Bone Craft Production at Chavin de Huantar, Peru

Senri Ethnological Studies 112: 89–106 ©2023
New Perspectives on the Early Formation of the Andean Civilization: Chronology, Interaction, and Social Organization
Edited by Yuji Seki

4. Bone Craft Production at Chavín de Huántar, Peru

Silvana A. Rosenfeld
High Point University

1. Introduction

Chavín de Huántar (Ancash, Peru) is well known in the Andean archaeological literature for its iconography and complex architecture but less is known about the production of artifacts despite the abundance of elaborate worked bones found across the site throughout its long excavation history (e.g., Burger 1978; Lumbreras 1993; Mesía Montenegro 2014; Miller and Burger 1995; Rick 2006, 2017; Rosenfeld and Sayre 2016; Sayre 2010). Who were the craft producers at Chavín de Huántar? How and where did they produce their bone crafts? This chapter presents data on the manufacture of bone artifacts at Chavín de Huántar. In environments where bone preserves well, worked bones can be a valuable source of information. While studies of bone artifacts have become more frequent in recent years in the Old World (e.g., Averbough and Choyke 2012; Backwell et al. 2008; Choyke 2010; Henshilwood et al. 2001) and in North America (e.g., Emery 2008; Emery and Aoyama 2007; Moholy-Nagy 2004), the study of bone artifacts remain understudied for many central Andean sites in South America (but see Bélisle 2019; Miller 2003; Moore 1999, 2013; Webster and Janusek 2003). Bone artifacts can be analyzed to discuss specialized households and activity areas through the patterns of manufacture, use, distribution, and discard across site and time. The amount and variety of bone artifacts excavated at Chavín de Huántar and other contemporaneous sites make the study of the raw material sources, manufacture, and circulation, an important venue to better understand social and economic trends during Andean Formative times.

2. Chavín de Huántar

Chavín de Huántar is an important ceremonial site in the north-central Andes of modern Peru. Chavín is famous for its graphic art and its monumental architecture that includes cut-stone architecture, sunken plazas, and complex gallery and canal systems. The site was initially built probably before 1200 BC and its expansion continued until around 500 BC (Kembel 2008; Rick 2006). The site has three general areas: 1) Monumental zone (stone buildings, sunken plazas, and internal galleries), 2) West Field Area, and 3) La Banda Area. While there is evidence and arguments to support that the people who occupied Chavín were involved in ceremonial and ritual activities in this temple complex

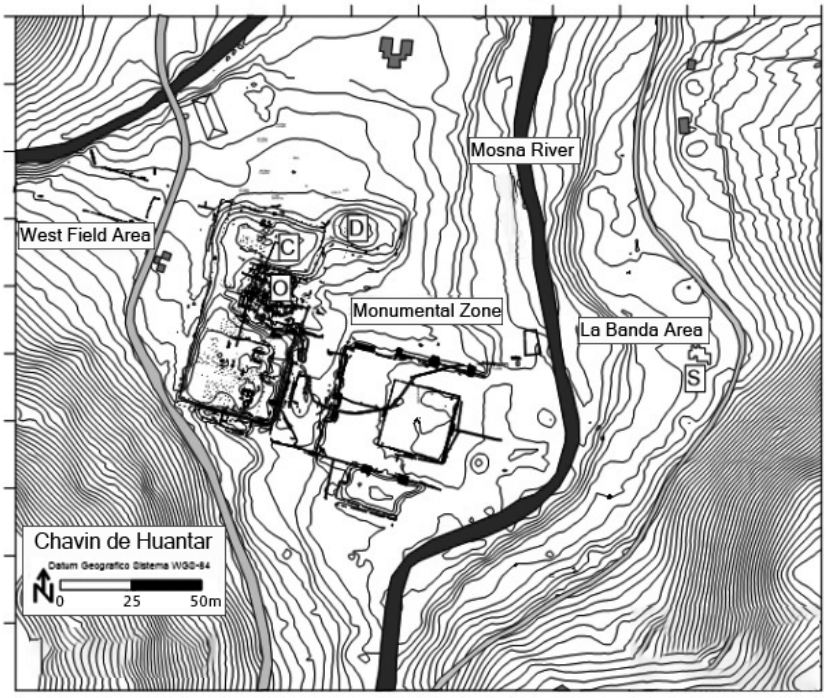

Figure 4-1 Chavín de Huántar. C = Building C, D = Building D, S = Area excavated in La Banda in 2005. (Map courtesy of John Rick)

(e.g., Burger 1995; Lumbreras 1993; Mesía Montenegro 2014; Rick 2006), much less is known about daily routine activities and how these changed through time. In an attempt to compare the center and the periphery of the site, I will describe and discuss the worked bones excavated from the surroundings of Building C and those from La Banda. Building C was chosen because is the location with the highest frequency of bone artifacts in the monumental area and with secured Chavín contexts. The La Banda sector, across from the Mosna River, has no monumental architecture but extensive Chavín material (Figure 4-1). Based on the analysis and comparison of bone artifacts excavated from two distinct sectors at Chavín de Huántar I argue for the dynamic aspect of bone craft production and use throughout the Chavín landscape. Specifically, while the Chavín levels next to Building C in the monumental zone show a preponderance of implements for textile and ceramic production, the non-monumental sector of La Banda has evidence of a careful production of particular and elaborate material such as camelid bone beads, bird bone tubes, and sea mammal bone ornaments possibly manufactured to be used inside the temple area.

