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CONTENTS

| | page |
|---|------|
| Editorial | 3 |
| Obituaries | 6 |
| Philip Bate (1909-1999) | 9 |
| Donald Boalch (1914-1999) | |
| *The 'Fyðill in Fist': Bowed String Instruments from the <i>Mary Rose</i> : MARY ANNE ALBURGER | 12 |
| The 1782 Taskin Harpsichord, Colares, Portugal: BERNARD BRAUCHLI | 25 |
| 'Of the Differences between Trumpeters and City Tower Musicians' - The Relationship of <i>Stadttpfeifer</i> and <i>Kammeradschaft</i> Trumpeters: TIMOTHY A. COLLINS | 51 |
| *A Contrabassophone by Alfred Morton: TOM DIBLEY | 60 |
| A Reconstruction of Talbot's Hautboy Reed: BRUCE HAYNES | 78 |
| *A Further Updated Review of the Dulcians (<i>Bajón</i> and <i>Bajoncillo</i>) and their Music in Spain: BERYL KENYON DE PASCUAL | 87 |
| A Netherlandish Harpsichord of 1658 Re-examined: JOHN KOSTER | 117 |
| **The 'Endingidi' (Tube Fiddle) of Uganda: Its Adaptation and Significance among the Baganda: JAMES MAKUBUYA | 140 |
| *Two Elizabethan Virginals? DARRYL MARTIN | 156 |
| Towards establishing the original state of the three-manual harpsichord by Stefano Bolcioni, Florence, 1627, in the Russell Collection of Early Keyboard Instruments, Edinburgh: GRANT O'BRIEN | 168 |

| | |
|--|-----|
| *The Flutes of Quantz: Their Construction and Performing Practice: MARY OLESKIEWICZ | 201 |
| *The Influence of the Bandora on the Origin of the Baroque Baryton: TERENCE M. PAMPLIN | 221 |
| <i>Sonido Rajado</i> Part 2: JOSÉ PÉREZ DE ARCE | 233 |
| *An Unsigned South-German Harpsichord in the Historisches Museum Basel: SABINE KLAUS AND MALCOLM ROSE | 254 |
| The six early clavichords of Arnold Dolmetsch: their construction and inspiration: JENNY NEX AND LANCE WHITEHEAD | 274 |
| Notes & Queries | 301 |
| * <i>Some Points Arising from a Survey of Wills and Inventories:</i> MICHAEL FLEMING | 301 |
| <i>On the Use of Stretched Scales:</i> KLAUS GILLESSEN | 312 |
| <i>Further remarks on the Galpin Organ:</i> PAULINE HOLDEN | 316 |
| * <i>Evidence for Italian Mother-and-Child Virginals: An Important Document Signed by Onofrio Guarracino:</i> FRANCESCO NOCERINO | 317 |
| <i>An Improvement of the Capabilities of Brasswinds. An Initial Report:</i> PHILIP J. OSTENDORF | 322 |
| Reviews | 329 |
| Correspondence | 335 |
| <i>When is a violino not a viola da braccio?</i> HERBERT MYERS | 335 |
| <i>On Praetorius's Pitch Standard:</i> EPHRAIM SEGERMAN | 339 |
| <i>An Objection to the Scarlatti Chronology of Van der Meer: CARL SLOANE, and a reply by Dr. van der Meer</i> | 344 |
| <i>A Short History of the Cittern:</i> PETER FORRESTER | 347 |
| Authors' Profiles | 350 |

Sonido Rajado II

THE HISTORICAL APPROACH

This is the second part of an article devoted to *sonido rajado*, the sound produced by certain South Andean flutes. The first part (GSJLI, 1998, pp. 17-50) was devoted to its present-day use in Central Chilean traditional ritual orchestras (called *bailes chinos*), with special reference to the acoustic tube that produces this sound (the 'complex tube'). In this second part the archaeological and historical documentation concerning this complex tube will be reviewed.¹

Accounts of archaeological instruments having complex tubes have been published by Gay (1854), Medina (1882), Cornely (1956), Iribarren (1957, 1969, 1971), Lindberg (1959), Grebe (1974), Mena (1974) and others.² They deal with stone or wooden flutes from the areas of Arica to Temuco, covering 2,750 km. of the Southern Andes region including the San Pedro, Diaguita, Aconcagua and Mapuche cultures and their successors, and ranging from 600 AD to the present day. A second group of authors including Schmidt (1929), Izikovitz (1935), Sas (1938), Stevenson (1976), Giono (1975), Rossell (1977) and Bolaños (1988) deal with ceramic panflutes, called *antaras*. Some of the latter have the same type of tube as those from the southern Perú region, including the Paracas and Nazca cultures, from 900 BC to 900 AD. The intriguing thread running through this study is the appearance of the same acoustic device over a period of 2,400 years and in an area of more than three thousand kilometres in length.

Over the years I have carried out research on many instruments in collections in Chile, Bolivia and Argentina, some of them already described by other authors, and many of them unpublished. An overall view of the distribution and possible relationship between them appears in a series of articles (Pérez de Arce 1987, 1988, 1989). In 1992, with Claudio Mercado,³ we investigated the use of the complex tube flutes and *sonido rajado* in present-day rituals in Central Chile, and our conclusions were presented in the first part of this article.

My hypothesis is that *sonido rajado* is the sound resulting from the invention and development of the complex tube. First I will present the outcome

¹In Pérez de Arce 1998, 18 there is a resumé of the pre-Hispanic evidence for complex tube flutes.

²The first three mentioned authors made no reference to the internal configuration of the tubes, but later examination of these instruments shows that they were complex tubes.

³The investigation also included Agustin Ruiz and Milton Godoy, researchers.

of some experiments in which these archaeological instruments were blown, and then a resumé of the results of research into the development and regional variation of the complex tube over time and in various regions.

