider chromatic range than that of the *ting ning* (which is nonetheless sufficient for reproducing the music of a *chống arap* ensemble).

In this article I aim to analyse the relationship between instruments made of bamboo and metal in the Central Highlands of Vietnam, above all those traditionally played by two indigenous ethnic groups, the Jarai and the Ede. The Jarai are the largest ethnic group among the indigenous peoples of the Central Highlands of Vietnam. Most of the lands that they inhabit are in the province of Gia Lai, the southwestern part of the province of Kon Tum, and the north of the Đắk Lắk province, as well as in the eastern part of the Cambodian province of Ratanakiri (Hickey 1982: 7-8; Lưu Hùng 2006: 11; Lưu Hùng and Nguyễn Văn Kỳ 2002: 49). The Ede (formerly known as the Rhadé) live mostly in the central-northern part of the province of Đắk Lắk and to a lesser extent in the mountainous areas of the provinces of Khánh Hòa, Phú Yên, Đắk Nông and Gia Lai (Hauteclouque-Howe 1987: 13-26; Vũ Quốc Khánh 2010: 15). The Ede and Jarai languages, both of which belong to the Austronesian linguistic family, share many traits and are mutually intelligible to some extent (Thurgood 1999: 45-46). These ethnic groups are very closely related in many ways, and the traditions of the southern Jarai subgroups are interconnected with those of the Ede, who live alongside them (Hickey 1982: 7-9; Maurice 2002: 303).

In order to explain the relationship between bamboo and metal instruments in the Central Highlands of Vietnam, I will mainly concentrate on the *dìng năm* mouth organ and the *ting ning* (or *gông*) tube zither, two bamboo instruments that my consultants claimed to be the originators of the musical approach of the *chĩng* and *chĩng arap* gong ensembles of the Ede and Jarai ethnic groups. I obtained the information in this article mostly from Rôchom Tih, a Jarai man in his fifties, and Y Bhiông Niê (or Ama H'Loan, as he is more commonly called), an Ede man in his eighties. They are both renowned traditional musicians, who have performed in Vietnam and abroad. In the Central Highlands of Vietnam the origin of gong ensembles is often explained by associating them with pre-existing bamboo musical instruments – as indicated by my conversations with Siu Phu – and this is corroborated by several legends or stories.³

³ Many stories collected in a book published by the diocese of Kontum (Mission Jrai-Bahnar 2009) relate the origin of the gongs to the sounds of animals and/or nature in first place, and then to bamboo instruments. According to one of them, a man named Giot «avait vécu jusqu'à 98 ans [...]. Un jour il s'en allait à son champs et entendait le chant d'un oiseau. C'était un pique-ver. Il s'habitua au rythme du chant de l'oiseau. Un jour, à la saison sèche, il entendait le bruit du vent mêlé aux éclatements des bambous. Il coupait un tronçon de bambou que l'oiseau avait piqué. Il le laissa tomber et il remarqua qu'il donna un son. Et chaque tronçon de bambou donna un son différent. (...) Il fabriqua sept tronçons de bambou, avec des sons différents suivant la longueur. On l'appelait *chĩng klong*. Pour utiliser le *chĩng klong*, il faut autant de joueurs que de tronçon. Un jour qu'il était tout seul aux champs, il se demanda comment il pouvait jouer à lui seul tous les sept tronçons de bambou ? Alors il prit la liane *jrung king* pour les attacher ensemble. Ainsi il a obtenu un instrument de musique qui s'appelait *torung*. Ayant fabriqué le *chĩng klong* et le *torung*, il pensait toujours comment faire pour avoir les gongs (*chĩng*). Un jour il remarqua la lame du couteau depuis longtemps utilisé par ses ancêtres. Alors les frères sont allés ensemble prendre du cuivre pour fabriquer un grand, un moyen et un petit gong». (Mission Jrai-Bahnar 2009: 11-13). I will describe the *chĩng klong* (*chĩng kôk*) and the *torung* (*torung*) later on in the article. Another story relates that «une nuit il y a Monsieur Hrit allant à la chasse des grenouilles. Il voit une grenouille en train de coasser. (...) Le monsieur a l'idée d'imiter le coassement de la grenouille. Il tronçonne trois tuyaux de bambou, les sectionne en un *chẽng klong* qui donne des sons semblables au coassement de la grenouille. Après

In the first part of this article I analyse the main features of the *čing* and *čing arap* gong ensembles, describing their composition, the way they are played, and their musical scales. I then consider the bamboo instruments that are claimed to have been their precursors – the *ding nām* mouth organ for the *čing* ensemble, and the *ting ning* tube zither for the *čing arap*. I discuss the origin of gongs in general, as well as those of the *čing* and *čing arap* gong ensembles, mainly on the basis of information provided by Nay Phai, a Jarai man (now in his sixties) who is one of the most renowned gong experts and tuners in the Tây Nguyên region. In the concluding remarks I make some additional reflections on the instruments played by of the Ede and the Jarai and the associated musical scales.

The *čing* and the *čing arap* gong ensembles

Among the indigenous ethnic groups of the Central Highlands of Vietnam gong ensembles are played in all the ritual contexts spread throughout the life cycle of the individual, from the cradle to the grave (Alpers *et al.* 2007: 17). These ensembles mostly consist of a combination of bossed and flat gongs and can be either processional or stationary (Tô Ngọc Thanh and Nguyễn Chí Bền 2006: 124-126). The processional ensemble marches in an anticlockwise direction while playing, whereas the members of stationary ensembles either sit on a bench when they are playing inside a house or, in the case of open-air rituals, on a specially built structure or on the ground. Each member of a gong ensemble – usually all men, in accordance with the local custom⁴ – generally holds and plays only one instrument (either a gong, the drum, and a pair of cymbals, if the latter are included in the ensemble), and each player coordinates his playing with the others, to create an interlocking form of polyphony (Bùi Trọng Hiền 2005: 12).

quoi, il prend de la cire d'abeille pour en faire des *cheng*, mais ils ne résonnent pas. Chom Bom vient chez Mr. Hrit et lui demande: "Que fais-tu, Hrit? – Je fabrique des *cheng klong* – Ah, oui? On s'y met ensemble? Oui". Et Mr Chom Bom ajoute: "J'ai du bronze noir à la maison. On peut en faire des *cheng* merveilleux. C'est comme si tu utilises de la cire. – Mais oui, on va prendre ça tout de suite!" (Mission Jrai-Bahnar 2009: 9-10). According to another story: «Avant les gongs, dans les festivals, les funérailles, les sacrifices, les flirts, ou pour s'annoncer les nouvelles, on n'utilisait que les *chok kram mo* (gongs en bambou), à la place des tambours (qui n'existaient pas encore). *Chrek kram, torung, klong, lulu, ding jong, pot pong, 'lal* [Bahnar bamboo instruments also known among the Jarai, editor's note] sont des tuyaux de bambou avec des dimensions différentes. Ils jouent tout cela suivant les chants qu'ils composent (...). Quand ils ont obtenu des sons des pierres, ils inventent des instruments de musique comme les *kiku, khing, khung*. Ils prennent les tuyaux de bambou qu'ils taillent en diverses longueurs imitant les sons des gongs en pierre et ils emploient la force des eaux pour tirer sur des tiges qui frappent sur les tuyaux en donnant des harmonies préparées d'avance très agréables à écouter. Il paraît que ces instruments disparaissent peu à peu. En même temps, la population se multiplie. De l'extérieur, comme au Cambodge et au Laos, on apprend que les Bahnars aiment beaucoup la musique, alors ils cherchent à importer pour échanger aux Bahnars leurs instruments de musique comme des *ching cheng, kreng neng, kreng greo*, des jarres précieuses. L'échange se multiplie dans tous les Hauts Plateaux. Voilà pourquoi le peuple Bahnar a tant d'estime pour les *ching cheng* et les jarres. Et ceci explique comment les Bahnars ont eu les gongs et d'autres instruments de musique» (Mission Jrai-Bahnar 2009: 11).

