Ethnographic Analogies Between South Andean Patterns of Dance-Music Traditions and Their Pre-Hispanic Evidence

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ZUSAMMENFASSUNG

Analogien von Musiktraditionen der rezenten Aymara der bolivianischen Hochebene, von Landleuten in Zentralchile, von den Mapuche im zentralen Südchile zu vorspanischen Belegen sollen im folgenden vorgelegt werden. Ein ethnographisches Modell wurde entworfen, mit dem der Nachweis für eine solche Analogie erbracht werden kann. Dabei wurden alle möglichen Vorkommen nachspanischen Ursprungs bewußt ausgelassen, um Erklärungen von Änderungen und Abweichungen von dem Modell zu vermeiden. Das Hauptinteresse gilt dem Klang, wie er in diesem Modell konzipiert ist. Die wichtigsten Charakteristika sind in fünf Kategorien zusammengefaßt: 'Harmonie' im Timbre, multiorchestrale Mehrstimmigkeit, Raum (des Erklingens und der Vorführung), Dualismus (in der Weltanschauung) und das Phänomen der Trance. Am Ende werden in einem kurzen Resümee die Beziehungen dieser Merkmale zum archäologischen Befund aufgezeigt.

Verschiedene methodische Strategien werden hinterfragt. Die Beschreibungen werden in vier Schritten vorgenommen: 1. vorspanische Daten zu musikbezogenen Überresten; 2. ethnographische Analogien; 3. historische Wandlungen, die das ethnographische Modell und die archäologischen Funde miteinander koppeln (könnten); 4. Neuinterpretation der archäologischen Befunde sind zu erstellen. Der Klang als das wesentlichste Thema unserer Untersuchungen, der Einsatz sehr langfristig wirkender Modelle und die Untersuchung anderer Klangeigenschaften als Stimmung (Tonhöhen) und Skalen werden entwickelt.

The study of pre-Hispanic music implies a four-step process. First, we have archaeological data, which we interpret as 'musical relics'. Second, we apply ethnographic techniques to search for musical analogies to compare these finds. Third, we try to understand the historical changes that link the two. Finally, we return to the archaeological record to try to interpret it as a historically altered version of our ethnographic model.

We define music archaeology as the study of the sound aspect of ancient cultures[1]. The study of this encompasses organology, acoustics, and in general the musical possibilities of the material. Other aspects, derived from indirect data (iconographic[2], philological, historical, etc.), I prefer to submit to three conceptual 'filters' that complement our study in different ways: archaeology, ethnology and history. Archaeology permits us to interpret the sample as remains of a whole cultural complex and to define the context in time and space. Ethnology gives us a model with which to interpret the sample through relevant uses in other cultures, including conceptual and contextual interpretation of similar instruments. And History gives us a picture of the different historical contexts and evolution, and the multiple combinations of continuity and change that link archaeological and ethnological data.

The archaeological evidence is always only part of an unknown whole, the rest of which was not culturally selected to be placed in the grave, or which was not preserved, or remains undiscovered. Musical artefacts are a selected area from that

[1] Olsen 1990, 176 proposes the objective as 'musical knowledge'. I think this is a very western oriented objective. In fact, 'music' as a concept does not have reality in any of the studied Southern Andean indigenous traditions. On the other hand, the term 'sound' encompasses a lot of concepts, activities and phenomena broader than the 'musical' realm, such as the acoustics of space, for example.

[2] Iconography has been taken as one of the four-sided methodological tools of archeomusicology (Olsen 1990). As South Andean samples have little iconographic information, very restricted and highly stylized, I prefer to include it as part of the archeo or historical studies.

fragmented whole. To make matters worse, in the southern Andes many of our samples lack contextual data as they do not come from properly excavated finds. Because of this, the size of our sample is critical: the smaller our sample, the more precise it is in contextual references, but there is much less data over-all. At the other extreme, the larger the sample, the more general and varied are the contextual references and data.

Because of the scarcity of sample data I prefer to cover a broad area that I have been studying now for some years[3]. The archaeological evidence consists of flutes made from closed pipes of the 'complex tube' type. There are two species: the *pifilca* single tube, and the *antara* panpipe[4]. They are made of ceramic, stone or wood, and take many stylistic features from the numerous cultures that extend from South Peru to Central-South Chile (Paracas, Nazca, Tiwanaku, Arica, San Pedro, Aguada, Santa Maria, Diaguita, Ancon-cagua, Mapuche) and covering a span of almost 2000 years[5]. From the year 900, in the northern part of this area the *antara* was replaced by the cylindrical cane-tube *siku* panpipe[6].