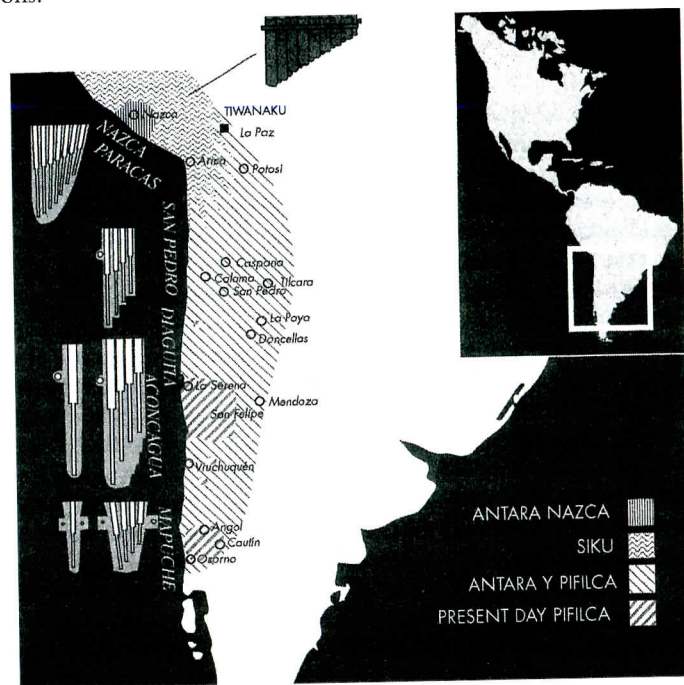


Fig. 1. Map of the South Andean area, showing the different pre-Hispanic flutes cited in this article and the areas with which they are associated, and the remaining pifilca flutes cited in the previous article.

SONIDO RAJADO ON PRE-HISPANIC INSTRUMENTS

With the help of Claudio Mercado, renowned as one of the best *chinos* for sound production, we tried, using pre-Hispanic instruments and with special techniques, to produce the sound known by the *chinos*⁴ as *catarreo*.

On the first occasion when we had the opportunity to experiment with the Aconcagua *antara* in the Museo Nacional de Historia Natural in Santiago, the results were astounding. When correctly sounded, each of the four tubes produced a perfect *sonido rajado* with the *catarreo* vibrating quality.⁵

⁴For a description of the performance technique, see Perez de Arce (1998, p.28). Claudio Mercado joined the *chinos* tradition several years ago and today is much appreciated for the beautiful quality of the sound he produces, and also for the energy and vigour of his interpretation.

⁵For a description of *sonido rajado* and *catarreo* see Pérez de Arce (1998, pp.26, 29, 30.)

Subsequently when we tried the same experiment using the Mapuche, Aconcagua, Diaguita, San Pedro or Nazca instruments, we obtained similar results – well balanced *sonidos rajados*, sometimes with a clear *catarra* quality.

Of course one can obtain a plain 'non-*rajado*' sound from these flutes. Previous studies on some of these instruments, which I and other investigators, brought up with a Western approach to music, have carried out, usually resulted in the production of normal diatonic scales and melodies.⁶ These sounds are known to *chinos* as the '*sonidos botella*' – a defective sound.⁷ By contrast it is impossible to obtain the *sonido rajado* in instruments without a perfectly balanced complex tube, and even in these, only a few are capable of producing the genuine *catarreo* sound. The technique of blowing the instrument is very precise and exacting, involving the greatest lung capacity and physical effort which the players are capable of, and this must be maintained over a considerable period of time, with a combination of extremes and precision that leaves no room for experimentation. Even if we do not know if present day *chinos* play in the same way that their Aconcagua ancestors did, it can be argued that the considerable consistency in the acoustic design of the flutes gives little room for other forms of sound production. In other words, it would appear that the permanence we observe in the archaeological and historic records is but the material evidence for the permanence of a specific sound.

The great amount of knowledge involved in the design, construction and playing of the instrument shows that it is impossible to obtain this *catarra* sound by mere chance. The implication is that the Aconcagua artisans were capable of producing four *catarra* tubes in stone, a technique far beyond our present capabilities, in which the 'know how' required to produce the *catarra* instruments has been lost.

With respect to the possible musical uses of the multiple tubes, our experiments are inconclusive. We have obtained beautiful glissando effects from a number of Nazca instruments, a technique known to Mapuche people, also we have produced good effects using the *chino* technique in alternating two notes, and also melodies have been produced as in the Aymara *siku*.

THE BEGINNING: THE CERAMIC ANTARA⁸ IN SOUTHERN PERU, 900 BC – 900 AD.

The history of the ceramic *antara* has been described by Bolaños (1988) who traces the complex tubes from the clay panpipes of Cabeza Larga, a

⁶See Iribarren (1971), Mena (1974), Pérez de Arce (1988).

⁷Pérez de Arce (1998, pp.31, 38.)

⁸*Antara* is one of the Aymara names for 'panpipes' (a name that originated in Greek mythology) or 'zampoña' (the Spanish name). It has been given by various authors to the Paracas and Nazca clay panpipes. In this article it is used as a generic term for complex tube panpipes made of a solid material (ceramic, stone or wood) which can produce a '*sonido rajado*', as opposed to *siku*, the Aymara name for the simple tube cane pan flute.

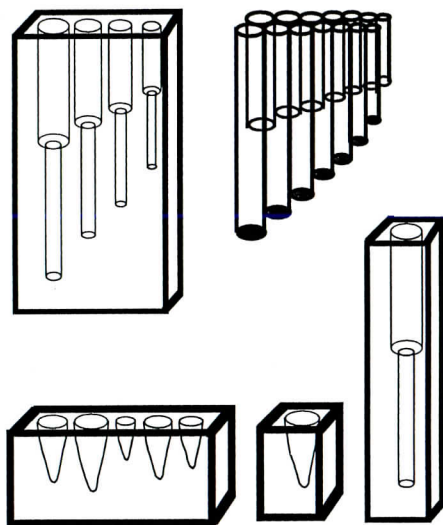


Fig. 2. Diagrammatic illustrations of the various flute types with their vernacular names as used in this article. Upper right: *siku*, pan flute composed of many canes joined together. Upper left: *antara*, pan flute, made of many complex tubes hollowed from a solid stone or wooden block, or moulded in ceramic to form a solid body. Lower right: *pifilca* flute – similar to the *antara* but with only one tube hollowed from stone or wood. Lower left: *piloilo*, pan flute composed of many small conical tubes hollowed from stone. Lower centre: *pinculwe* – similar to the *piloilo* but with only one tube.

coastal site in southern Perú from the Paracas period, c.BC 900. The *antara* appears to be a local derivation from the much older *siku* cane panpipe, that existed at least from BC 5000 in the area of Central Peru. In Paracas times the *siku* extended to Tumaco – La Tolita and other northern Andean cultural areas, while the Paracas *antas* existed in the southern border of this panpipe country.⁹

Complex tubes of this early *antara* have three sections of different diameters: a distal slender closed section, a medial thicker one, and a proximal open tube of medium thickness. They were hand made, each tube modelled separately and then joined, forming an instrument with a typical panpipe 'wing' profile. This *antara* type extended to the Virú culture.