2-1 Monumental Zone - Building C

The bone artifacts associated with Building C (EC for its initials in Spanish) are from the deposits excavated next to the Northeast exterior wall of the building labeled as Building

C Area 1 (units A1−1 through 9, Figure 4-2). This is an elevated ramp leading to the façade of Building C, west of Building D. The upper levels of this ramp and corridor had post-Chavín occupation but the deeper levels (level 10 and deeper) are securely associated with Chavín times given the architectural and ceramic evidence from the Black and White phase, (850−550 BC cal) (Rick et al. 2010). During Chavín times, according to the architectural analysis, this ramp and corridor between Buildings C and D were probably used to restrict and cut access to the temple area through the building of several walls to decrease the width of the access to the main temple area to about 1 m (Rick and Bazan 2015). This area may have been the entrance to the monumental zone. The material associated with these Chavín levels includes undecorated and decorated ceramic fragments, animal bones, burnt clay, lithic instruments, one metal pin (possibly gold), chrysocolla beads, serpentine, hematite, sodalite fragments, marine and terrestrial shells, and many bone artifacts that I discuss below. These levels may have been ritual deposits as they appear well organized in terms of the material and include a variety of items as mentioned above (Rick and Bazan 2015). At the bottom of these levels was a small well-preserved surface canal draining toward Building C (more detail on the architecture and chronology of Building C and its surrounding areas can be found in Rick and Ortiz, this volume).

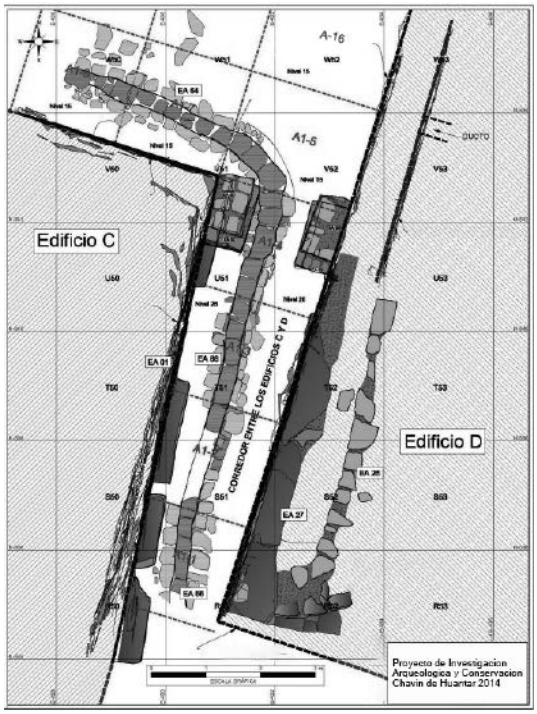

Figure 4-2 Plan of Building C, Area 1, Chavín de Huántar. (courtesy of John Rick)

2-2 La Banda Area

Across the Mosna River from the main temple area of Chavín is La Banda sector (Figures 1-3 and 4-1). Excavations in La Banda uncovered a domestic settlement that included 32 excavation units of 2 m by 2 m each with several rooms and a well-preserved stone patio (Figure 4-3). The patio group revealed living spaces and a workshop located off the patio. The workshop covered an extension of at least 4 square meters, and it included objects, such as artifacts manufactured on shells and bones. These artifacts were found surrounding a stone hearth feature that had an air duct leading into it. This feature may have been used for heat-tempering materials as well as heating water and other elements used to transform the raw materials encountered in the unit. The La Banda occupations revealed a diverse array of animal bones (Rosenfeld and Sayre 2016), black polished stamped ceramics, elaborate lithic technology, and bone artifacts. Materials of local and non-local origin were recovered in La Banda, including marine shells and coral from the Pacific Ocean (Sayre and López Aldave 2009) and worked bone manufactured on sea mammals from the Pacific Ocean (Sayre et al. 2016). Out of the 152 bone artifacts recovered in this sector in La Banda, 105 (69%) were found in one quad K13 in different stages of manufacture, suggesting the presence of a workshop area (Sayre et al. 2016). Below I will discuss the artifacts in detail.

The dates from this portion of La Banda are from the same period as the height of

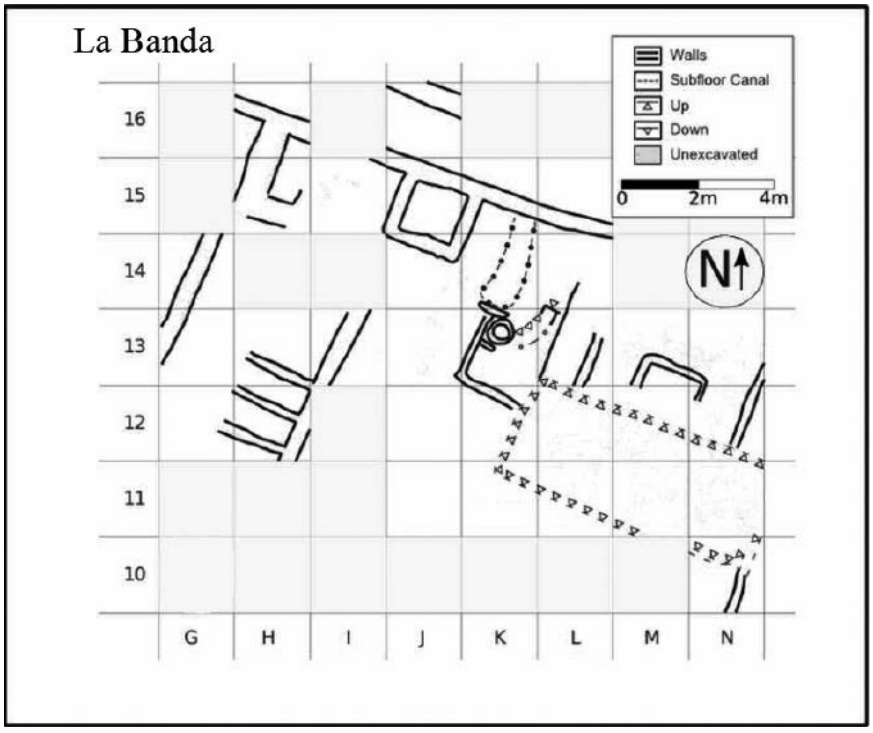

Figure 4-3 Plan of La Banda sector, Chavín de Huántar (modified by N. Rader)

temple activity in the monumental zone, 900–500 BC (Rick et al. 2010; Sayre 2010). The six radiocarbon samples from these excavations in La Banda, all run by Beta Analytic AMS standard delivery, overlap significantly and the mean date is cal BC 755 (Rick et al. 2010: 100–101; Sayre 2010). It appears that this portion of La Banda area was built and occupied over the course of a limited number of years.