⁴ Among almost all the Montagnards, only the men are traditionally allowed to play gongs, with the exception of the Ma ethnic group, where there are both male and female ensembles, and the Bih subgroup of the Ede, where only women are allowed to play the gongs (Tô Ngọc Thanh and Nguyễn Chí Bền 2006: 104, 125).



FIGURE 2. A *čing* gong ensemble made ready outdoors, in preparation for a funerary ritual (photo by the author).

The *čing* (which simply means “gongs” or “gong ensemble”) is a stationary ensemble played by the Ede in all the ritual contexts that require gong music (Fig. 2). It is very similar to some of the gong ensembles of the neighbouring southern Jarai subgroups, such as the *čing mōnum*, which is virtually identical (Đào Huy Quyền 1998: 291-293; Tô Đông Hải 2002: 181-185), the *čing knah ring* (or *čing tonah ring*), which has some slight differences from the Ede *čing* ensemble, and the *čing nam* and *čing kodor*, which have only five *knah* flat gongs instead of six (Đào Huy Quyền 1998: 301-307). In order to explain how it functions I will describe an ensemble that I examined in the village of Buôn Ako Dhông, in the outskirts of Buôn Ma Thuột, where Ama H’Loan lives.⁵

The *čing* ensemble is divided into two different sections, one consisting of bossed gongs, called *čing kdor*, and the other consisting of flat gongs, called *čing knah*. In the *čing kdor* there are three bossed gongs – called *ana*, *mdũ*, and *mung* (or *mông*) – while the *čing knah* contains six flat gongs – called *knah phũn* (*knah di* or *knah*), *knah h’liang* (or *h’liang*), *knah khôk* (or *khôk*), *hluê khôk prông* (or *hluê khôk*), *hluê h’liang* and *hluê khôk diet*. The *čing* ensemble is complemented by a large flat gong, *čhar* (*čar* or *sar*), and a big double-headed barrel drum, called *h’gor* (Fig. 3).⁶

⁵ Buôn Ako Dhông is in the ward Tân Lợi, in the city of Buôn Ma Thuột (province of Đắk Lắk).

⁶ The names of the different gongs vary according to the area and the dialect. For the sake of simplicity, I have used the names of the gongs provided by Kersalé (2000), as in fig. 3, and I have put in brackets the names revealed by my field research in the village of Buôn Ako Dhông.

Disposition des gongs dans la "maison longue"

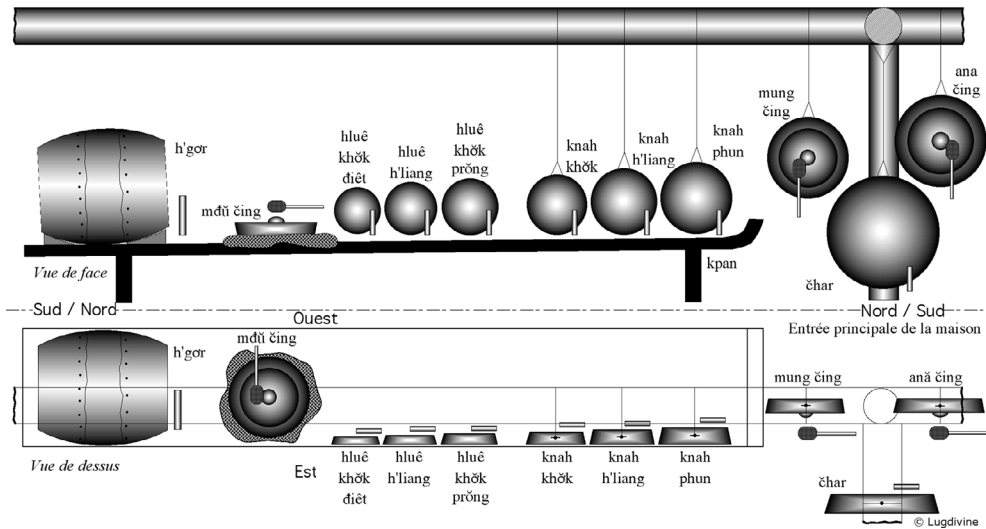


FIGURE 3. How the *čing* gong ensemble is set up inside a house (Kersalé 2000: 16-17).

The largest gongs hang in a row from the beam (*čyong*) on the ceiling of the longhouse above a bench (*kban* or *kpan*), where the players sit (Hauteclocque-Howe 1987: 124; Kersalé 2000: 11). The smallest gongs are usually not suspended in this way, and are held without any additional support, as is also the case for the *mdü*, which is not played vertically like the other larger gongs, but horizontally. The *ana*, *mung* and *čhar* hang to one side and their players are not seated on the bench. When rituals are held in the open air, the players sit on simple seats or on the ground and the gongs hang from a special wooden or bamboo frame.

The order of the gongs above the bench is always the same. At one end of the line the *mdü* bossed gong is placed horizontally on the player's lap, so that its sound can be dampened; then the vertical flat gongs are arranged in order, from the smallest to the largest. The two gongs at either end of the line (the *mdü* bossed gong and the *kna phün* flat gong) mark the beat and the off-beat (or vice versa), while the others play what can be considered as the melodic part, despite its markedly rhythmic character. The gongs of the melodic section are divided into two groups, the *khök* group (*kna khök*, *hlué khök pröng*, *hlué khök diét*) and the *h'liang* group (*kna h'liang*, *hlué h'liang*). Each group plays a different rhythmic-melodic pattern, with the gongs called *hlué* generally following what can be defined as the "leaders" of the group they belong to. This practise is made clear by the term *hlué* (meaning "to follow") given to some of the gongs, to which is added the name of the gong which has to be followed, as Ama H'Loan explained to me. Thus *hlué khök pröng* and *hlué khök diét* both reproduce the pattern of *kna khök*, while *hlué*

h'liang imitates the pattern of *knah h'liang*. The melodies of both groups interact to create a complex interlocking polyphonic effect with a distinctively rhythmic character.