Such instruments continued to exist during the Nazca period (100 – 900 AD) showing a continuity in ceramic, acoustic and musical knowledge that indicates a close relationship between the Paracas and Nazca cultures. Nevertheless, some minor changes occurred: the rounded embouchure was changed to an elliptical one, while the exterior was more polished and dec-

⁹To be precise, in the Southern Andes, Pitrén seems to have been another kind of panpipe, the so called *piloilo*, not related to the *antara*, nor to the *siku* type, see Pérez de Arce (1986).

orated with Nazca polychrome iconography. The flutes have from 2 to 10 tubes, and apparently were played as solo instruments. Nazca musicians also made similar clay panpipes with simple tubes that were produced in different sizes to be played in 'orchestras' of various registers at the octave, the fifth, the quarter tone and the unison.

Studies of the sounds of both complex and non-complex tube Nazca *antas* made by Sas (1938), Stevenson (1968), Rossel (1977) and Bolaños (1988), focused on the scale, or sequence of notes produced by the series of tubes. This approach failed to demonstrate that there was a unique 'Nazca scale' since each instrument produced a particular series of intervals; there were almost no instruments producing an identical scale. These instruments also exhibited different iconography and ornamentation, except in the case of the groups of simple-tube instruments used in an orchestra.¹⁰ Since different scales imply differences in melodic possibilities, it seems that all the visual and acoustic differences acted as clues to specific local origin in much the same way that present day Andean sounds and methods of construction identify the origin of instruments from different villages.

All Nazca instruments demonstrate the great skill of their makers in both ceramics, and acoustics. Although producing different scales, Bolaños (1988, p.48) points out that there is a tendency to organise the intervals in a sequence that produces a natural scale between the 3rd and 16th harmonic. This implies a high accuracy in tuning, especially in the upper register, where the intervals are smaller.

The process of firing ceramic materials produces a reduction in size due to the loss of water from the material. When making acoustic tubes, the reduction in length produces a sharpening of the pitch which is more evident with shorter tubes. To control the final stage of the complete scale, as in *antas*, requires an astounding knowledge of ceramic technology. To this must be added the delicate skill of producing complex tubes, in which the exact relation between the different parts of the tube give rise to its specific acoustic function, making this a near-impossible task. The amount of knowledge and time involved in the production of each instrument indicates that they were made by a specific artisan group, and not by the musicians that played them.

The difficulties in the making of these instruments were no obstacle to the destruction of entire orchestras of ceramic *antas* after they had been played only once during the great *fiesta* (the Andean great ritual celebrations) and then broken up, as suggested by the latest investigations of the Caguach temple in Nazca (Ann Gruszinska, personal communication).

Thus in Nazca times a select group of skilled artisans was dedicated to the production in clay of a very precise type of acoustic instrument, the *antara*. It has been suggested that the 'slip casting' method was invented for the production of *antas* (Dawson 1964). These craftsmen also produced various types of flutes and drums in ceramic materials. The acoustic side of

¹⁰See Bolaños (1988).

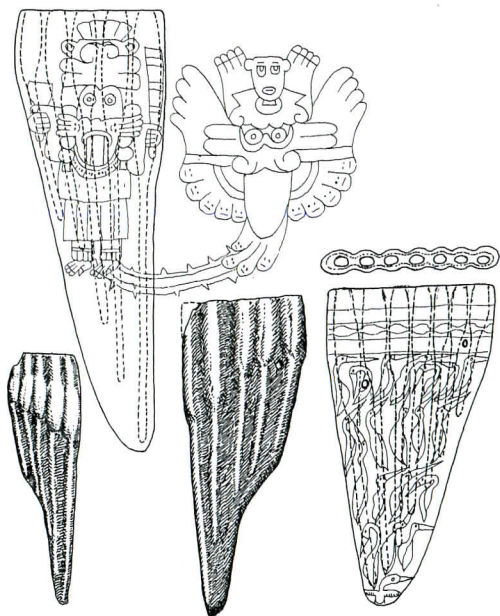


Fig. 3. Ceramic antaras from Southern Peru. Lower left: the oldest Paracas examples – the form is derived simply by the joining together of the ceramic tubes (based on Bolaños 1982, p.36). Lower centre: another Paracas example, 195mm high (based on Schmidt 1929, p.542). Top left: an example of a Nazca antara; the exterior decorated with engraved figures on a smooth surface. The upper part of the interior of the tubes is polished and cylindrical, the middle part is 'globular' and shows marks of rasping, while the lower part is again smooth and cylindrical. Height 198mm. (Museo de La Plata No. 781). Lower right: another Nazca example, with smooth exterior painted with birds grouped in sequences of 1, 3, 5 and 7, and on the reverse, bands and circles (beans?) in sequences of 2, 3, 4 and 5. The detail above shows the embouchure of the tubes with a characteristic elliptical opening, height 194mm. (Museo Nacional de Antropología y Arqueología de Lima, No. 654366/8225).

ceramic technology is also related to a great development in complex polychrome ceramic decoration. Further artisan achievements of the Nazca people include a highly developed technology in the dyeing and wrapping of textiles, and the construction of the great geoglyphs (giant drawings made on the desert) the technology of which has puzzled archaeologists for many decades. So the great acoustic technology in ceramics is but a part of the considerable artisan development in the Nazca world.

It is interesting that it is the plasticity of ceramic materials that enables the Paracas and Nazca people to create their own characteristic sound. Although *sonido rajado* is different from any other sound, in the Nazca culture there exist other dissonant sounds produced by double ocarinas that give a shrill high pitched sound with a piercing, beating quality as a result

of the two instruments sounding at pitches which are within a few Hz of each other.¹¹

So among the great Nazca tradition clay is the proper material for musical instruments,¹² and *antaras* are the culmination of this ceramic development in terms of the complexity involved in their construction. In addition, *antaras* were precious objects, having sacred and secular power: they are found as offerings in the tombs of the rich, and broken instruments form part of ritual adobe constructions. The iconography of these instruments includes the *vencejo* (a kind of bird), the 'head trophy' cult, the feline and San Pedro cactus. All these are signs of shamanic practice in the Andes. Moreover, the San Pedro cactus is a strong psychoactive plant containing mescaline, which is extensively used in Andean shamanism. We are here in the most depurate ritualistic realm of the Nazca people: the great shamans who deal with the feline and the 'trophy head' cult and the sacred cactus.