3. Methods

Bone tools were identified in the field at the trowel's edge or at the screen. All deposits were passed through a ¼ in mesh screen during excavation. Additional objects were identified when bone remains were sorted and weighed in the laboratory. All the worked bones excavated from both sectors (La Banda and Building C, Area 1) were catalogued in File Maker and Excel sheets and they were also photographed. Location, size and main characteristics, including taxonomic and anatomic determination when possible, bone color, and cut marks were recorded for each artifact. Taxonomic and anatomical identification was primarily conducted using osteological atlases (Altamirano Enciso 1983; Gilbert et al. 1981; Pacheco et al. 1986) and reference collections. A 10x hand lens was used to record modification. The material described in this chapter is the bone artifacts recovered from excavations carried out until 2014.

4. Analysis and Results

The total amount of artifacts identified in La Banda and Building C is two hundred and sixty. They are somewhat evenly distributed between the two sectors, with one hundred and fifty-two (58%) recovered in La Banda and the remaining recovered from Building C, Area 1.

4.1 Selection of Raw Material

Most of the artifacts were manufactured on camelid bone, but some implements were made on deer, canid, sea mammal, bird, and rodent bone (Table 4-1). While the overwhelming majority (89.6%) of the artifacts in this Chavín sample were crafted on

Table 4-1 Bone artifacts by taxon

	Chavín de Huántar	
Selection of raw material	Building C, Area 1	La Banda
Camelidae	106	127
Cervidae	1	4
Cetacean	0	2
Bird	0	18
Canidae	0	1
Rodentia	1	0
Total	108	152

(produced by Silvana Rosenfeld)

camelid bone, La Banda sector shows more animal species diversity (five taxa) than Building C (three taxa). In this sense, it is interesting to note that only in La Banda we found artifacts made on fox, bird, and sea mammal bones.

The two most spectacular bone artifacts found in La Banda sector at Chavín de Huántar are two polished disks and a carved triangle. Recent isotopic analysis (Sayre et al. 2016) indicated that these large artifacts found in the sample were made on sea mammal bone from the Pacific Ocean, probably a cetacean or a large pinniped (see more detail below). The artifact crafted on a canid bone from La Banda is an ulna with three perforations close to the olecranon. Since there is no strong evidence yet to argue for the presence of domestic dogs at Chavín, the worked canid ulna is probably from the local Andean fox (*Lycalopex culpaeus*). The artifacts on birds are mostly tubes (see more below) made on long bones. The artifacts crafted on bird bone are mostly modified diaphysis with cut and smooth edges, in the shape of tubes. All the bird bones appear to be from the same type of bird, most possibly the local tinamou (*Nothoprocta* spp), a ground-dwelling and shy bird. The artifact on rodent bone is a broken tube possibly on tibia diaphysis that was burnt and has at least one smooth edge. Due to size and morphology the rodent worked bone probably belongs to a viscacha (*Lagidium peruanum*), a large rodent the size of a rabbit but with a bushy tail that inhabits the area. The only artifacts clearly identified as deer (cf. *Odocoileus virginanus* or whitetail deer) are fragments of antlers crafted as awls and one possibly grinder (see more detail below).

4.2 Selection of Skeletal Elements

Most of the worked bone artifacts and implements in Chavín were made on camelid long bone diaphysis. Due to the high alteration during work, the identifiable anatomic parts were usually missing, but those with identifiable signatures were in its majority metapodials (N = 102 in La Banda, N = 8 in Building C). Artifacts on camelid radioulnar, tibia, and femur were identified as well but in lower frequencies. It is interesting to note that in the analysis of three Formative villages in Bolivia, Moore (1999) found that while most worked bones were also manufactured on camelid long bones, mandibles, scapulae, and ilia were highly used as well. In the Chavín sample, only one artifact made from a camelid mandible (in Building C) and eight artifacts crafted on camelid scapula (four in Building C and four in La Banda) were recovered. No artifacts on the ilium were recovered in these sectors.

4.3 Bone Tool Types

Worked bone implements are grouped in eight categories that include morphological and functional markers: 1) Pointed tools, 2) Wide edge tools, 3) Beads, 4) Blanks/Preforms, 5) Tubes, 6) Spoons and tablets, 7) *Tupus*, 8) Disks, 9) Others (Table 4-2).

(1) Pointed tools (N = 59) include needles, awls, shuttles and picks (known as *wichuñas* in Quechua). Needles were probably used for sewing with wool and plant fibers, awls for making holes on animal hides, and shuttles and picks for loom weaving (Figure 4-4). These implements appear to be associated with making clothes, mats,

bags, and baskets. 48% (N = 49) of this type of artifact was excavated in Building C. These pieces were made on camelid long bones (awls, needles, and weaving picks) and deer antlers (awls).