Nowadays the remaining gongs hanging at one end of the bench – *ana* and *char*, which are both tuned to the same note, and *mung*, which is an octave higher than *ana* and *char*, and in unison with *knah phũn* (see Tô Đông Hải 2002: 293) – are sometimes omitted from a traditional ensemble, as was the case for the one I saw at Buôn Ako Dông. I have been informed that these gongs have a less important musical role, since *ana* merely reproduces the pattern of *knah phũn*, and *char* either that of the *h'liang* group (Kersalé 2000: 12) or that of *knah phũn* (Tô Đông Hải 2002: 221). According to some of my consultants, *ana* and *mung* both play the pattern of *knah phũn*, and *char* only has an auxiliary role, such as introducing the start of a piece (Rỡ Ô Nhung and Nay Phai, personal communication, April 2022). Moreover, as these are some of the most valuable gongs (above all *char*), they are usually the first to be sold, in case of financial need. My local interlocutors also told me that they are frequently stolen. In addition, the *h'gor* drum can be omitted, especially in open-air rituals.

The musical scale of the *cing*, like that of the *cing mớnum*, is an anhemitonic (without semitones) hexatonic scale (Fig. 4). The gongs that generate this scale are all at intervals of a perfect fifth from each other. In fact, the bossed gongs, as well as *char*, have intervals of a perfect fifth and a fourth (which can of course be considered as a descending fifth). Also the flat gongs are at intervals of a perfect fifth: the *knah h'liang* and *bluê h'liang* (*hluai knah hri*) are a fifth apart, while the gongs of the *khòk* group constitute a major triad, with *knah khòk* as the fundamental, *bluê khòk prông* (*hluai knah tuk*) at a major third

Hàng âm dàn chiêng Mớnum

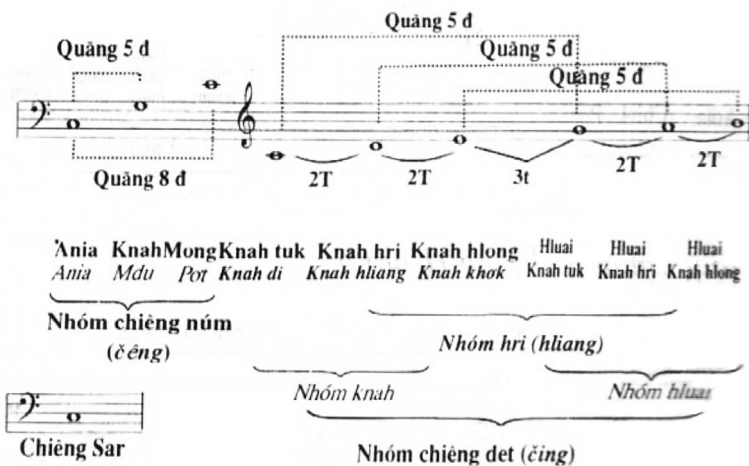


FIGURE 4. The conformation and musical scale of the *cing mớnum* gong ensemble (Tô Đông Hải 2002: 293).

from it – but a fifth from *knah phũn* (*knah dĩ*) which is played in combination with the *mdũ* bossed gong) –, and *hluê khôk diet* (*hluai knah blong*) at a distance of a perfect fifth.

Among the Jarai, the *čĩng arap* is a processional ensemble that is played outdoors, mostly in funerary rituals, with each member of the ensemble holding and playing a single instrument: a bossed or flat gong, the medium-size double-headed cylindrical drum, and one pair of small cymbals. Although its name (commonly used among the southern Jarai subgroups as well as in the literature) explicitly refers to the Jarai Arap subgroup (*čĩng arap* literally means “gongs [of the] Arap”), it must be pointed out that the northern Jarai subgroups, including the Arap, either refer to it as *čĩng cẽng* (“flat and bossed gongs”) – a term that probably derives from the Bahnar language – or as *čĩng ỏi tha* (“gong ensemble of the elders”). Although some Vietnamese ethnomusicologists – such as Tô Đông Hải (2002), Tô Ngọc Thanh and Nguyễn Chí Bền (2006), and Đào Huy Quyền (2010) – claim that the *čĩng arap* ensemble has only one fixed set of gongs and only one musical scale, most of my local consultants defined several variations on the basic set identified by Vietnamese ethnomusicologists as a *čĩng arap* ensemble.⁷

The musicians play marching in a circle, always in a counter-clockwise direction. The order of the instruments is fixed, with the drum marking the beat at the head of the procession, followed by the larger bossed gongs with the lowest pitches and ending in the flat gongs with the highest pitches. The cymbals (usually just one pair) generally take up the rear, to ensure that all the musicians hear the beat, which they too mark out (Fig. 5).

The *čĩng arap* ensemble is divided into two distinct sections, corresponding to the type of gong, with the melody played by the flat gongs (*čĩng*), and the accompaniment entrusted to the bossed gongs (*cẽng*). As is the case for the *čĩng* ensemble, the distinction between rhythmic and melodic sections creates a stratified polyphony (Hood 1993). However, unlike the music of the ensemble of the Ede, in which rhythmic qualities prevail, the *čĩng arap* is more melodious.

In order to explain the structure of a *čĩng arap*, I will examine the ensemble of the village of Plei Rbai, in the southern lands inhabited by the Jarai (Fig. 6).⁸ The basic element of a *čĩng arap* ensemble is the rhythmic section of bossed gongs, which essentially consists of three gongs (locally called *ania*, *čĩ* and *bêt*). The first of these (*ania*) is the only gong in the rhythm section that is never duplicated, while the other two (*čĩ* and *bêt*) may be doubled by other gongs. This does not effectively change the number of parts, which always amounts to three since, although these doublings might not necessarily reproduce the actual notes played by the leading gongs, they closely adhere to their basic rhythmic-melodic pattern. The ensemble of Plei Rbai has two doublings of *bêt*, a perfect fifth and an octave above it (*bêt lao* and *bêt lao net*).

⁷ Tô Đông Hải (2002: 295), Tô Ngọc Thanh and Nguyễn Chí Bền (2006: 109-110), and Đào Huy Quyền (2010: 65-66) consider the *čĩng arap* ensemble to consist of only three bossed gongs and eight flat gongs, whereas (like most of my consultants) I am more inclined to consider several small variations to this gong set as falling within the general category of the *čĩng arap*.

⁸ Plei Rbai is in the commune of Ia Piar, district of Phú Thiện (province of Gia Lai).



FIGURE 5. A *ċng arap* ensemble during a funerary ritual (photo by the author).

The melodic section of the Plei Rbai *ċng arap* ensemble consists of eight flat gongs, although in other parts of the Jarai lands it can have seven or nine. According to my consultants, like those of the *ċng* ensemble of the Ede, these gongs can be divided into two groups, not considering the first gong (*dĩng*), which is seen as standing apart (although in some local areas it is included in the first group). The first group (which I will call the “leading group”) consists of the second, third and fourth gongs (*hloh prong*, *pkah prong*, *geo*), and the second group (the “subordinate group”) consists of the remaining gongs (*neã hloh*, *pkah anet*, *geo anet*, *hloh anet*). The gongs of the leading group usually play the melody, while those of the subordinate group generally follow them (by reproducing their rhythmic-melodic pattern), creating a kind of counterpoint (Fig. 6). The gongs of the subordinate group follow the leading gongs, as revealed by their names.