Something similar occurred in the same period of time in the Moche culture with the *siku*: it developed a great cultural importance, linked with shamanism.¹³ So the Nazca ceramic panflutes represent the southern border version of the broader cane panflute tradition, both to be found at the highest cultural level in the Andes.

The end of the Nazca culture occurred between 600 and 900 AD, when the Wari conquered the area bringing with them a strong cultural change to new ritual concepts linked with the great Tiwanaku centre. The clay *antara* disappeared after an uninterrupted supremacy of a thousand years, and was replaced by the *siku*¹⁴ which has continued there until the present day. It appears that Wari *sikus* have *resonadores* (Rowe 1979), i.e. a secondary row of open pipes that enrich the harmonic spectrum in a way similar to that of the *sonido rajado* but not so harshly – perhaps a case of technolog-

¹¹Museo Chileno de Arte Precolombino pieces N° 2535 and 2536, See also Bolaños (1988, p.28).

¹²This does not mean that the Nazca did not have musical instruments made of material other than ceramic. Bone flutes have been reported, but they seem to occur less frequently in archaeological records. A few cane panpipes from the same area have been recorded, with inverted complex tubes, having the widest section closed at the end. The selection of ceramic as the main material for musical instruments distinguishes the Nazca from any other contemporaneous group, such as, for example, the Moche, who use mainly cane, metal or wood for similar purposes, with only an occasional use of ceramic materials.

¹³Iconography suggests that they use the 'musical dialogue' technique, as present day ones, that implies a great social organisation (Valencia, 1982).

¹⁴This change seems not to be absolute: in the American Museum of Natural History of NY there is a Wari ceramic figurine holding a 4 tube panpipe *antara* type (41.2/8 60-2) (thanks to Mr. Craigh Morris and Sumru Amricanli for this information). Also in Morado Chayuc, Ayacucho some Nazca *antaras* and Moche vessels fragments were found during Wari administration (Bolaños 1988, p.20). The only clay panpipes of the Nazca style, from Cajamarquilla, are technologically inferior (Bolaños 1988, p.40).

ical (and acoustical) development from the complex tube.¹⁵ Long after the time of the Wari, during the Chancay period (fifteenth century), panpipes existed with complex tubes made with two different diameter sections of cane (Bolaños 1988, p.41). There is, however no link between these instruments and the Nazca ones, nor do they seem to be as important in terms of acoustics and sound.

THE SOUTHERN EXPANSION: THE ATACAMEÑO TYPE - 600-900 AD.

While in southern Peru *antaras* vanished as a result of the influence of the new ritual-oriented Wari system, in Arica and Atacama there was a great cultural change due to the influence of the Tiwanaku religious revolution. Between 400 and 1100 AD the great altiplanic metropolis produced a deep influence over local cultures, creating a flourishing of cultural identity. At this time in the Arica and Atacama regions the panpipe was introduced as the main ritual instrument, but while in Arica it was the *siku*, in Atacama it was the *antara* type. This geographic differentiation of the Tiwanaku influence embraced all branches of culture, including music, and ritual and social matters. The different types of ritual instruments brought about a difference in the ritual itself, as reflected in the use of the main ritual objects, the *kero* (a vase for drinking alcoholic or psychotropic liquids) in Arica, while in Atacama the *tableta de rape* (a vessel for holding the psychoactive powder to be inhaled)¹⁶ was used. In addition, other cultural artefacts such as dresses, ornaments, hats etc. were different in the two areas.

I know of only a few Atacameño *antaras*, and unfortunately none of them have supporting documentation. They are of much the same construction as the Nazca *antaras* (a series of complex tubes in a stepped order), but all the formal attributes are changed; the number of tubes is reduced (almost invariably) to 4, and they are made of wood or stone, with a stepped profile and a lateral handle.

There are also some representations of these same *antaras* carved on the *tableta de rape*. They are to be found in the iconography of the area represented by a musician with a round hat with two protuberances as 'ears', holding the *antara* in a typical precise gesture and position. Figure 5 illustrates the details of these representations.

These southern *antaras* have much the same acoustic characteristics as the Nazca instruments, but their outer shape is of a local style. It is very probable that the characteristics of the Atacama *antaras*, including the complex tube, were derived from the Nazca instruments.

The restriction of Nazca scales to one of only 4 notes is possibly the result of the the local use of a scale based on 4 notes which has a long history in the area.¹⁷ The change from ceramic to stone and wood reflects also a local

¹⁵see Perez de Arce (1993).

¹⁶Torres *et al* (1991) have identified this powder as *anadenanthera peregrina*.

¹⁷There are pre-ceramic *kenas* (notched flutes) with 3 holes (four sounds) in Arica and northwestern Argentina (Pérez de Arce 1996).