(2) Wide edge tools (N = 25) include implements that look like scrapers, grinders, toggles, and net gauges. These pieces tend to be wide and have broad, round edges. 96% of these implements were recovered in Building C. The scrapers were probably used in pottery making or in cleaning hides. Some were made on camelid scapula (similar to the one from Formative Bolivia shown in Moore 2013: Figure 3b) and there is at least one crafted on camelid mandible (Figure 4-5). Toggles are short and

Table 4-2 Bone tools by type

	Building C	La Banda
Pointed tools	49	10
Wide edge tools	24	1
Beads	1	93
Blanks	3	11
Tubes	7	15
Spoons and Tablets	8	7
Tupus	4	1
Disks	3	2
Other	9	12
Total	108	152

(produced by Silvana Rosenfeld)

Figure 4-4 Bone needle from Chavín de Huántar, Building C, Area 1, A1−7, level 10 (scale in mm) (photo by Silvana Rosenfeld)

Figure 4-5 Bone scraper from Chavín de Huántar, Building C, Area 1, A1−4, level 10 (scale in mm) (photo by Silvana Rosenfeld)

flat objects with a central perforation. They could have been used as fasteners (for clothing or llama harness) but they also look similar to some of the modern implements for pottery making. The flat and short objects without holes could have been net gauges, to keep each mesh the same size. Nets could have been used for hunting birds, fishing, sacks, etc. The toggles and net gauges were made on camelid long bones diaphysis and ribs. They all appear very polished. One grinder or pestle crafted on deer antler was recovered from Building C.

(3) Beads (N = 94) are thin, short, cylinder shape artifacts with smooth edges. They were made mostly on camelid metapodials and phalanges (Figure 4-6) but at least one was crafted on a bird long bone. 99% of the beads were recovered from La Banda sector. These beads could have been used as clothing decoration or tied together as a necklace or headband.

(4) Preforms or blanks (N = 14) are polished camelid metapodials with carefully cut ends (epiphyses) (Figure 4-7). Some of these blanks[1)] show scores that I interpret as

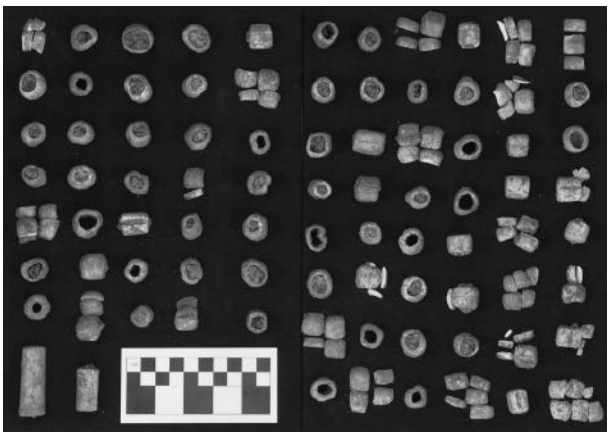

Figure 4-6 Bone beads from Chavín de Huántar, La Banda sector, K13, level 3 (photo by Silvana Rosenfeld)

Figure 4-7 Bone preform from Chavín de Huántar, La Banda sector, K13, level 3 (photo by Silvana Rosenfeld)

part of the sequence before being cut or snapped into beads (see more below). 78% of these preforms were recovered in La Banda.

(5) Tubes (N = 22) are long, hollow, smooth cylinder mostly carved on bird long bones. Almost 70% of tubes were recovered in La Banda sector and they were all made on bird bone, an obvious good choice due to its shape and minimal modification needed (the producer only has to cut the epiphyses and smooth the edges) (Figure 4-8). The tubes on bird bone could have been used for inhaling substances but also for blowing pigments. The tubes recovered in Building C were bigger as six were manufactured on camelid long bone (tibia and metapodium) and one on a rodent (cf. *Lagidium viscacia*) tibia. Five of the tubes manufactured on camelid bone have decoration of Chavín designs. The function of these wide tubes is less clear than the small tubes on bird bones as they do not appear suitable for inhaling or blowing.

(6) Spoons and tablets (or trays) are worked bones carved to obtain a concave space or internal indentation possibly to hold a powder or liquid element (N = 14). They were made in different sizes and mostly on camelid long bones, but a few were crafted on camelid skull bone, and one on bird bone. Four informal spoons were recovered from Building C and three of them were crafted on camelid skull bones (frontal, parietal, and temporal bones) and one on a camelid tibia diaphysis. One complete small-carved tablet was excavated in association with a burnt event (Feature 36). It was finely carved on a camelid long bone; it is very polished and it has a perforation outside the concave area as if to carry it as a pendant. Moore (1999: 87) describes a very similar artifact found at the site of Chiripa in Bolivia. One finely carved spoon/tray was finely made on a camelid distal tibia, it is highly polished and shows smooth edges. Lastly, a small broken spoon/tablet was recovered associated with the small canal right outside Building C. It was carved on a camelid long bone (possibly metapodium). It is very polished and shows a thick and smooth edge.

The spoons and tablets recovered from La Banda (N = 7) are more finely carved than those from Building C. They were all made on camelid long bone, except for

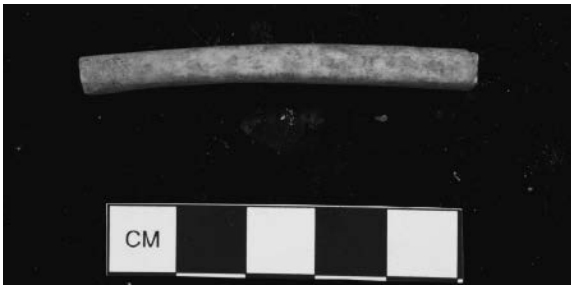

Figure 4-8 Tube on bird bone from Chavín de Huántar, La Banda sector, K13, level 3 (photo by Silvana Rosenfeld)

one crafted on bird bone. At least two of these small spoons are highly decorated, one with geometric designs (Figure 4-9). This spoon is similar to one from Capanayuq Rumi, as shown by Matsumoto (2012: Fig. 8). Another small spoon had a face profile (Figure 4-9), a similar design to a pin recovered by Lumbreras (2007: Fig. 220) in the Ofrendas Galleries inside the Chavín core temple area.