The hemitonic pentatonic scale with two semitones (i.e.: B C E F G; see Fig. 6) is generally referred to as typical of the *ċng arap* and of Jarai music in general. Trần Quang Hải and Hugo Zemp (1997: 105) have defined this scale as “characteristic” of Jarai music, while also hinting at a more complex situation. In fact, in some local areas this scale is supplemented by additional notes that enrich it, without substantially altering its basic structure (as in Fig. 6). Some Vietnamese ethnomusicologists – such as Tô Đông Hải (2002: 294), Tô Ngọc Thanh and Nguyễn Chí Bên (2006: 129), and Đào Huy Quyền (2010: 68) – have identified a standard musical scale for the *ċng arap* ensemble featuring a B flat in the leading group, coexisting with a B natural in the subordinate group, as

FROM BAMBOO TO METAL

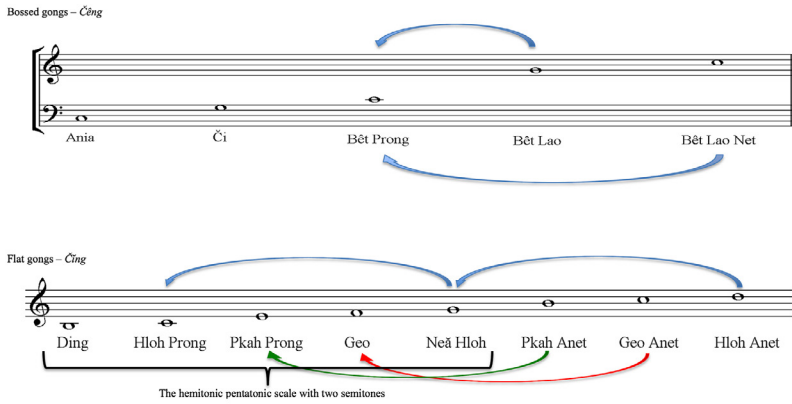


FIGURE 6. The conformation and musical scale of the *cing arap* ensemble of the village of Plei Rbai (elaborated by the author).

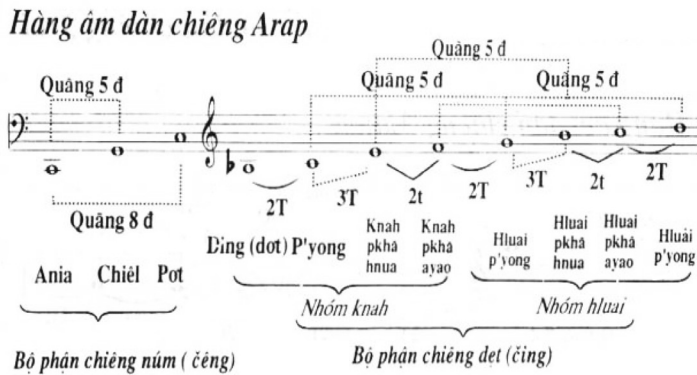


FIGURE 7. The musical scale of the *cing arap* (Tô Đông Hải 2002: 294).

well as a D natural in the upper register (Fig. 7). My field research revealed some slightly differing musical scales of *cing arap* ensembles, which indicates that my local consultants had a rather broad conception of this gong ensemble, embracing several variations. For example, the scale of the ensemble of the village of Plei Rbai (Fig. 6) diverges from the scale shown in Fig. 7, in that it does not have a B flat in addition to a natural B. However, apart from this small difference, the two scales are identical.

As is the case for the *cing* ensemble, intervals of a fifth prevail among the gongs of the *cing arap*: the bossed gongs have intervals of a perfect fifth and a fourth, and the flat gongs of the “subordinate group” are a perfect fifth from the gongs of the “leading group”.

Bamboo instruments and the gong ensembles of the Ede and the Jarai

As Ama H'Loan told me, the Ede claim to derive their approach to gong ensemble playing, as well as the associated musical scale and part of the repertoire, from a free-reed mouth organ called the *ding nãm* ("six bamboo tubes") (Fig. 8). In fact, this instrument – also played by the southern Jarai subgroups (Dournes 1965: 234-235), but unknown in the northern Jarai lands – constitutes the model and precursor for the *čing* gong ensemble of the Ede (Della Ratta 2020: 152-154), as well as for the closely-related gong ensembles of the southern Jarai (the *čing moñum*, the *čing knah ring* or *čing tonah ring*, the *čing nam*, and the *čing kodor*).

The *ding nãm* consists of a set of six bamboo tubes with free reeds inserted into a gourd, which correspond to the six *knah* flat gongs of the *čing* ensemble (see also Dournes 1965: 234). The *ding nãm* player alternatively closes and opens the holes of the tubes (each of which has the same name as one of the six basic gongs), in order to create a polyphony based on the combinations of two or more notes from the different tubes, akin to that of the gongs that I have described. The relationships between the notes are mirrored by those of the *čing* ensemble, which are also divided into two groups, with the main gongs, *khôk* and *h'liang*, being followed by the other gongs (Table 1).

The *ding nãm* mouth organ is not the only bamboo instrument to have a special relation with the *čing* gong ensemble. The Ede have an ensemble called *čing kram* ("bamboo gongs") consisting of six or seven bamboo tubes, each of which is played by a single person. The players use a beater to strike a piece of bamboo, held above a bamboo tube (to act as a resona-



FIGURE 8. A *ding nãm* mouth organ (photo by the author).

Front row		Back row	
1	Ana/Knah	4	Khôk
2	H'Liang	5	Hluê Khôk
3	Hluê H'Liang	6	Hluê Khôk Diet

TABLE 1. The various tubes of the *ding nãm*.

tor), which is held between their legs. This ensemble, also known among the southern Jarai, used to be played by children in order to practice the difficult intertwining patterns of the *čing* gong ensemble (see Dournes 1965: 221; Kersalé 2000: 13, 19). Moreover, an ensemble consisting of six stopped single end-blown flutes without finger-holes, called the *ding tüt*, is played by both the Ede and the southern Jarai subgroups, although it is becoming increasingly rare (Đào Huy Quyền 1998: 232). Kersalé (2000: 7-8) reports that this ensemble consists exclusively of women who play in funerary contexts, at the beginning of the rainy season and at a few other special events. The bamboo pipes are cut roughly into shape and then tuned by putting water into them. Each player plays a single flute by holding the end of the pipe between her thumb and index finger. The names of these flutes correspond to those of the gongs of the *čing* ensemble and the rhythmical patterns created by the players correspond, with some variations, to those of the gong ensemble (Kersalé 2000: 6). According to Dournes (1965: 231), who described its Jarai version, this ensemble – which he called *dding tøjub* (“seven tubes”) – consisted of seven or nine stopped single end-blown bamboo flutes without finger-holes, each one played by a single person. He also claimed that it imitated the music of the *čing mōnum* ensemble (the Jarai version of the *čing* ensemble of the Ede).

An analogous connection can be found among the Mnong Gar, an Austroasiatic language-speaking ethnic group of the Central Highlands, whose traditional lands are to the south of those of the Ede. Condominas (1972: 1-9) points out that the names of the pipes of their free-reed mouth organ (*mbuat*) and their ensemble of stopped single end-blown flutes without finger-holes (*cing ding*), as well as the idiochord tube zither with six strings detached from a bamboo tube (*cing boong rlaa*) correspond to those of the ensemble of six flat gongs (*cing*). Moreover, the *mbuat* mouth organ and the *cing ding* flute ensemble share the same repertoire as the *cing* gong ensemble. The *mbuat* and the *cing ding* closely correspond to the *ding nãm* and the *ding tüt* of the Ede that I have described, while the *cing boong rlaa* corresponds to the tube zither of the Jarai, which I will now analyse.