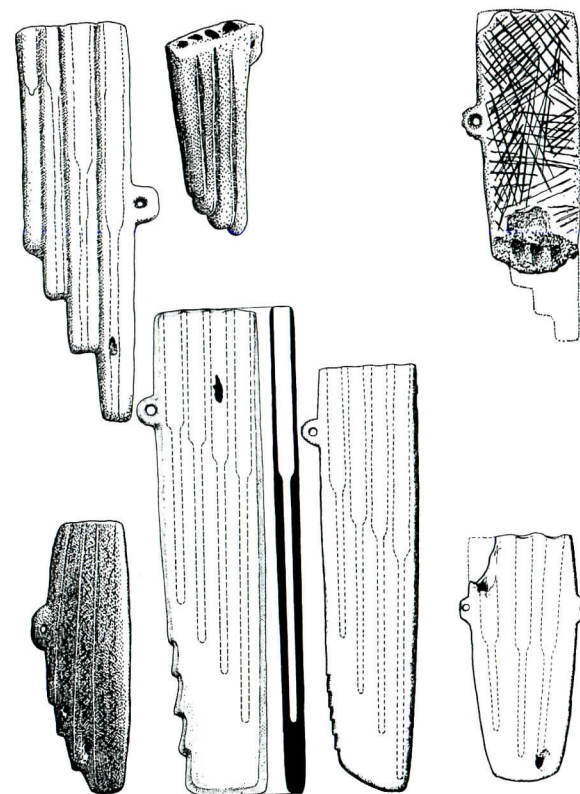


Fig. 4. Stone *Antaras*. Upper left: a late pre-Hispanic example from Potosi made in a greenish stone, showing the 'altiplanic' type with the tubes carved externally in imitation of the *siku*'s appearance. This is probably the prototype form for the stone *antara*, height 200mm (Museo Universitario de Sucre No. 318.02.679/2805(49). Upper centre: a late pre-Hispanic example from Tilcara of the same type. (Based on Ibarra Grasso 1971, p.674). Lower left: a Diaguita (1200-1470 AD) example from La Serena. The tubes are shown only by a faint line on the exterior, and the overall surface is smooth, height 225mm (Museo de La Serena No. 7.599). Upper right: this example from Mendoza has a Diaguita form, but a Mapuche style with incised ornamentation, 135mm high (based on a gesso copy from the D. Sugo coll. of San Juan). Lower centre: a c. 14th-century Aconcagua example, made in a beautiful polished red stone, from San Felipe. The exterior demarcation of the tubes has disappeared. The section to the right of the figure shows incredibly fine stone work, 327mm high (Museo Arqueológico de Santiago No. 0132). Lower centre right: another Aconcagua example, with the same stylistic characteristics as the previous instrument, and made in the same red stone. 285mm high (Museo Nacional de Historia Natural de Santiago No. 3.516). Lower right: a Mapuche example from Osorno with a rounded form, without scaled profile but with two hanging handles. Made in a clear grey stone. 157mm high (Museo de Angol No. 1426).

preference for these materials by Atacameño artisans as the main medium for the production of musical instruments. Thus instruments were not made by modelling and baking clay, but by the use of stone drills and carving tools.¹⁸ The external appearance of the Atacameño *antara* is much like that of the *siku*, having a stepped profile and carefully carved parallel tubes, while the addition of a handle to enable the player to hang the instrument around the neck reflects an ancient local tradition.

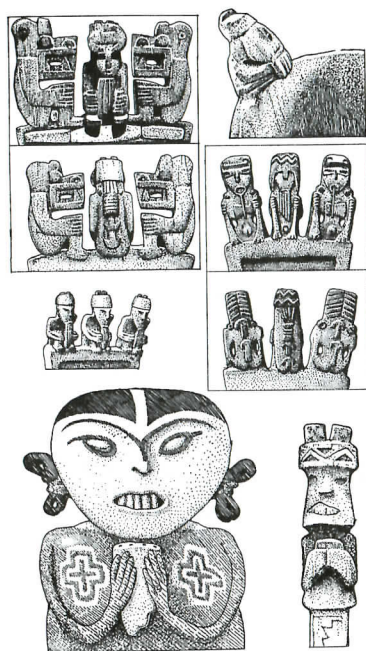


Fig. 5. The antarista representation. Upper right: a carved seated musician, from Arica, on a wooden kero (vase) San Miguel (1000-1100 AD). Since no antaras have been found in Arica, the instrument is probably a *siku*, however the four tubes and the position of the musician reflect a common tradition with the *antara*. Upper left: a tablet of rapé from Caspana, showing the musician and two feline-human accompanists (detail of front and back), Museo Arqueológico de San Pedro de Atacama). Middle right: another tablet of rapé probably from San Pedro showing variations of the same theme: the musician is flanked by two women from whose mouths hang a hatch (Commercial Museum of Philadelphia). Middle left: another tablet of rapé from La Paya showing three musicians (based on Ambrosetti, 1907, p. 124). Lower left: a polychrome ceramic instrument from Santa Maria (1000-1500 AD) played by a woman (?) (based on Aretz 1946, fig. 14, and Gonzales 1977, p. 355). Lower right: a wooden spoon from the Mendoza region, with the same musician on top (D. Sugo Collection, San Juan).

¹⁸Balbuena (1980) gives some hypotheses about the drilling techniques used in these instruments, which are the same as I observed.

It seems that the *siku* and *antara* traditions were slowly diffused through Tiwanaku culture to Arica and Atacama. It is possible that both existed in the Tiwanaku region, but if any cane *siku* ever existed, there is no trace of it in the archeological records, and unfortunately we lack precise chronological data for any of the three Bolivian plateau panpipes that I know. All of them correspond to the same Atacameño *antara* type; one housed in the Museo de Oruro (no number in the catalogue) and another in the Museo Universitario de Potosí (318.02.6791), and the third in the Musée Du Homme, Paris (08.23.30).¹⁹ Berenguer - Dauelsberg (1989: 173) suggests that the panpipe is one of the emblematic signs of the Tiwanaku *kuracas*, but he is not clear whether it represents the *antara*, the *siku*, or both. It is interesting to note that even today the earlier geographical distribution of these instruments is still maintained; the *siku* in the great northern Andean region, the *antara* in the southern border country.

The Atacameño *antara* is also of great ritual importance linked with feline and head trophies. The *antara*, the feline, the trophy heads and the *sacrificador* are associated with shamans and the taking of *vilca*, a psychoactive plant, an important ritual element. It is thought that in Atacama there were Tiwanaku shamans, who brought with them spiritual knowledge, with precise ritual formulas and signs from the mythical city of the sceptered sun-god. Amongst the most precious ritual artefacts, is the *tableta de rape* (used to snuff *vilca* powder) which contains important iconography about the local cultural cosmography. Part of this iconography is the previously mentioned *antara* musician, in which the *antara* acts as the central piece of the entire representation. Whilst almost all the musical instruments found in San Pedro have a close relationship with *tabletas* and the other objects of the *vilca* snuff equipment (tubes, mortars, etc.),²⁰ only trumpets and *antaras* are represented on them, the *antaras* being more common than the trumpets.

The *sacrificador* is, a mythical personage of ancient origin, normally to be found on Atacameño ritual artefacts, and shown with a sacrificial axe in one hand and a severed human head in the other. Sometimes he is shown blowing an *antara* in one hand with either a human head trophy or an axe in the other hand. All this points to the high status accorded to the *antara* in local cultures.

To sum up, there is clearly a tradition linking the Atacameño *antaras* with the Tiwanaku culture in which the *antaras* have become the main musical instrument in Atacama.

THE SOUTHERN EXPANSION, 1200-1400 AD.

Traces of the use of *antaras* can be found in the south of the region on both sides of the Andes. Scarcity of material, however, makes it difficult to assign

¹⁹Kerejazu Lewis (1983, p. 151) cites a metal figurine 70mm tall holding an *antara* of 4 tubes with one hand and a drum in the other, but this seems to be absurd, because the drum must be held in the same hand as the *antara* to be beaten by the other hand.