(7) *Tupus* (N = 5) are highly polished long pins with a head probably used to fasten a shawl or piece of cloth as documented with the Incas (Guamán Poma de Ayala 1992[1615]: 132; Vetter 2007). Four *tupus* were found in Building C, and three of them had a decorated head. One of the decorated *tupus* had a head design similar to a *chakana* or Andean stepped cross, a popular design during Chavín times (Figure 4-10). For instance, one of the felines carved on stone in the circular plaza has *chakanas* carved all over its body (see Lumbreras 2007: 190, Fig. 161).

(8) Disks (N = 5) are polished circular or semicircular worked bones probably used as ornaments. In La Banda workshop we excavated a polished circular disk[2)] and semicircular disk (Figure 4-11) that may have been used as pectorals due to their large size. The semicircular disk measures 287.87 mm in maximum length by 127.87 mm in maximum width. It is flat and smooth. It has a shape of a half-circle and four round perforations along its edge (but there were probably six perforations

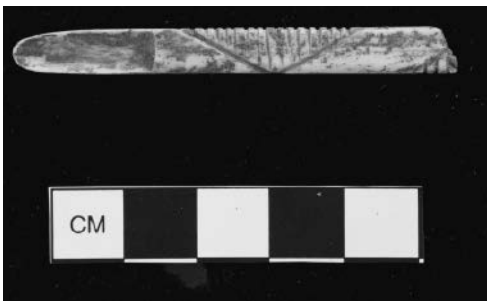

Figure 4-9 Bone spoon from Chavín de Huántar, La Banda sector, H12, level 3 (scale in cm) (photo by Silvana Rosenfeld)

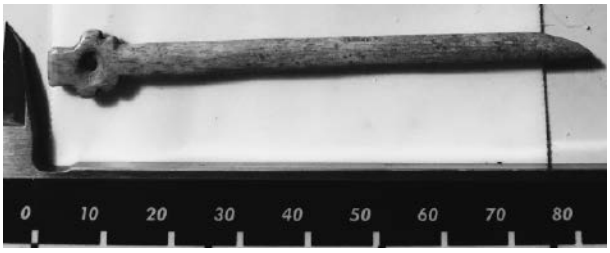

Figure 4-10 Bone pin (*tupu*) from Chavín de Huántar, Building C, A1–3, level 10 (scale in mm) (photo by Silvana Rosenfeld)

before it broke). Stable isotope analysis showed that it was carved on sea mammal bone (Sayre et al. 2016). The disks from Building C are smaller and were made on camelid scapula blade. All three were highly polished but broken and at least one had two small perforations close to its edge.

(9) Others (N = 21). This category includes bone artifacts/implements that do not fit the above functional and morphological classification and/or they appear in too low frequency to have their own category. These worked bones include fragmented worked bones, decorated fragments, and exotics. One of the exotics from La Banda was a highly polished and large scalene triangle carved on sea mammal bone and with one hole drilled on its shortest side carved on sea mammal bone (Sayre et al. 2016). Another enigmatic worked bone from La Banda was a small highly carved geometric piece with an oval end and triangular pieces on the body. The exotic worked bones from Building C include a camelid second phalange with a perforation that goes side to side perhaps used as a pendant, a camelid first rib decorated with geometric design, and a winged piece on a camelid vertebra with a reticulated design (Figure 4-12).

Figure 4-11 Bone disk from Chavín de Huántar, La Banda sector, K13, level 3 (photo by Silvana Rosenfeld)

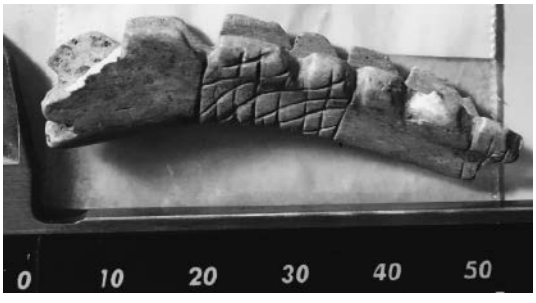

Figure 4-12 Bone artifact with reticulated design from Building C, A1–3, level 10 (scale in mm) (photo by Silvana Rosenfeld)

4.4 Craft Technique

Many of the worked bone tools and artifacts were made by grooving and snapping using flakes or blades. The highly carved artifacts and engraved decorations must have been done with more précised and soft tools, such as antler and bone. Some artifacts had perforations (needles, a camelid phalanx, and some disks, see above), which were done by drilling with a stone piercer or flake tool. Shaping by grinding against a stone or other abrasive surface appears to also have been a common technique. Few metal objects were recovered at Chavín. Regarding the sectors under study here, one artifact of possible gold was recovered from Building C (Rick and Bazan 2015) but no metal objects were recovered from La Banda. While there is yet no detailed lithic analysis on the stone material excavated from these sectors, stone tools and obsidian flakes were present in both areas, so it is safe to assume that at least most of the tools used to manufacture bone artifacts were made on stone and bone but no metal tools.

As described above, bone beads, preforms/blanks, and waste were common in La Banda area. The general sequence of production of beads was probably conducted according to the following stages: (1) the epiphyses were removed. Transverse cuts were made perpendicular to the metapodial or phalanx diaphysis to remove the proximal and distal epiphyses. At least one distal phalanx shows clear transverse cut marks probably associated with this debitage removal stage. (2) the core is produced and smoothed. When the epiphyses are removed, what is left is a diaphyseal core that is then smoothed on the surface and the ends. (3) the core is transversally scored. The smoothed diaphyseal core is scored at approximately one- cm interval. (4) transversal cut or snap performed on the core scores to obtain beads. (5) edge smoothing. Each bead edge is smoothed.