The heterochord tube zither with resonator – similar to a two-stringed fretted stick zither, known among the Jarai as the *broh*, which closely resembles the *pin pia* and similar Asian stick zithers (McGraw 2007: 116-122) – is either called *gông* (among the southern Jarai subgroups) or *ting ning* (among the northern Jarai subgroups: a term deriving from the Austroasiatic Bahnar language) (Fig. 9). Like the *ding nãm* mouth organ, this instrument reflects the structure of the *čing arap* and shares a part of its repertoire, as Rôchom Tih and a number of my consultants explained to me.



FIGURE 9. A nine-stringed *ting ning* or *gong* tube zither (photo by the author).

This tube zither consists of several metal strings attached to a bamboo cylinder, with a pumpkin resonator at its bottom end (although it sometimes has an additional resonator at the top) with tuning pegs piercing the bamboo tube at various points. Nowadays the strings are made of metal, but some scholars have put forward the hypothesis that originally they were strips of bamboo detached from the main cylinder, which would have made this instrument an idiochord tube zither (Đào Huy Quyên 1998: 272; Dournes 1965: 224; Nguyễn Thuyêt Phong 2008: 301). I have witnessed such an idiochord being played in the Central Highlands only once, in 2007, when a very old Ede man played a *cing* gong ensemble melody on it. This instrument, locally called the *gong kram* (“the bamboo *gong*”), mirrors the musical approach, the scale and partly the repertoire of the *cing* gong ensemble. However, the *gong kram* has virtually disappeared and since then I have never heard it being played again.

Rôchom Tih also believes that the *ting ning* tube zither is closely connected with two other bamboo instruments: the *cing kôk* and the *törung*. Similarly to the *cing kram* of the Ede, the *cing kôk* (literally “bamboo gongs”) replicate several of the gongs of a *cing arap* ensemble. The bamboo tubes of the *cing kôk*, each of which is played by a single person, are cut to different lengths, to give each tube its appropriate tuning, and are struck with a beater. The *törung* is a bamboo xylophone consisting of several bamboo tubes tied together with strings to form a single instrument played by one person with two beaters. The *törung* – now widely played all over Vietnam, mostly in its “modernized” diatonic version (Arana 1999: 57) – formerly reproduced the musical scale, repertoire and playing

Left hand		Right hand	
1	Böt	7	Krah Prong
2	Böt	8	Krah Ddet
3	Böt	9	Krah Ddet
4	Ding	10	Ci
5	Kêu Prong	11	Ania Hloh
6	Kêu Ddet	12	Ania Ddet
		13	Ania Ddet

TABLE 2. The various strings of the *ting ning* or *gông* tube zither according to Dournes (1965: 243). Although the instrument considered had thirteen strings, if one ignores those that are doubled, there are basically nine notes.

technique of a *cing arap* gong ensemble (see Dournes 1965: 214). According to Tih, the *törung* was made by tying together the bamboo tubes of the *cing kòk*.⁹

The old nine-stringed *ting ning* or *gông*, now quite rare, has been replaced by other models which – with the doubling of certain notes, or with extra notes, which sometimes create a diatonic scale – may exceed eighteen strings in number. As Rôchom Tih told me, the *ting ning* repertoire and musical approach are basically identical to those of the *cing arap* gong ensemble. This is also confirmed by Đào Huy Quyền (1998: 271), Dournes (1965: 227) and Nguyễn Thuyết Phong (2008: 301).

Certain combinations of the plucked strings are played homorhythmically on this tube zither, and the strings of the instrument are not arranged in ascending or descending order of pitch, but according to the way they are played together. Moreover, unlike the *ding năm* – which reproduces only the flat gongs of the *cing* ensemble of the Ede – the *ting ning* or *gông* reproduces both the accompaniment and the melody. The strings have the same names as the gongs of the *cing arap*, and there is a very close relationship between them (Table 2). In fact, each group of strings corresponds to a combination of gongs in the *cing arap* ensemble. The first group of strings on the left consists of three *böt* strings (for playing an accompaniment), followed by the *ding* (a single string for playing a melody) and the *kêu prong* and *kêu ddet* (which play a melody together). On the right are the *krah prong* and *krah ddet* (played together), the *ci* (on which the accompaniment is played), the *ania hloh* and the two *ania ddet* strings (which play a melody together).¹⁰

The way the *ting ning* tube zither mirrors a gong ensemble is also evident in the relationship between this instrument and the *cing dah dam* gong ensemble – or *cing hơnh*

⁹ According to the stories quoted in footnote 3, the *cing kòk* and the *törung*, as well as several other bamboo instruments, are the precursors of gong ensembles. Note that the terms *ding*, *kram* and *kòk* refer to various different types of bamboo.

¹⁰ Dournes (1965: 218) provides the following names for the gongs of a *cing arap* ensemble. Bossed gongs: *but-bung*, *ci*, *böt prong*, *böt krah*, *böt lao*. Flat gongs: *ding*, *ania hloh*, *kêu*, *krah*, *ania ddet*, *kêu ddet*, *krah ddet*, *ania ddet dön*.

(*hoanh*) as it is mostly known in the literature (Đào Huy Quyền 1998: 303; Tô Đông Hải 2002: 194; Tô Ngọc Thanh and Nguyễn Chí Bên 2006: 110). This relatively recent ensemble has more gongs (which create a diatonic scale), a slightly different rhythmic-melodic organization, and a monodical way of playing flat gongs. The more modern versions of the *ting ning* tube zither (with eighteen or more strings) have kept track of these innovations, making it possible to play the melodies of the *cing dah dam* gong ensemble repertoire. A similar parallelism can also be detected between another modern gong ensemble – widely played in ritual contexts among the southern Jarai subgroups – and the guitar. In fact, this new ensemble, which is known by many different names (such as *cing pel*, *cing ka tien*, *cing ding dong*, etc.), closely reflects the local way of playing the guitar.

The problem of the origins of the *cing* and *cing arap* gong ensembles

The question regarding the origin of gongs remains largely unanswered, and Sachs (1940: 240) states that “the provenance” of these instruments “is not certain”. According to this scholar gongs are mentioned for the first time in a Chinese text dating to the early 6th century AD. Their existence on the island of Java is reported in the 9th century AD, and in the following centuries they spread throughout the Malay Archipelago, as far as New Guinea (Sachs 1940: 240). Archaeological finds attest that flat gongs were in use in “Borneo, Sumatra, the Thai-Malay peninsula, with links to Hoysala in India, Vietnam and China” starting from the 10th century AD, while the presence of bossed gongs in Southeast Asia is attested to in the 13th century AD (Nicolas 2009: 62-63). Montagu (1965: 18-19) adopts Kunst’s theory (1973: 143-145) that gongs originated in ancient Greece (or were known by the Greeks), elaborated on the basis of a legend and a reference made to this instrument by Paul of Tarsus in his letters to the Corinthians. Blades (2001) noted that the ancient Romans used gongs and metal discs for acoustic signalling at a distance. Montagu (2007: 16-17) later argued that gongs originated in Central Asia, from where these instruments spread eastwards and westwards. Instead, according to Hood (1980b) gongs are direct descendants of the bronze drums of the Heger Type I (Heger 1902), which from Đông Sơn, in northern Vietnam, were diffused throughout mainland and insular Southeast Asia (Calò 2009: 45). According to this theory gongs were created on the island of Java, in an attempt to recreate the Đông Sơn bronze drums, and then spread all over Southeast Asia.