²⁰This relationship is referred to in the context of burial offerings as shown in the excavation notes of Padre Le Paige (Pérez de Arce, 1992)

definite dates for the period when the *antaras* were used, but it seems likely that it was in the later pre-Hispanic period, before the arrival of the Incas. The Atacameño *antara* including its representation on vilca complex artefacts is found on the eastern side of the Andes, from Jujuy to Mendoza and appears as an expansion of the Atacameño complex rituals, whose main sonic component is the *antara*.

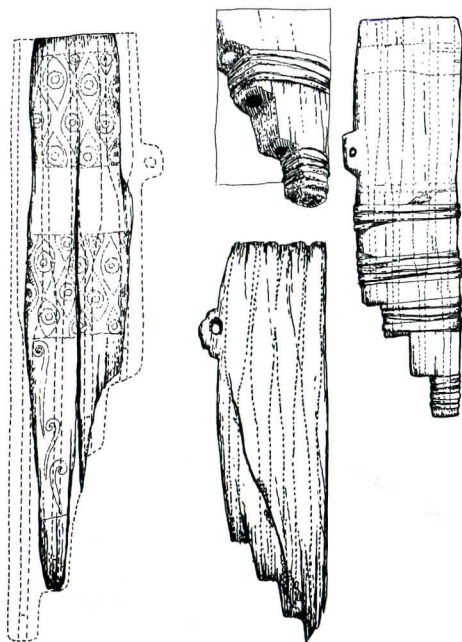


Fig. 6. Wooden antaras. Upper left: a beautiful, though much damaged, example from Doncellas. 210mm high (Museo Etnográfico de Buenos Aires No. 43.1269). Upper right: possibly from San Pedro, the body is wrapped with hide strips. The detail depicts the lower part of the tubes showing the original wooden plugs covered with resin (as in modern instruments) that all the others have lost. 272mm high (MNHM not numbered in the catalogue). Lower centre: Diaguita (1200-1470) instrument from La Serena, a zone in which archeological wooden specimens are almost unknown because of the climatic conditions. Some remains of resin used to fill cracks are still present. 278mm high (Museo Arqueológico de La Serena No. 1530).

On the western side of the Andes, the *antara* reached the Norte Chico during the Diaguita middle period (1200-1400 AD). The acoustical characteristics (4 complex tubes in descending order) are maintained almost unaltered, but the exteriors show a more rounded profile, according to Diaguita stylistic shapes and standards. Although organic material has disappeared, due to climatic conditions, thus depriving us of evidence of wooden ritual objects connected with psychoactive plants (tabletas or tubes), we have some evi-

dence of the Atacameño *antara* iconography—the same personage, identified by the hat and belt, appears as on various ceramic and bone artefacts.

During this period a new type of instrument, called the *pifilca* appeared.²¹ It is a development of the four complex-tube *antara* into one single tube, but maintaining all other formal characteristics: size, form, type of stone, etc. While the *antara* appears as result of the extension of the Atacameño – Tiwanaku tradition, with only minor changes in the exterior style, the *pifilca* stands as a local variation in its musical properties also. Unfortunately we do not know what musical or ritual uses were common to both the *antara* and the *pifilca*, or for that matter those which were different.

Once the instruments had spread to Central Chile, probably in the Aconcagua final period c.1400 AD, both the four-tube *antara* and the one-tube *pifilca*, while maintaining their acoustical characteristics, increased in

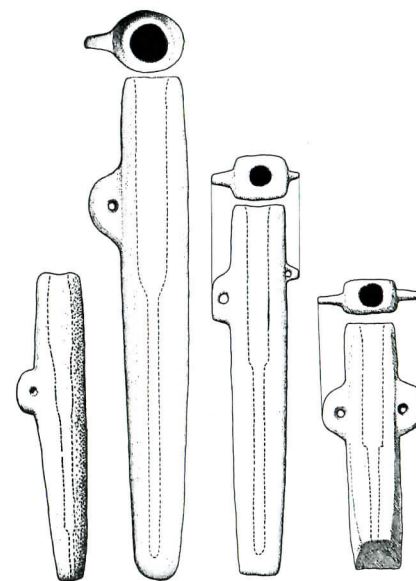


Fig 7. Stone pifilcas. No wooden pifilcas have survived because of the climatic conditions. Extreme left: a Diaguita (1200-1400 AD) instrument from La Serena, made in black lava, 210mm high (Museo Arqueológico de La Serena No. 1529). Centre left: an Aconcagua (900-1400 AD) instrument from Vichuquen showing the style of these bigger instruments, with a carefully polished exterior, 280mm high (Museo Nacional De Historia Natural de Santiago No 3806). Centre right: a Mapuche (1400-1800 AD) instrument from Angol with the two handles characteristic of this tradition. 740mm high (Museo de Angol No. 75.9.52). Right: another Mapuche instrument from Cautin. 206mm high (Ruperto Vargas Collection, RV88).

²¹*Pifilca* is the Mapuche name for the instrument. We will use this as a generic name for this type of instrument, as compared with *siku* and *antara*.

size, with a more rounded body and more stylised proportion. The formal craftsmanship of the stone *antaras* had by then reached its zenith. There are 2 well-preserved Aconcagua *antaras*, one in the Museo Nacional de Historia Natural and the other in the Museo Arqueológico, both in Santiago, plus some fragments of *antaras* and *pifilcas*. All of them are made in a beautiful red stone polished to a marble quality. They represent some of the finest stone objects of the southern Andes, light, gentle to handle, and easy to sound, giving a perfect balance of sound and form. Among the objects from this culture, *antaras* and *pifilcas* are the most developed technologically and artistically.