All five stages are represented on the bone assemblage recovered in La Banda, suggesting that the beads were manufactured *in situ* at this locality (Figure 4-13). Because the material included many intact fully finished artifacts it does not appear that it was a dump from activities that happened somewhere else.

Figure 4-13 Examples of bones in different stages of manufacture, Chavín de Huántar, La Banda sector (scale in mm) (photo by Silvana Rosenfeld)

Regarding bone procurement, we argued somewhere else (Rosenfeld and Sayre 2016) that camelids were probably raised in close proximity to Chavín since the local environment is propitious to camelid breeding. The skeletal part analysis and the high presence of podials suggest that, whole camelids, either dead or alive, were transported to La Banda sector (Rosenfeld and Sayre 2016). The people who inhabited La Banda had access to full camelid carcasses, possibly in connection to their interest in craft production. As discussed above, the presence of a workshop is evident given the representation of different stages in the manufacture of bone artifacts and the surrounding architecture.

5. Discussion

5.1 La Banda

The above analysis and comparison of worked bone in two sectors at Chavín de Huántar show interesting differences. Beads, large disks, and tubes are more common in La Banda assemblage and they represent a higher level of production than those recovered in Building C. The worked bones in La Banda also include more taxa diversity (most notably bird and sea mammal bones). It appears that the people in La Banda were engaged in the production of specialized and elaborated artifacts such as beads on camelid bone, tubes on bird bones, and some elaborated artifacts such as the disks and triangle on sea mammal bones.

It is worth noting that in the graphic art at Chavín, for example the carved stone found in the vicinity of Building A in the monumental zone (see Rick 2006: Figure 2), there are depictions of artifacts that resemble those beads and disks recovered in La Banda. Further, Chavín de Huántar has long been associated with psychoactive plant ingestion due to the representation of chimerical animals and supernatural beings interpreted as priests or shamans being transformed into different creatures (e.g., Burger 1995; Cordy-Collins 1980; Rick 2006; Sayre 2014). The locally found San Pedro cactus, a hallucinogenic plant that contains mescaline, is depicted in stone sculptures as well, most notably in the circular plaza (Rick 2006: Fig. 8). For psychoactive purposes, the San Pedro cactus is boiled and consumed as a beverage so very few artifacts are used in its preparation and consumption to be detected archaeologically. Another psychoactive plant probably used at Chavín the Huántar that has been discussed in the Chavín literature is *Anadenanthera colubrina,* also known as *vilca* (Burger 2011; Rick 2006; Sayre 2014; Torres 2008). It is inhaled through the nose as a fine snuff powder. This psychoactive plant is not found in high-altitude places like Chavín as it appears to prefer zones not higher than 2500 masl (Torres and Repke 2006). Some of the Chavín tenon heads display a nasal emission and contorted facial features that have been interpreted as characteristics of hallucinogenic snuff-takers (Burger 2011; Rick 2006; Torres 2008). There is a sculpture from Chavín that some argue it depicts a supernatural figure adorned with *A. colubrina* leaves and pods (Burger 2011: 126, Fig. 2).

Preparation of *A. colubrina* for psychoactive purposes involves grinding of its seeds, then transferring the powder with a small spoon to a rectangular tablet, and finally

inhaling directly into the nostrils by a narrow tube (Torres 2008). Elements of this particular paraphernalia associated with *A. colubrina* preparation and ingestion: spoons, tablets, and tubes made on animal bone have been recovered in Chavín (see analysis above). In particular, small and fine-crafted spoons and narrow tubes made on bird bone were recovered in higher frequencies in La Banda assemblage than in Building C. The presence of spoons, tablets, and tubes by no means is definite evidence of *vilca* ingestion. Clearly, these tools could have been used in other activities, such as blowing pigments in the case of the bird bone tubes or moving any other powder in the case of the small spoons. However, the fact that we found them in the same workshop that also produced other elaborated artifacts (camelid bone beads and sea mammal bone disks that match monumental stone art) may suggest the specific production of ritual paraphernalia produced for the temple in La Banda workshop.

Ethnographic accounts show that there can be variation in *vilca* consumption, and we need to recognize that just as the above-mentioned artifacts could have been used for many activities, other ways and tools could have assisted in *vilca* ingestion. Ethnographic accounts of *vilca* consumption in some parts of the Brazilian Amazonia show how it is a two-person activity with one person blowing snuff into the nostril of the other using long bird bone tubes (Torres and Repke 2006: Fig. 54). Other accounts describe the Guahibo people from Colombia in a private session using two short bird bones and a circular tray (Torres and Repke 2006: Fig. 55).

In all, the presence of artifacts associated with ritual psychoactive ingestion (small bone spoons and tubes, bone tablets) along with other elaborate artifacts associated with ritual in the monumental core zone (large bone disks and beads) suggest the presence of craft specialists in La Banda engaged in the manufacture of ritual paraphernalia for the temple.

5.2 Building C

A different picture emerges from the analysis of bone tools recovered from the deposits around Building C. Tools for weaving, shaping ceramics, basket/net makings, and leather working appear far more common in this assemblage than in the assemblage from La Banda. Further, the material from Building C has less diversity of bone raw material, in terms of animal species. The worked bones deposited in this access corridor are mostly related to quotidian activities such as those mentioned above. Of course, this does not mean that the Building C ramp events were not engaged in ritual activity. In fact, current interpretations involve the deposition of ritual material in this entrance area (Rick 2017; Rick and Bazan 2015), based on the variety and fragmented state of the archaeological material. One possible ritual context is the assemblage associated with a drain canal found at the bottom of the Building C ramp. The pack clay floor contents associated with this well-built canal include decorated Chavín black ware sherds, small fragments of obsidian and one bone artifact. The worked bone is a very polished but broken small tablet carved on a camelid long bone. The fracture pattern and intense scratching of the obsidian fragments suggest to Rick intentional destruction in what may be sacrificial acts (Rick 2017). In this assemblage from Building C Area 1 there is no evidence for the

manufacture of bone paraphernalia associated with the major ritual activities that occurred in the core of the temple. Most of the bone artifacts in Building C assemblage are tools for making clothing, baskets, bags, and shaping ceramics. However, it is not uncommon to find votive offerings of quotidian instruments in Chavín. Lumbreras (2007) excavated bone needles, awls, and pins among other tools and artifacts in the Ofrendas Galleries inside the temple area.