There are very few historical sources regarding the origin of the gongs of the Central Highlands of Vietnam, and the oldest description of gong ensembles in this region that I have been able to find is the early 20th century account written by Maître (1909: 128-129). The French explorer described an ensemble that is very similar to the *cing* or *cing moñum* in its modern form. Maître (1909: 130) also briefly mentions the existence, among the Jarai, of a processional ensemble consisting of flat and bossed gongs with a small drum, which would seem to be a *cing arap*.

When I asked about the origin of their gongs, many Jarai and Ede consultants said that they were acquired from Laos or Cambodia, and only recently from Vietnam (see Tô Ngọc Thanh and Nguyễn Chí Bền 2006: 103). Some ancient types of gongs (like the *čing lao*, from Laos, or the *čing kur*, from Cambodia) are explicitly associated with these countries, while the more modern gongs are made in Vietnam. It is unclear whether gongs were ever produced locally, although it is certain that metalworking was known in what is now the Tây Nguyên region (Maître 1912: 204; Tô Ngọc Thanh and Nguyễn Chí Bền 2006: 98).¹¹

The only person I have met who provided me with any more specific information regarding the history of gongs is Nay Phai, a well-known gong expert, whose family have been gong tuners for many generations. On the basis of the old stories handed down within his family, Nay Phai maintains that his grandfather's grandfather possessed some *čing arap* and *čing moñum* gong sets, which would mean that these gong ensembles already existed approximately in the early 19th century. Nay Phai also argued that various features shared by the *čing* and *čing arap* ensembles reveal their common origin. These are the presence of bossed as well as flat gongs, the tuning of the gongs at distances of a perfect fifth and/or fourth, the division of the gongs into two groups (playing the accompaniment and the melody), as well as their interlocking rhythmical patterns. In addition, several names of gongs in the *čing* ensemble closely correspond to those of the *čing arap*.

Nay Phai also claimed that the common origin of the *čing* and *čing arap* ensembles can be seen in their section of three bossed gongs tuned at intervals of a perfect fifth and fourth (i.e.: C G C). These three gongs constitute a complete *čing trum* set, an ensemble played during the buffalo sacrifice ritual, as well as a *čing Potao Apui* (also called *čing vang* or *čing phai yang*), the ensemble played by the entourage of the King of Fire (*Potao Apui*) for rituals celebrated in his abode (see Đào Huy Quyền 1998: 290). Nay Phai hypothesized that flat gongs of the *čing* and *čing arap* ensembles were added at a later date to this small set of three bossed gongs. A similar hypothesis was suggested by Bùi Trọng Hiền (2005: 8). Basing himself on the studies of Tô Ngọc Thanh, he states that the *čeng xo xoh* ensemble of the Bahnar ethnic group, similarly made up of three bossed gongs tuned a perfect fifth and fourth apart, is the oldest of the Central Highlands.

Therefore, according to Nay Phai, the central core of three bossed gongs constituting the *čing trum* and the *čing Potao Apui* is the original basis and foundation shared by all other gong ensembles. Thus, the *čing*, the *čing moñum*, as well as all their variants, should be considered as more recent ensembles, and the *čing arap* – which according to Nay Phai was developed by the Bahnar, an ethnic group living close to the Jarai Arap (hence the name *arap*, indicative of its northern provenience) – entered the picture an even later stage. The fact that among the Jarai of the northern lands the tube zither has a Bahnar name

¹¹ Maître (1912: 316) relates a story that refers to the making of gongs in the southern regions of the Central Highlands of Vietnam. The centre of production was supposedly a village inhabited only by women.

(the *ting ning*) suggests that this instrument might have a Bahnar origin, corroborating Nay Phai's hypothesis – while among the southern Jarai subgroups the new heterochord tube zither may have replaced an old idiochord, as its local name (*gông*, a term shared by the heterochord as well as idiochord tube zithers) seems to indicate.

Concluding remarks

In this article I have analysed the relationship between instruments made of bamboo and metal among the Ede and Jarai ethnic groups in the Central Highlands of Vietnam. There seems to have been a process according to which several musical instruments made of bamboo served as precursors for gong ensembles. This process – corroborated by several stories (Mission Jrai-Bahnar 2009: 9-13) – was described by many of my local consultants. They claim that gongs were introduced to the Central Highlands of Vietnam – the oldest gongs from Cambodia and Laos, and the more recent gongs from Vietnam – and that they were adapted to the existing local musical approaches, which had been elaborated on several bamboo instruments. This claim is supported by the names of the notes, the playing techniques, the musical scales and the repertoires that are shared by the bamboo instruments I have analysed and the *čing* and *čing arap* gong ensembles. The connection is moreover not limited to the Ede and Jarai but it includes other indigenous ethnic groups inhabiting the Central Highlands, such as the Austroasiatic-speaking Mnong Gar and Bahnar.

There is also some other evidence for a close connection between bamboo instruments and gong ensembles among the Ede and Jarai ethnic groups. For instance, among the Ede – where the *čing arap* ensemble is not traditionally played – bamboo instruments mirror the features of the *čing* gong ensemble. Among the southern Jarai subgroups, where the *čing arap* as well as the *čing moñum* ensembles are traditionally played, some of their bamboo instruments (such as the *ding nãm* mouth organ) share some features with the *čing moñum* ensemble, while others (such as the *gông* heterochord tube zither) mirror the *čing arap* ensemble (see Dournes 1965: 224-227, 234). Instead, among the northern Jarai – who do not traditionally play the *čing moñum* ensemble – bamboo instruments reproduce only the features of the *čing arap* ensemble.

I would like to make a final remark regarding the musical scales of the instruments that I have considered in this article, which are hemitonic as well as anhemitonic – the *čing arap* and related bamboo instruments in the former case, and the *čing*, its variants and related bamboo instruments in the latter case. Upon listening to the musical instruments of the Austronesian-speaking Jarai and Ede ethnic groups one notices the correspondences between their musical scales and two of the most distinctive scales of the wider Austronesian milieu: the Indonesian *pélog* and *sléndro* (although the tuning of neither of these scales is absolute, Pickvance 2005: 45; Fig. 10). The seven-note *pélog* scale – which according to Kunst (1973: 49) originally had just five notes – is played on the basis of what are usually described as modes, which in Indonesia are defined as *patet*

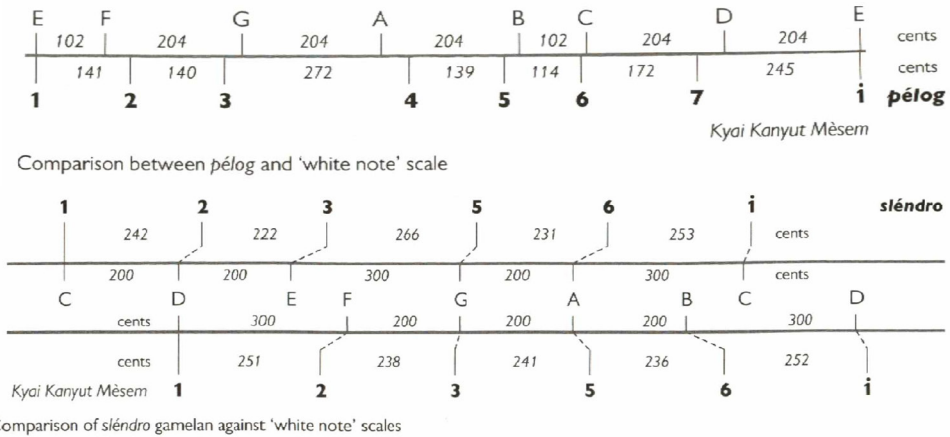


FIGURE 10. The Indonesian *pélog* and *sléndro* scales compared to western diatonic scales (Pickvance 2005: 47, 50).