Fortunately our field – sound – presents notable objects of study that extend over time and space, underlying many cultural variations. I will focus on the construction of the second step, the ethnographic model, and specifically on the sound components of it, to compare with the sound components of our archaeological evidence.

THE ETHNOGRAPHIC MODEL

Today the *siku* and the *pifilca* are still in use, but not the *antara*. They are used by three different cultural traditions, coinciding with the same area as the archaeological evidence. Today these cultures are separated by thousands of kilometres: the Aymara on the Bolivian Plateau, the Peasants in Central Chile and the Mapuche in Central-South Chile. The Aymara and Mapuche form indigenous communities: the Mapuche conserve their language, religion and cultural practices, the Aymara conserve some (their religion is Roman Catholic). The Peasants in Central Chile are western – orientated, and conserve only vestiges of the ancient practices.

The Aymara use *siku*, the Peasants and Mapuche use *pifilca*. They are used in the *fiesta* ritual tradition of the Andes, in which proximal groups share a holistic event where music, dance, poetry, food and social events are integrated on both the sacred/profane axis and the contest/friendship one. Today the whole ritual system is partially damaged or distorted[7]. We will ignore these disintegrating aspects to focus only on those, which can be related to our archaeological finds. I have arranged them in five categories:

1. TIMBRE-HARMONY[8]

The 'vertical' aspect of sound (as western culture has conceived it) has a deep meaning in South Andean music, albeit that there is no specific name for it. The timbre of a single instrument and that of the group characterises what I have called 'timbre-harmony'. The overall idea here is that the whole orchestra is a single instrument. It is composed of the same type of instruments (organological identity), and they always play in unison. Melodies played on the *sikus* orchestras maintain this illusion, through changes of players and instruments. This is the refined version of a more extended 'sea of sound' concept, in which the superposition of similar instruments, loosely or non co-ordinated, generates a broad, rich and varied – though balanced – mass of sound. We find this with flutes, drums, rattles, jingles and other idiophones, and the waterfall sound is also in this category[9]. We also find special structures whose function is to produce complex or 'dirty' sound in idiophones and drums. This 'sea of sound' basic concept links 'timbre-harmony' with 'multi-orchestral polyphony'. But when applied to our flutes, we find two specific aspects:

a. Complex Timbre Concept

The flutes are constructed with real care to produce the proper sound. The acoustics are worked to obtain a complex structure of sound with an abundance of high harmonics in a dynamic and unstable condition that is heard as a dissonant, vibrating, dense and loud voice. Examples are the

3 Pérez de Arce 1992; Pérez de Arce 1993a; Pérez de Arce 1993b; Pérez de Arce 1995; Pérez de Arce 1996; Pérez de Arce 1997; Pérez de Arce 2000; Pérez de Arce 2002.

4 I will use italics to denote organological types. These names are arbitrarily chosen from ethno instruments. I have tried to maintain the nomenclature used by other authors (see conclusions).

5 A description of this archaeological sample can be found in Perez de Arce 2000.

6 For a historical aspect of this change see Perez de Arce 1993a.

7 There are many studies of the vanishing aspects of present-day rituals. See Mercado 1995; Mercado 2000; Mercado 2001

8 I use the term 'timbre' here mainly in the restricted sense of the harmonic structure of the voice of a single instrument, and 'harmony' in the sense of superposition of different voices over the spectrum, independent of their pitch relation. 'Timbre-harmony' relates to the absence of discrimination between both aspects.

9 See C. Mercado Muñoz, this volume.

sonido rajado in Central Chile[10] and the *tara* sound in Bolivia. This last is conceived as 'two voices', hence dual[11] .

b. The 'Harmonic Amplitude' Concept.

When the complex timbre of a single flute is multiplied by many others in unison, it sounds like a flute extended over a great range of pitches. It can be a dissonant cluster, extended over several octaves, as with *pifilcas* or take a more complex version as with *sikus* orchestras. Here sound is extended by octaves or fifths in both directions[12], and at the same time all pitch relations (unisons, octaves or fifths) are worked so as to be slightly dissonant, creating a relatively wide pitch range[13]. The combination of basic consonance and microtonal dissonance changes from one orchestra to other.