6. Conclusion

This paper aims to be an overview of the variety of tool artifacts recovered from two distinct sectors at the site of Chavín de Huántar and the variety of activities that their morphology and style suggest. Of particular interest is the evidence of bone tool manufacture at La Banda sector, through the identification of waste, preform, and finished products in the same area- and the presence of three types of implements possible produced for the ingestion of hallucinogenic plants. More specifically, this preliminary analysis indicates that La Banda was a likely area of production of bone artifacts to be used at the temple possibly by the priests. These bone artifacts include tablets and necklace beads made on camelid bone, large pectorals and ornaments made on sea mammal bone, and spoons and tubes made on bird bone perhaps for *vilca* (*A.colubrina*) inhalation.

The assemblage from the Building C ramp shows a variety of bone tools related to more quotidian activities such as shaping ceramics and making textiles, sacks, and nets in possible ritual depositions. Overall, the study of bone tools, both the study of different manufacturing processes and the comparative analysis across sectors, can be a promising line of study to access a better understanding of past economic, social, and ritual life at Chavín.

Acknowledgments

I would like to thank Yuji Seki for his generous invitation to participate in the symposium Comparative Studies among the Formative Period Cultures in the Andes held at the National Museum of Ethnology in Osaka in 2014. I am grateful to John Rick (Stanford University) and the Programa de Investigacion Arqueologica y Conservacion Chavín de Huántar for images 4-1 and 4-2.

Notes

1) It is possible that some of these polished camelid metapodial diaphyses were artifacts in themselves (see Rick 2006).
2) The polished circular disk was in very poor conditions of preservation and was not available for further analysis.

References

Altamirano Enciso, Alfredo J.
1983 *Guía osteológica de cérvidos andinos* (Serie Investigaciones 6). Lima: Departamento Académico de Ciencias Histórico-Sociales, Gabinete de Arqueología, Colegio Real, Universidad Nacional Mayor San Marcos.

Averbough, Aline and Alice Choyke
2012 From Bone to Bead: Developments in European Research on Worked Osseous Materials. *The European Archaeologist* 38: 67–70.

Backwell, Lucinda, Francesco d'Errico, and Lyn Wadley
2008 Middle Stone Age Bone Tools from the Howiesons Poort Layers, Sibudu Cave, South Africa. *Journal of Archaeological Science* 35(6): 1566–1580.

Bélisle, Véronique
2019 Hallucinogens and Altered States of Consciousness in Cusco, Peru: A Path to Local Power during Wari State Expansion. *Cambridge Archaeological Journal* 29(3): 375–391.

Burger, Richard L.
1978 The Occupation of Chavín, Ancash, in the Initial Period and Early Horizon. Ph.D. Dissertation, University of California, Berkeley.
1995 *Chavín and the Origins of Andean Civilization*. London: Thames and Hudson.
2011 What Kind of Hallucinogenic Snuff Was Used at Chavín de Huántar? An Iconographic Identification. *Ñawpa Pacha* 31(2): 123–140.

Choyke, Alice
2010 The Bone Is the Beast: Animal Amulets and Ornaments in Power and Magic. In D. Campana, P. Crabtree, S. D. DeFrance, J. Lev-Tov, and A. Choyke (eds.) *Anthropological Approaches to Zooarchaeology: Colonialism, Complexity, and Animal Transformations*, pp. 197–209. Oxford: Oxbow Books.

Cordy-Collins, Alana
1980 An Artistic Record of the Chavín Hallucinatory Experience. *The Masterkey for Indian Lore and History* 54(3): 84–93.

Emery, Kitty F.
2008 Techniques of Ancient Maya Bone Working: Evidence from a Classic Maya Deposit. *Latin American Antiquity* 19(2): 204–221.

Emery, Kitty F. and Kazuo Aoyama
2007 Bone, Shell, and Lithic Evidence For Crafting in Elite Maya Households at Aguateca, Guatemala. *Ancient Mesoamerica* 18(1): 69–89.

Gilbert, B. Miles, Larry D. Martin, and Howard G. Savage
1981 *Avian Osteology* (1st edition). published by B. Miles Gilbert.

Guamán Poma de Ayala, Felipe
1992[1615] *Nueva crónica y buen gobierno* (Crónicas de Indios y Mestizos II). Lima: Enciclopedia Histórica de la Literatura Peruana.

Henshilwood, Christopher S., Francesco D'Errico, Curtis W. Marean, Richard G. Milo, and Royden Yates
2001 An Early Bone Tool Industry from the Middle Stone Age at Blombos Cave, South

Africa: Implications for the Origins of Modern Human Behaviour, Symbolism and Language. *Journal of Human Evolution* 41(6): 631–678.

Kembel, Silvia R.

2008 The Architecture at the Monumental Center of Chavín de Huántar: Sequence, Transformations, and Chronology. In W. J. Conklin and J. Quilter (eds.) *Chavín: Art, Architecture, and Culture*, pp. 35–81. Los Angeles: Cotsen Institute of Archaeology, University of California, Los Angeles.