(see Becker 1980: 78), consisting of five notes. Thus, the *patet nem* mode of the *pélog* (1 2 3 5 6) closely corresponds to the pentatonic hemitonic scale with two semitones of the *čng arap* and the related instruments (compare Fig. 6 and Fig. 10).¹² Although variations in the pitch of the intervals are more widespread and noticeable in the *sléndro* (Pickvance 2005: 45), this scale has many similarities to those of the *čng* and *čng moñum* ensembles, and the related bamboo instruments (compare Fig. 4 and Fig. 10). They are, in fact, all anhemitonic (with no semitones), and although the scales of the *čng* and the *čng moñum* are hexatonic, some variants of these ensembles, notably the *čng nam* and the *čng kodor*, have pentatonic scales (like the *sléndro*).

The presence of the hemitonic and anhemitonic scales within the same ethnic group – such as the southern Jarai subgroups – suggests the existence of a “dual practice” (Maceda 1990: 208): an important cultural concept akin to what Fox (1987: 523) defined as a “complementary duality”, which constitutes “a common Austronesian conceptual

¹² A fascinating connection between the *pélog* scale and the milieu of the Central Highlands of Vietnam is that of the musical scale of a lithophone found in 1949 in the village of Ndut Lieng Krak of the Mnong Gar ethnic group (today's Đăk Lăk province). This set of stones – the discovery of which thrilled many scholars – probably dates to the Bacsonian Neolithic period (Condominas 1952: 371), from between a few millennia to a few centuries ago according to Schaeffner (1951: 2), or it could date as far back as 2500-3000 years ago (Trần Văn Khê 1982: 235). Kunst argued that the closest scale to that of this lithophone is the *gamelan pelog sekati* scale (reported in Condominas 1952: 372). Schaeffner (1951: 17), who personally examined it, argued that “the scale is pentatonic, of Indonesian type”, and that its intervals resemble the *pelog* or a similar scale. Trần Văn Khê (1982), also studied this lithophone, in addition to those from Khanh Son and Bac Ai (found in the region inhabited by the Rôglai, an Austronesian language-speaking ethnic group). He considered the hypotheses of some Vietnamese scholars, according to which the lithophones of Khanh Son – used by its last owner as a sort of sound scarecrow, called in Jarai *tang plak ia*: a carillon of stones made to vibrate by the flowing water of a creek – and of Bac Ai were originally played in a similar way to the *torung*, a Jarai bamboo xylophone. In a book published by the diocese of Kontum, it is put forward the hypothesis that there was a transition from bamboo musical instruments to stone musical instruments, later culminating in the adoption of metal gongs (Mission Jrai-Bahnar 2009: 19; see also footnote 3).

heritage”. According to Maceda (1990: 208), the distinction between these scales has a fundamental importance, which conveys “aesthetic and philosophical considerations akin to *yin* and *yang*, a dualism expressed not in writing but simply in a live, traditional musical practice”. This dualism is by no means unique or unrelated to “other dualisms of hemitonic-anhemitonic relationships” elsewhere in Southeast Asia (Maceda 1990: 209), and the presence of the hemitonic and anhemitonic scales in the Central Highlands of Vietnam would seem to be part of a larger picture of cultural and musical connections throughout Southeast Asia.

References

- Alperson, Philip, Tô Ngọc Thanh and Nguyễn Chí Bền
 2007 “The Sounding of the World: Aesthetic Reflections on Traditional Gong Music of Vietnam”, *The Journal of Aesthetics and Art Criticism*, LXV/1: 11-20.
- Arana, Miranda
 1999 *Neotraditional Music in Vietnam*, Kent, Nhạc Viet.
- Becker, Judith
 1980 *Traditional Music in Modern Java: Gamelan in a Changing Society*, Honolulu, University Press of Hawaii.
- Blades, James
 2001 “Gong, History”, in *The New Grove dictionary of music and musicians*, 2nd edition, X, Stanley Sadie (ed.), London, The Macmillan Press: 133-136.
- Bùi Trọng Hiền
 2005 “Công Chiêng Tây Nguyên Một Số Đặc Điểm Nghệ Thuật Cơ Bản”, paper presented to UNESCO proposing the candidature of the ‘Space of Gong culture’ as Intangible Cultural Heritage: 1-28.
- Calò, Ambra
 2009 *The distribution of Bronze Drums in Early Southeast Asia: Trade routes and cultural spheres*, Oxford, Archeopress.
- Condominas, Georges
 1952 “Le lithophone préhistorique de Ndut Lieng Krak”, *Bulletin de l'Ecole française d'Extrême Orient*, XLV/2: 359-392.
 1972 *Musique Mnong Gar du Vietnam – Mnong Gar music from Vietnam*, 1 CD, Collection Musée de l'Homme, Ocora/Radio France, OCR 80.
- Đào Huy Quyền
 1998 *Nhạc Khí Dân Tộc Jrai và Bahnar (Musical Instruments of the Jrai and Bahnar)*, Thành phố Hồ Chí Minh, Nhà Xuất Bản Trẻ.
 2010 *Văn hóa cồng chiêng các dân tộc Tây Nguyên*, Hà Nội, Nhà Xuất Bản Văn Hóa Thông Tin.
- Della Ratta, Vincenzo
 2020 “The Space of Gong Culture in the Central Highlands of Vietnam. Old and New Directions in Ede traditional Music”, in *Cultural Mapping and Musical Diversity*, Sarah Ross and Britta Sweers (eds.), Sheffield, Equinox Publishing: 145-171.