2. 'MULTI-ORCHESTRAL POLYPHONY'[14]

The social use of these flutes implies a contrast between the cohesion, balance and co-ordination of unison inside the group; with the complete independence, conceptualised as the avoiding of coordination, that rules the encounter of two or more orchestras. Each orchestra represents one community. The rule is that musicians from the same group are coordinated, while those from different ones avoid coordination. The Mapuche Indians show this in a varied form: in the great Mapuche rituals we can observe that each instrument plays in complete independence: drums, trumpets, *pifilcas* form a chaotic polyphonic and polyrhythmic structure that reminds one of the great Tibetan orchestras. Here the difference is in organological types (drums, trumpet, flutes, etc.) which, in the more sophisticated Andean societies, such as the Aymara, are avoided in favour of organological unity.

To be precise, unison within the orchestra is never accurate, especially with the presence of children and untrained musicians who produce a continuos flow of 'harmonic' correspondences by the lack of rhythmic co-ordination between the flutes. In some *siku* orchestras we can observe a fine use of micro-coordination within the unison to produce 'echoes' and other musical effects.

a. Small Contrast, Poco Varía Concept15

The organological unity within the orchestra is replicated to a certain extent in the *fiesta*[16]. The different orchestras are similar in the overall range of their timbre. A basic principle of South Andean identity is that small variations have great significance. For an outsider, all orchestras sound the same, for the participants each has its own sonic identity. As they are similar, they can merge or blend their sound, producing a quantity of polyphonic events, such as bass 'difference tones', 'ghost melodies', complex polyrhythms and harmonies that are continuously changing. In short: when we hear the whole sound of the *fiesta* as a single event from one big orchestra, using the 'timbre-harmony' concept, we can hear a polymorphic, extended, and constantly varied sound structure.

b. Competition

Independence between orchestras is the basis of multi-orchestral polyphony. The avoiding of coordination in the pulse produces a complex, changing relationship of sounds that varies depending where, when and how they are heard.

Each orchestra represents a social community. Their mutual characteristics are contrasted at all levels (dresses, ornaments, colours, etc.). The sonic side of this difference produces a contest, based on the rule to avoid co-ordination between orchestras. As the sound level is high, and avoiding matching pulses is hard, the younger, inexperienced orchestra 'loses' when it fails to maintain its own pulse and submits to the other one. This is not officially proclaimed, nor is there any kind of reward; it is simply a matter or pride (or shame). Mature orchestras develop subtle musical strategies to obtain this objective, such as slow pulse changes, spatial movement and, most important of all, the stamina to sustain the great effort of maintaining the dance and the music over a long period of time.

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10 Pérez de Arce 1997; Pérez de Arce 2002.

11 Stobart 1996; Gerard – Ardenois 1997.

12 As an example, Turino (1998) describes a *siku* orchestra with 9 registers in Conima (Peru), divided into 3 main ones, called *suli*, *malta* and *sanja*, each one divided into another 3 (*suli*, *bajosuli*, *contrasuli*, etc.).

13 Pérez de Arce 1995; Pérez de Arce 1996; Pérez de Arce 2002; Valencia Chacón 1982; Langevin 1990,117; Borras 1998, 42–43.

14 I use the term 'polyphony' as any combination of different voices other than unison.

15 Borras 1998.

16 Today it is difficult to assist to 'pure' organollogically *fiestas*. The common practice is that different kinds of instruments are used. They comes from different geographic traditions. We can assume that in ancient times they were more organologically homogeneous, although we can not eliminate the possibility of different organological presences. On the other hand, we know well the internal coherence of, for example, central Chile *pifilca fiestas* and the attitude of the players against the intrusion of 'foreign' practices that in the practice disturb, difficulties or even impede the proper *pifilca* type ritual. In short: the pure organologicall *fiestas* reveal the full extent of their sonic coherence, richness and social implications.

Some Aymara communities preserve the *tinku* ritual contest which extends beyond musical confrontation and can reach physical combat with severe injuries and sometimes death resulting[17].

c. Random Design

Random design is present at every stage of South Andean group music, but it is always counter-balanced by controlling elements. Its main expressions are the integration of children and un-trained musicians in the orchestras, the avoiding of coordination between orchestras, and the multiple layers of movement (see below). We can also find it to a minor extent in the construction of instruments, grouping of instruments within the orchestra, concurrence of orchestras with a *fiesta*, space acoustics and trance. Its presence permits the intervention of factors other than the conscious prescribed ones and, like improvisation, gives room for endless differentiation between different musical events.