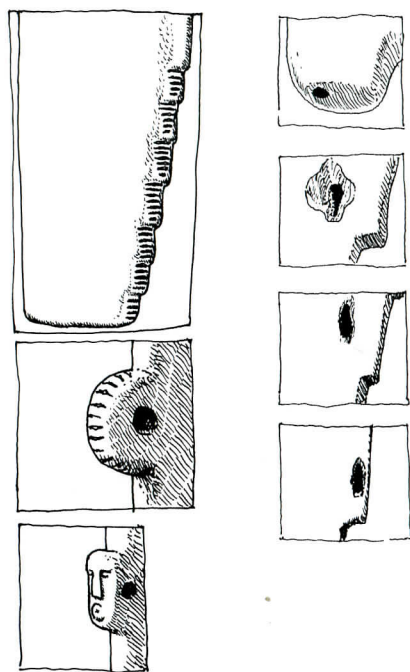


Fig. 8. Details from certain *antaras* showing some aspects of the cultural context in which these instruments were used. Upper left: the lateral seven steps of the Aconcagua instrument (Museo Arqueológico de Santiago No. 0132) has a number of incisions grouped in series of 4, 5, 6, 7, 5, and 4, and the handle (shown in the lower drawing) has 16 incisions. This mathematical series is reminiscent of the Nazca example in fig. 3 (lower right), and is consistent with the traditional music preserved today in the area, in which complex mathematical structures are important. Lower left: a wooden *antara* from Calama (c.900 AD) with a human face carved on the handle with the remains of a blue paint. The heads, like the hatches, are symbols related to the sacrifice god. 260mm high (Museo de Calama – not numbered). Right: four details from a Diaguita instrument showing the intentional openings of the tubes, perhaps to 'silence' them after the death of the owner.

The only *antara* excavated from the Bellavista cemetery (San Felipe) comes from a tomb, whose placement, context and dimensions signify that it is more important than the rest. The head of the man rests on the instrument. This evidence also shows that the Aconcagua *antara* was considered to be among the objects of higher status.

From Central Chile to Temuco both the *antara* and *pifilca* continued to develop unaltered acoustically, but showing new influences of regional cultures in their exterior design. They became shorter, not so stylised as Aconcagua ones, with a round profile and two lateral handles that transformed their previous asymmetrical profile into a symmetrical one. The *pifilcas* are much more common than *antaras*. All these changes reflect the influence of the local ancient traditions of *pinculwes* and *piloilos* on the single and multiple tubed stone flutes, those with one tube being the more common.²²

In summary, from the Bolivian Plateau, Atacama in Northwest Argentina to the south of the region we find the *antara* universally used as part of a new ritual, formerly based on Tiwanaku culture. The acoustic principle of the instrument remains almost unaltered, and sociologically associated with persons of high rank, linked with shamanism and local power. However it also adapts successively to the Diaguita, the Aconcagua and the Mapuche. A version of the *antara* with one single tube also is found from La Serena to Temuco though we do not know what differences existed between these two in terms of ritual or musical use.

THE INCA AND EUROPEAN CONQUEST, 1550–1700 AD.

The *antara* continued to exist in all the areas from Atacama to Temuco until it disappeared from the scene completely, perhaps with the Inca expansion, c.1500, or perhaps as a result of the drastic ritual prohibitions instated by the Spaniards from 1570 onwards.

The *Pifilca*, on the other hand, survived in all its former territories, from La Serena to Temuco. We do not know why the *antara* came to an end while the *pifilca* survived. Perhaps the *antara* were so linked with the ancient ritual that they could not survive when those rituals were abolished by the Spanish conquistadors, while the *pifilca*, as a relatively new invention, was more adaptable to a ritual change, becoming part of Christian feasts in the Norte Chico and Central Chile. But, as a counter argument, the Mapuche, who suffered few cultural modifications, also lost the *antara* while maintaining the *pifilca*.

Pifilcas have changed little from pre-Hispanic times. Ancient ones are made of stone while modern ones are of wood, but as no evidence of wood has survived due to climatic conditions in the area, it is most probable that wooden *pifilcas* were also used in the past, as happened in the northern region. The loss of the difficult stone carving technique can be explained as part of the general decline of ancient craftsmanship in Indian cultures. We

²²For a description of this instruments see Perez de Arce (1987).

lack any chronological data for surviving instruments which would enable us to trace the evolution of this instrument till modern times. Written sources containing information about the *pifilca* are scarce and obscured by ethnocentric interpretation. For Europeans, ancient Amerindian rituals were viewed as demonic and all aspects of this culture were viewed as 'anti cultural'. This European perception of the Amerindians, shaped the views of scholars of Indian culture and its heritage until very recent times.

The Mapuche resisted Inca colonisation in the Maipo River area in the fifteenth century, and also the Spanish conquest in the Bio Bio region from the sixteenth century until the end of the nineteenth century, when the Chilean army concluded the so-called *pacificación de la Araucanía* process. In the sixteenth century the Spanish chroniclers Alonso de Ercilla, Alonso de Góngora Marmolejo, Pedro Mariño de Lobera and Pedro de Oña included the *pifilcas* in their classification as the 'barbaric instruments' of the Mapuches.

While we lack useful descriptions of the instruments, we have a well documented history of their names; in 1606 Valdivia names the *pivillcahue*, a kind of flute, among other instruments (reference to pages cannot be given since they are unnumbered). During the next century the Mapuche instrument was spelled *pivilca* or *picullhue* (Febrés, 1764, p.598, Havestadt, 1777, p.302), and Frezier mentions wooden *pifilcas* in 1716, p.8.

Shortly after the Spanish conquest, in the sixteenth century, Central Chile and Norte Chico lost their social autonomy and local cultural heritage, and were forced to adopt the Spanish Catholic culture. But, although this change was more drastic than previous ones (Tiwanaku, for example), it did not alter the *pifilca* significantly. Pre-Hispanic dance and music were used by catholic priests as useful tools to convert the Indians, thus permitting the continuation of the *pifilca*. Colonial authorities attached great importance to catholic processions and the organisation of these processions promoted a variety of *cofradías* representing different social strata in which the Indians were represented, with their ritual flute orchestras.

The first mention of the Central Chile *pifilca* comes from Alonso de Ovalle, a Jesuit priest, who writes about the processions held in Santiago in the seventeenth century, where the Indians from each village came with banners and 'noise' of flutes which was so loud that it was necessary for them to play first 'so as to hear the ecclesiastical music'.²³ This quotation notes the differentiation between the 'noise' of Indian flutes as against that of the ecclesiastic music. It also suggests that there were very many flutes. This scene fits in every respect with present day *chinos* dissonance aesthetics, dissonance harmony, musical form, dancing and polyphonic competition (Pérez de Arce 1998, pp.25-46).