Lumbreras, Luis G.

1993 *Chavín de Huántar: Excavaciones en la Galería de las Ofrendas*. Mainz am Rhein: Phillipp von Zabern.

2007 *Chavín: Excavaciones arqueologicas* (2 vols.). Lima: Universidad Alas Peruana.

Matsumoto, Yuichi

2012 Recognising Ritual: The Case of Campanayuq Rumi. *Antiquity* 86(333): 746–759.

Mesía Montenegro, Christian

2014 Festines y poder en Chavín de Huántar durante el Período Formativo Tardío en los Andes Centrales. *Chungará* 46(3): 313–343.

Miller, George R.

2003 Food for the Dead, Tools for the Afterlife: Zooarchaeology at Machu Picchu. In R. Burger and L. C. Salazar (eds.) *The 1912 Yale Peruvian Scientific Expedition Collections from Machu Picchu: Human and Animal Remains* (Yale University Publications in Anthropology 85), pp. 1–63. New Haven: Yale University Publications in Anthropology.

Miller, George R. and Richard L. Burger

1995 Our Father the Cayman, Our Dinner the Llama: Animal Utilization at Chavín de Huántar, Peru. *American Antiquity* 60(3): 421–458.

Moholy-Nagy, Hattula

2004 Vertebrates in Tikal Burials and Caches. In K. F. Emery (ed.) *Maya Zooarchaeology: New Directions in Method and Theory* (Monograph 51), pp. 193–205. Los Angeles: Cotsen Institute of Archaeology, University of California.

Moore, Katherine M.

1999 Chiripa Worked Bone and Bone Tools. In C. A. Hastorf (ed.) *Early Settlement at Chiripa, Bolivia: Research of the Taraco Archaeological Project* (Contributions of the University of California Archaeological Research Facility 57), pp. 73–93. Berkeley: University of California, Berkeley.

2013 Economic and Social Context of Bone Tools Use, Formative Bolivia. In A. Choyke and S. O'Connor (eds.) *From These Bare Bones: Raw Materials and the Study of Worked Osseous Objects*, pp. 174–186. Oxford: Oxbow Books.

Pacheco T., Victor R., Alfredo Altamirano Enciso, and Emma Guerra P.

1986 *The Osteology of South American Camelids* (Archaeological Research Tools 3). Los Angeles: Institute of Archaeology, University of California.

Rick, John W.

2006 Chavín de Huántar: Evidence for an Evolved Shamanism. In D. Sharon (ed.) *Mesas & Cosmologies in the Central Andes* (San Diego Museum Papers 44), pp. 101–112. San

Diego: San Diego Museum of Man.

2017 The Nature of Ritual Space at Chavín de Huántar. In S. A. Rosenfeld and S. L. Bautista (eds.) *Rituals of the Past: Prehispanic and Colonial Case Studies in Andean Archaeology*, pp. 21–50. Boulder: University Press of Colorado.

Rick, John W. and Augusto E. Bazán

2015 Proyecto de investigación arqueológica y conservación en Chavín de Huántar. Informe final de la temporada 2014. Informe presentato al Minsterio de Culture del Peru.

Rick, John W., Christian Mesía Montenegro, Rosa M. Rick, Silvia R. Kembel, Daniel A. Contreras, Matthew P. Sayre, and John Wolf

2010 La cronología de Chavín de Huántar y sus implicancias para el periodo Formativo. *Boletin de Arqueologia PUCP* 13: 87–132.

Rosenfeld, Silvana A. and Matthew P. Sayre

2016 Llamas on the Land: Production and Consumption of Meat at Chavín de Huántar, Peru. *Latin American Antiquity* 27(4): 497–511.

Sayre, Matthew P.

2010 Life across the River: Agricultural, Ritual, and Production Practices at Chavín de Huántar, Perú. Ph.D. Dissertation, University of California, Berkeley.

2014 Ceremonial Plants in the Andean Region. In A. Chevalier, E. Marinova, and L. Peña-Chocarro (eds.) *Plants and People: Choices and Diversity through Time*, pp. 368–373. London: Oxbow Books.

Sayre, Matthew P. and Natali Luisa López Aldave

2009 Exchange at Chavín de Huántar: Insights from Shell Data. *Andean Past* 9: 340–345.

Sayre, Matthew P., Melanie J. Miller, and Silvana A. Rosenfeld

2016 Isotopic Evidence for the Trade and Production of Exotic Marine Mammal Bone Artifacts at Chavín de Huántar, Peru. *Archaeological and Anthropological Sciences* 8: 403–417.

Torres, Constantino Manuel

2008 Chavín's Psychoactive Pharmacopoeia: The Iconographic Evidence. In W. J. Conklin and J. Quilter (eds.) *Chavín: Art, Architecture, and Culture* (Monograph 61), pp. 239–259. Los Angeles: Costen Institute of Archaeology, University of California, Los Angeles.

Torres, Constantino Manuel and David B. Repke

2006 *Anadenanthera: Visionary Plant of Ancient South America*. Binghamton: The Haworth Press, Inc.

Vetter, Luisa

2007 La evolución del tupu en forma y manufactura desde los Incas hasta el siglo XIX. In R. Lleras Pérez (ed.) *Metalurgia en la América antigua: Teoría, arqueología, simbología y tecnología de los metales prehispánicos*, pp. 101–128. Lima: Instituto Francés de Estudios Andinos.

Webster, Ann D. and John W. Janusek

2003 Tiwanaku Camelids: Subsistence, Sacrifice, and Social Reproduction. In A. L. Kolata (ed.) *Tiwanaku and Its Hinterland: Archaeology and Paleoecology of an Andean Civilization*, *Volume 2: Urban and Rural Archaeology*, pp. 343–362. Washington DC: Smithsonian Institution Press.