3. SPACE

Southern Andean orchestral music is intimately involved with space. It moves in space and relates to space in several ways. The basic connection is dance. All flute players dance in turns, jumps and leg movements[18]. The co-ordination of the orchestra is obtained through this choreographic movement. The (first) drummer gives the pulse and guides the choreographic movements, while slowly advancing in the procession[19]. Every orchestra has its own series of movements. The architectural and geographic structure of the place makes the basic resonance frame that shapes that particular *fiesta* sound[20]. We can recognise three basic space-sound organisations: one is choreography; the others are the spatial organisation of instruments inside the orchestra, and the spatial organisation of the orchestra inside the *fiesta*. Choreography I will skip, because of lack of specific data, and the minor effect it has on the model[21].

a. 'Orchestra Walk Through'

The arrangements of instruments in pairs and lines supposes a presentation of sound that changes while it is passing in front of a static hearer. For example we can hear a sequence from bass flutes and small drum to small flutes and bass drum, separated by ten meters. This sequence is like hearing one instrument but appreciating separately the extended arrangement of timbres that is made use of.

b. Place Walk Through

Depending on the place, the sound moves through a series of different acoustic spaces. For example, it can start inside the temple, go through narrow streets, to an open place (a beach or the top of a hill) and return to the temple. As the procession is formed by many orchestras, it can be simultaneously at various acoustic spaces. The most dramatic changes take place at the beginning and the end of the *fiesta*, when the contrast of the high resonance and reverberance of the catholic church, and its opposite, the dry and non-reverberating quality of the plaza outside, is revealed.

The numerous people who have come to the *fiesta* can move to and from in any direction at any time, changing the overall impression of the sound.

4. DUALITY

Duality is not a musical concept but, as with the Chinese 'yin and yang', organises the perception and knowledge of Andean people. The Aymara word *yanantin* has the meaning of opposite pairs united in a complimentary solidarity, as a mirror image or as the couple male-female[22]. It is found in several musical aspects:

a. Pair of Flutes

These are the basic unit of the orchestras. In the *sikus* orchestras they are named *ira/arka*, and are conceived of as opposite complimentary parts, male and female, both forming a single instrument (each one has half the notes).

b. Pairs of Rows

Rows of instruments are formed from 4 to 15 flutes approximately. This repeats the same organisation of the pairs of flutes on a broader scale. Their sounds alternate, although they were two

17 Urton 1993.

18 See Plisson 1998.

19 This does not apply to Mapuche rituals, where drums (*kultrung*) are the shaman's exclusive instrument. But the main space-sound structure is the same as explained for the other groups.

20 A description of space-sound relation in *pifilca* rituals of Central Chile, see Pérez de Arce 1993b.

21 Also choreography varies a lot from region to region, making it difficult to extract a single model.

22 There is a wide literature on the duality of Indian 'art' (see, for example, Urton 1993). In the specifics of *siku* see Baumann 1996a; Langevin 1990; Valencia Chacón 1981; van Kessel 1981. For specific *pifilca* duality see Pérez de Arce 1993b; Pérez de Arce 1995.

instruments. The rate of alternation is given by the drum section.

c. Emparejado

In pairs of flutes or rows their sounds tend to be similar, so as to provide a continuity. They always play with the dialogo-musical technique, alternating the sound of both instruments and so permitting long sustained phrases without interruption. The same, on one cluster, occurs in *pifilcas*. The rule here is that, while they remain dual, the sounds are related to provide continuity between both.

5. TRANCE

Another non-musical event, trance, can occur as a consequence of the combination of the previous categories of sound characteristics. Trance is a personal mind-state that affects each person differently, from no effect at all to the most extreme emotion. The combination of sound characteristics we find in South Andean rituals is especially efficient in obtaining other states of consciousness for the flute-players. Through the use of hyperventilation, monotonous rhythm, slow change with unstable alterations, simple musical cells, multiple versions of the sound density, great space-time dimensions, great intensity, the effort (concentration/tension), the exercise, the ritual sacrifice and the presence of the sacred, the mind is driven towards a different state[23]. All this comes from the ancient practices of shamanism to induce trance. It is to be noted that, whatever occurs, shamanic obtaining of a trance state always uses sound[24]. Trance is also sought through other sound events such as those described by Claudio Mercado, this volume.