²³ *acuden los indios de las comarcas que están en las chacras, (que son como aldeas, a una y dos leguas de la ciudad), y trae cada parcialidad su pendón, para el cual eligen algunos días antes el alférez, y este tiene obligación de hacer fiesta el día de la procesión a los demás de su aillo. Es tan grande el número de esta gente, y tal el ruido que hacen con sus flautas y con la vocería de sus cantos que es menester echarlos todos por delante, para que se pueda lograr la música de los eclesiásticos y cantores y podamos entender para el gobierno de la procesión'.*

ETHNOGRAPHICAL DATA, 1700-1900 AD

From 1700 to the present day we have more descriptive bibliography, though still written from a European standpoint, and usually pejorative towards the local culture.

With respect to the Mapuche, the bibliography has added little information. For Juan Ignacio Molina (1795, p.124) Mapuche music 'barely deserves this name'. Poeppig, between 1826 and 1829 says that Mapuche people 'lack musical fondness' (1960, p.404), and Domeyko in 1845 adds they are an 'anti musical people' (1971, p.83). Tomás Guevara (1927, p.373) writes of 'poor music and discordant instruments', while Ernesto Wilhelm de Moesbach (1976, p.252) points to the 'lack of spiritual freedom and creative imagination needed to make music'.²⁴

The name of the instrument is written in various ways, according to different authors. This probably reflects the problems of transcribing Mapudungun more than differences in pronunciation (Pérez de Arce 1998, p.20, n.7).

From Norte Chico and Central Chile the written sources are more frequent, eloquent and descriptive. They describe almost the same *fiestas de chino* we have today, save minor changes in the spatial positioning of the musicians. In the nineteenth century, Medina (1882, p.302), Domeyko (1843, p.11) and Guevara (1899b, p.1016) give detailed descriptions of the Andacollo feast where local *chino* Indians, in local costumes dance and sing in an old idiom they have long forgotten.

Both Mapuche and *chino* types of *pifilca* are very similar to those of their ancestors, save that today there are no stone instruments; they are bigger and all of them incorporate the symmetric two-handle Mapuche style.²⁵

In Pérez de Arce (1998, pp.19-22) there is a survey of present-day *pifilca* traditions. To sum up: the surviving complex tube flutes are the *chinos* and the Mapuche *pifilcas*, both separated in time and place, and both sharing a number of basic principles dating from pre-Hispanic times. They are ritual instruments played with the *sonido rajado* technique by pairs, alternating in a musical dialogue.²⁶ The surviving realm of the *siku* extends from Atacama to the north, isolated from the *pifilca* and the *chinos*. The *chinos pifilca* and the aymara *siku* are organised into orchestras that produce dissonant chords and many orchestras playing together create a complex polyphonic system which brings about a varying sound dependent on the competence of the players as they move in space.²⁷ Both share similar musical and ritual systems, similar sound aesthetics, organisation of the orchestra, movement and spatiality (see Valencia Chacón 1982, Izikowitz 1935, pp.378-403, Langevin 1992). The differences lie in that the *sikus* music is based on tonal melodies, purer sounds and more complex musical organisation of the

²⁴For bibliography on the Mapuche *pifilca*, see Perez de Arce 1998, p.20, n. 9.

²⁵See Pérez de Arce 1998, fig. 1.

²⁶An Andean 'hoquetus' technique, see Valencia (1982).

²⁷For *sikus*, see Flety/Martínez (1992), for *chinos* see Pérez de Arce (1998, pp.31-45).

orchestra, while the *pifilca* produces a greater development in the timbre of the sound, though organised in a simpler way, with no tone or melody, and simpler musical organisation of the orchestra.

DISCUSSION

The main musical characteristics shared by the *sikus* and *pifilcas* date from pre-Hispanic times. Differences in the local cultures have been maintained; Norte Chico *chinos* are related to the Diaguita while Central Chile *chinos* are related to the Aconcaguas, and southern Chile Mapuche to their ancestors. All of them can be assumed to be the direct descendents of pre-Hispanic local cultures with a certain amount of other Indian and European traces.

The acoustical structure of past and present complex tube flutes shows a great consistency, including the precise craftsmanship linked to the reproduction of the *sonido rajado*.²⁸ The universality of the complex tube, almost without variation over millennia, proves that this aspect of the knowledge of how to make these flutes has been passed through many generations to the present day. However, part of the 'know how' has been lost, and we can assume that this knowledge was more complex in the past than now, especially with regard to the Nazca specialists.

All evidence points to the permanence of the *sonido rajado*, including the best of it represented by the *catarra* sound, from Paracas *antara* to the present day *pifilca*. Archaeological *antaras* and *pifilcas* represent the most developed musical instruments of their time, and we can surmise that their sound was as depurate as their physical form, while *catarra* represents the most pure *sonido rajado*.

The present day musical structures and aesthetics are seemingly also of ancient origin. As to the ritual context, in the past it was shamanic and today it is partially a catholic one. We can ignore the musical or aesthetic differences (if any) between the use of *pifilca* and *antara*.

It is surprising to discover that the most developed tradition of the *sonido rajado* occurs with little changes through 500 years of foreign domination in Central Chile, a region characterised by the loss of Indian culture from the very first encounter with Europeans because of its proximity with the capital city, Santiago. The explanation of this lies in the absolute independence of the aesthetic and ritual *chino* and the urban people of European-oriented culture. From Alonso de Ovalle in the seventeenth century to the twentieth-century authors this was not music, but 'noise' or 'animal sounds' both being non-musical, and even non-human sounds. Being not worthy of interest to the global culture, it became isolated, though all were immersed in it.

²⁸ Apart from the general configuration of the tube, some important details for modern artisans such as the interior smoothness of the tubes and the junction of the two sections, have been noted by Dawson (1964, p.108) for Nazca instruments and confirmed by me on southern Andes prehispanic instruments.

The *chinos* have a clear distinction between their rituals and those of the Catholics. Because, historically, integration was forced upon them, and because they were powerless to oppose them, they accepted the norms imposed by the Catholic powers and administration. However, where they were free to do so (which was rarely the case) they proceeded with absolute independence. This implies a double standard; for the catholic authorities, first the *chinos* performances were a local variant of the dominant catholic practice, while *chinos* viewed it as an ancient, vernacular cult forced to fit the catholic model.²⁹

At our first approach to the *chinos* we sensed that it was an ancient, fragile, but magnificent pre-Hispanic tradition close to its end. Now, with the perspective of the archaeological, historical and ethnographic approaches, we know it is a fierce tradition, fully alive, ever changing but at the same time very stable.

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²⁹ This is a complex theme, as treated by Ruiz, (1994), Mercado, (1993). See also Pérez de Arce (1998, p.24).

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