- Dournes, Jacques
 1965 “La musique chez les Jörai”, *Objets et Mondes*, VI/4: 211-244.
- Evans, Grant
 1992 “Internal Colonialism in the Central Highlands of Vietnam”, *Sojourn*, VII/2: 274-304.
- Fox, James
 1987 “Southeast Asian Religions: Insular Cultures”, in *The Encyclopedia of Religion*, Mircea Eliade (ed.), XIII, New York, Macmillan: 520-526.
- Guérin, Mathieu, Hardy, Andrew, Nguyễn Văn Chính and Stan Tan Boon Hwee
 2003 *Des Montagnards aux minorités ethniques. Quelle intégration nationale pour les habitants des hautes terres du Viêt Nam et du Cambodge ?*, Bangkok, Institut de recherche sur l’Asie du Sud-Est contemporaine-L’Harmattan.
- Hardy, Andrew
 2003 *Red Hills. Migrants and the state in the highlands of Vietnam*, Copenhagen, Nias Press.
- de Hauteclouque-Howe, Anne
 1987 *Les Rhadés. Une société de droit maternel*, Paris, Editions du Centre National de la Recherche Scientifique.
- Heger, Franz
 1902 *Alte Metalltrommeln aus Südost-Asien*, Leipzig, K. von Hiersemann.
- Hickey, Gerald Cannon
 1982 *Sons of the Mountains: Ethnohistory of the Vietnamese Central Highlands to 1954*, New Haven, Yale University Press.
- Hood, Mantle
 1980a “Southeast Asia”, in *The New Grove dictionary of music and musicians*, Stanley Sadie (ed.), XVII, London, The Macmillan Press: 762-767.
 1980b *The evolution of Javanese gamelan. Book I Music of the Roaring Sea*, New York, Edition Heinrichshofen.
 1993 “Stratification polyphonique dans les musiques d’Asie du Sud-Est”, *Cahiers de musiques traditionnelles*, VI: 3-10.
- Kersalé, Patrick
 2000 *Viêt-Nam: Anthologie de la Musique Êde – Vietnam: Anthology Of Êde Music*, 1 CD, Buda musique – 92726-2.
- Kunst, Jaap
 1973 *Music in Java*, The Hague, M. Nijhoff (or. ed. 1934).
- Logan, William
 2010 “Protecting the Tay Nguyen gongs: conflicting rights in Vietnam’s central plateau”, in *Cultural diversity, heritage and human rights: intersections in theory and practice*, Michele Langfield, William Logan and Mairead Nic Craith (eds.), Abingdon, Routledge: 189-207.
- Lưu Hùng
 2006 *The grave house of the Jarai Arap people*, Hanoi, Vietnam Museum of Ethnology.
- Lưu Hùng and Nguyễn Văn Kự
 2002 *Nhà mồ Tây Nguyên – Funeral houses in the Central Highlands of Vietnam – Maisons funéraires des peuples des Hauts Plateaux du Vietnam*, Hà Nội, Nhà xuất bản Thế Giới.

- Maceda, José
 1990 "In Search of a Source of Pentatonic Hemitonic and Anhemitonic Scales in Southeast Asia", *Acta Musicologica*, LXII/2-3: 192-223.
- Maître, Henri
 1909 *Les régions Moï du Sud Indo-Chinois. Le plateau du Darlac*, Paris, Plon.
 1912 *Les jungles moi: mission Henri Maitre (1909-1911), Indochine Sud-Centrale: exploration et histoire des hinterlands moi du Cambodge, de la Cochinchine, de l'Annam et du bas Laos*, Paris, Emile Larose.
- Maurice, Albert-Marie
 2002 *Croyances et pratiques religieuses des montagnards du Centre-Vietnam*, Paris, L'Harmattan.
- McGraw, Andrew
 2007 "The Pia's Subtle Sustain: Contemporary Ethnic Identity and the Revitalization of the Lanna 'Heart Harp'", *Asian Music*, XXXVIII/2: 115-142.
- Michaud, Jean
 2006 *Historical Dictionary of the Peoples of the Southeast Asian Massif*, Historical Dictionaries of Peoples and Cultures, Maryland-Toronto-Oxford, The Scarecrow Press.
- Mission Jrai-Bahnar
 2009 *Čing Čêng – Les gongs. Gru Ama Grua Amĩ – L'Héritage des Ancêtres ou de la culture des Montagnards*, Kontum, Publication de l'Évêché de Kontum.
- Montagu, Jeremy
 1965 "What is a Gong?", *Man*, LXV: 18-21.
 2007 *Origins and Development of Musical Instruments*, Scarecrow Press.
- Nguyễn Thuyêt Phong
 2008 "Minority Music of Vietnam", in *The Garland Handbook of Southeast Asian Music*, Terry Miller and Sean Williams (eds.), London, Routledge: 297-302.
- Nicolas, Arsenio
 2009 "Gongs, bells, and cymbals: the archaeological records in Maritime Asia from the 9th to the 17th century", *Yearbook for traditional music*, IV: 62-93.
- Pickvance, Richard
 2005 *A gamelan manual. A player's guide to the Central Javanese gamelan*, London, Jaman Mas Books.
- Sachs, Curt
 1940 *The history of musical instruments*, New York, Norton & Company.
- Salemink, Oscar
 2003 *The Ethnography of Vietnam's Central Highlanders. A historical contextualization, 1850-1900*, Honolulu, University of Hawaii Press.
 2012 "Is There Space for Vietnam's Gong Culture?: Economic and Social Challenges for the Safeguarding of the Space of Gong Culture", in *South-East Asia. Studies in Art, Cultural Heritage and Artistic Relations with Europe*, Izabela Kopania (ed.), Warsaw-Torun, Polish Institute of World Art Studies and Tako Publishing House: 127-134.
- Schaeffner, André
 1951 "Une importante découverte archéologique: le lithophone de Ndut Lieng Krak (Vietnam)", *Revue de Musicologie*, XXXIII/97-98: 1-19.

Thurgood, Graham

1999 *From Ancient Cham to Modern Dialects: Two Thousand Years of Language Contact and Change*, Honolulu, Hawaii University Press.

Tô Đông Hải

2002 *Nghi lễ và âm nhạc trong nghi lễ của người Jrai*, Hà Nội, Nhà Xuất Bản Khoa Học Xã Hội.

Tô Ngọc Thanh and Nguyễn Chí Bền

2006 *Masterpieces of the oral and intangible heritage of humanity. Cultural space of Tay Nguyen Gong*, Hà Nội, Nhà Xuất Bản Thế Giới.

Trần Quang Hải and Zemp, Hugo

1997 *Vietnam: musiques de Montagnards – Vietnam: music of the Montagnards*, 2 CD, Collection CNRS/Musée de l’Homme, Le Chant du Monde, CNR 2741085-86.

Trần Văn Khê

1982 “Du lithophone de Ndut Lieng Krak au lithophone de Bac Ai”, *Revue de Musicologie*, LXVIII/1-2: 221-236.

Trần Văn Khê and Nguyễn Thuyết Phong

2001 “Vietnam”, in *The New Grove dictionary of music and musicians 2nd edition*, Stanley Sadie (ed.), XXVI, London, The Macmillan Press: 588-597.

UNESCO

2008 “The Space of Gong Culture” on the UNESCO Representative List of the Intangible Cultural Heritage of Humanity <<https://ich.unesco.org/en/RL/space-of-gong-culture-00120>> (accessed April 27th 2022).

UNHCR – Centre for Documentation and Research

2002 “Vietnam: Indigenous Minority Groups in the Central Highlands”, <<https://www.refworld.org/pdfid/3c6a48474.pdf>> (accessed April 27th 2022).

Vũ Quốc Khánh

2010 *Người Êđê ở Việt Nam – The Ede in Vietnam*, Hà Nội, Nhà Xuất Bản Thông Tấn.