HISTORICAL AND MUSIC-ARCHAEOLOGICAL STEPS

As stated before, I will not extend this paper to cover steps three and four of the investigation, but briefly summarise them.

History in the Andes is marked by the great turning point of the Spanish conquest that divides the pre-Hispanic (archaeological) from the post-Hispanic (historical) world. Since then we have a prejudiced situation, where European 'culture' is opposed to a popular local 'anculture'. This makes it hard to find useful historic or ethnographic descriptions of Indian (or indigenous-based) music[25]. Today we have a mixed balance of local and foreign aspects, and it is not easy to interpret pre-Hispanic traces in today's society.

Sometimes we can interpret its echoes in the tendencies that pervade popular culture, conserving and re-elaborating parts of ancient traditions. We can distinguish some by comparing them with foreign (mainly Spanish) tendencies. Those that show no similarity at all (such as *sonido rajado*) are the most probable to be a part of the pre-Hispanic heritage, while those that show similarities ones are more or less indefinable as such. Some historical descriptions, however, give useful information, sometimes through negative commentary. These can be taken to include unison melody, amplitude registers in four voices and the 'broad pitch area'[26]. Others, such as 'multi-orchestral polyphony' or the trance-state were so strange to European people that they leave almost no trace on the historical record.

If we apply our ethnological model to the archaeological sample, we can observe that it fits in each part, as a historically changed version of it. Differences inside the ethno-model match the same differences in the archaeo-model.

The archaeo-model, when compared with the ethno-model, looks like a scattered array of pieces that corresponds closely to it. Historically available data confirm this continuity. In reverse, the similarities of musical styles separated today by distant geographic and cultural situations can be interpreted as survivals of a common past.

Specific parts of both models, ethno and archaeo, are not well known: in the case of space acoustics, and trance, mainly I suspect because no one had paid serious attention to them. Archaeological evidence of space acoustics seems to be present in many part of the Andes, if we include evidence based on the scattered personal experiences of visitors to pre-Hispanic ruins. Trance is a very intimate experience, and as such leaves no trace, but I have found it in the experience of every one who has worked seriously on the sound of pre-

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23 Mercado 1993a; Mercado 1993b.

24 a world-view of the relation between trance and music see Rouget 1980

25 Normally there are none, or they are interpreted as non-musical events. As an example of the historic description of *sonido rajado* see Perez de Arce 2000.

26 For our purposes, mainly dealing with the aesthetics of sound, the information is very scattered. See Gruszczynska-Ziolkowska 1995 as an example of historic documentation on Inca music. For a survey of historic evidence of Central Chile *pifilca* see Pérez de Arce 2000. We find timbre categories allusions in Aymaras (Bertonio 1984 [1612]), and sometimes useful information as Toribio de Motolinía (ca. 1550, Cit. Stevenson 1976, 159), when he is surprised by the exactness and coordination of *siku* orchestras although it seems they are not well pitched together, revealing to us the use of the 'broad pitch area' concept.

Hispanic flutes[27]. Also we have strong relationships between our pre-Hispanic flutes and shamanism, including halucinogenic plants (cebil, anadenantera peregrina, in Northern Chile and Argentina, San Pedro cactus, cereus pachanoi, in Southern Peru)[28].

CONCLUSIONS

The four steps described at the beginning as a methodological sequence, in the processing of information become a complete interacting whole. The data gained in one part of it affects the others: ethnographic data permits us to search for certain archaeological aspects that previously have been ignored, for example.

We must begin to work taking into account that, although sound is our main object of study, it is always incomplete: we will never know how ancient people heard. Our definitions will always be approximations. No matter how cautious we are not to apply our own meanings, expectations or mental images to the archaeological finds[29] always some part of them will slip in, undetected, because it is an integral part of sound, and because the 'music' part of it is our personal, intimate creation. When working at the ethno level our sound object is also incomplete and diffuse, because we are searching for the remnants of a sound tradition 500 or more years old. If it is present, it is blended and changed. To grasp and identify this rather diffuse, ill-defined object is only possible when working with broad tendencies, with the main directions, not the precise details that define them. This broad idea, when compared with reality always acts as an ideal model, and never attains the pure form. At any level we find exceptions, variations, dilution, disturbing factors that alter this ideal model. It must be so because our model is related to a different reality, such as the strange, undocumented pre-Hispanic sound traditions. We use our ethno-model as a methodological tool, a hypothesis to frame our understanding of ancient sound uses. This frame is, hypothetically, the same as the archeo one, but changed through the ages.

The fragility of this hypothesis must always be understood: we must be always aware that we cannot know how fragmentary is the portion we are studying, or how accurate is our interpretation of it. This means that all our efforts are focussed on a hypothetical 'reconstruction' that never will be complete nor defined. Another aspect crucial to our understanding of 'sound' is the absence or poor definition of limits between the separate fields we use, such as 'music'/'noise', 'ambient'/'cultural sounds', 'individual'/'group music', and so on [30].

When, for our model, we use the general tendencies of present-day indian-based traditions, we can try to identify historical tendencies. If, as in our case, these are common tendencies, present in distant and isolated places where we know there was a common pre-Hispanic past, we have a solid hypothesis to work on. This large-scaled sample with abundant and varied data is preferable, for this purpose, than small-scaled, precise but scarce and very fragmentary data. At the same time, as we stated above, this approach always gives room for finding exemptions when we go from the general to the specific. Although important, these exemptions must come to be studied only so as to complete the generic view, in a secondary and more detailed approach.

The previous statement signifies that we must try to recollect data related with these tendencies that are relevant to our archaeological finds. This means that, in addition to pitches and scales, we must search for other aspects of sound, more difficult to describe and measure, such as timbre or acoustic characteristics[31]. For example, the search for melodic possibilities on *antaras* can be nonsense, if we take into account the *pifilca* style. Holes in trumpets can be interpreted for timbre purposes, not for pitch alterations, or for both. Ethnographic evidence can broaden our awareness when trying to experiment with the sound, and to interpret the sound of ancient artefacts. This is the

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27 Susan Rawcliffe on Mayan flutes (personal communication), Adje Both on Aztec flutes (personal communication), Statnekov (1978) on Moche flutes, *Chimuchina* musical group on South Andean flutes (personal experience).

28 On the importance of mind-altering plants and culture see Schultes/Hofmann 1982 and Furst 1992. An interpretative relation between music and hallucinogens in: Dobkin de Rios/Katz 1975. For cebil-interpretation see Arenas 1992 and Pérez de Arce 1992.

29 See Th. Götzelt, this volume ###.

30 The work of Schaffer (1994) is crucial for the understanding of the sound components of our cultural world as a whole. This is very important as many of the previously unstudied phenomena, such as ancient architectural acoustics, for example, are so because they do not fit either musical disciplines, or acoustic ones, or the architectural ones, and so are beyond our traditional ways of studying things.

31 A major problem is that related to our methods of recording data. Although outside the scope of this paper, it must be noticed that methods designed to capture, preserve and reproduce sound are parts of western culture, and thus confined to specific cultural norms. As photographic machines capture reality in a way that ressembles western painting and not, to say, Japanese painting, the same can be said of recordings, microphones, speakers and all sound equipment. We cannot capture space-moving sounds, for example, or hear the combination of different orchestras in an aleatory way. Again, the only way to deal with this problem is to be aware of it. Only after we have defined the problem can we try to solve it.

only way to deal with the ever-present interpretative model we have in mind, as an innate template. But, at the end, it will always be an approximation because, as I have stated, our innate template affects unknown aspects of our model description.

Finally, I have find that terminology is a crucial tool to proceed in our studies. We must define organological aspects such as *antaras*, *complex tube*, *siku* or musical concepts as *sonido rajado*, *multi-orchestral polyphony*, *timbre-harmony*. Normally there are previous bibliographical uses of one or more words to define similar archaeosamples, and the normalisation of some of them is preferable. The most important factor here is the definition of each word in our studies. Only by these means can we begin to use the categories as they were hypothetically used in the past. Sometimes these categories are very specific and make little difference in the visible characteristics (such as the *varía poco* concept); sometimes there are differences in the acoustic principles, but few in formal aspects (as in the Nazca clay *antaras* with 'complex tubes' and the similar ones with simple tubes), or the reverse: little acoustical differences but great formal aspects (as between Nazca and San Pedro *antaras*). The use of a special terminology to name them is a crucial tool to articulate our investigation in search of the past *emic* conception of sound.

With these methodological tools we can articulate a perspective of sound properties more appropriate to explain the use, manipulation, articulation, variation and contextualization of other cultures from the remote past.

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