

# HUMAN SACRIFICE AT PACHACAMAC

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*This is a study of the historical, archaeological, and anatomical/pathological evidence for human sacrifice at the Peruvian coastal site of Pachacamac during the Late Intermediate and Late Horizon Periods (A.D. 1000–1475 and 1475–1533). It highlights the problems associated with the identification of archaeological sacrifice, then goes on to summarize the pathological and cultural evidence from the site. The significance of this evidence is evaluated using not only traditional paradigms but also the notion of “deviant” burial; this is proposed as a formalized means of identifying archaeological sacrifice in collaboration with—and in the absence of—other indicators. Comparisons are carried out with selected sites and periods, and in both coastal and inland regions. Supplementary evidence from international contexts is also considered. The anatomical and contextual findings from Pachacamac reflect a shift from the somewhat sanguineous cultures such as the Nasca and the Moche, to the perfection-obsessed sacrificial modality of the Incas. The former seems to be concerned primarily with retainer burials and the punishment of enemies or opponents, which were offered to an uncertain eternity as a gesture to some higher power. The iconographic, archaeological, and anatomical evidence for sacrifice in these groups is commensurately dramatic. In the case of the Incas, the sacrifices were intended to bless objects or missions, give thanks, or to appeal for supernatural favors or assistance. We go on to propose—for the first time in Latin America—a theoretical framework for identifying and interpreting “deviant” burials in the Andean archaeological record.*

*Este estudio trata de las evidencias históricas, arqueológicas y anatómicas/patológicas relacionadas con el sacrificio humano en el sitio peruano costero de Pachacamac en los periodos Intermedio Tardío y Horizonte Tardío (1000–1475 y 1475–1533 dñe). Se conocen muchas formas diferentes del sacrificio en los Andes Centrales, y el tema ha sido discutido por varios autores, pero sin consenso sobre su definición. Luego de una breve presentación del sitio de investigaciones, empezamos por establecer criterios para definir el sacrificio humano, inspirándonos del estudio desta práctica en una serie de antiguas culturas y sociedades a través del mundo. Esto nos llevo a sugerir que el sacrificio humano es cualquier matanza de un individuo por motivos rituales/simbólicos, pues las intenciones específicas se encuentran por lo general fuera del alcance del arqueólogo, especialmente en las culturas sin escritura como las del antiguo Perú. Continuamos con el problema de la identificación del sacrificio humano en el registro arqueológico, sea: ¿ como identificar la practica sacrificial en base de las evidencias materiales ¿ Para esto, nos referimos al concepto de “entierro desviante”. Este concepto primero propuesto por Geake (1992) para la arqueología medieval inglesa se ha vuelto progresivamente un elemento crucial en el exámen de la muestra antropológica. En terminos cortos, se refiere a la modalidad de la muerte de un individuo y/o la manera con la cual sus restos físicos se encuentran o han sido usados, y que nos dicen estos elementos respecto a las normas funerarias en la cultura a la cual pertenece el difunto. Aquí enfocamos en la identificación de una categoría de entierros desviantes: el sacrificio humano. La metodología que usamos con fines de identificar el sacrificio en nuestra muestra de Pachacamac combina las evidencias antropológicas y arqueológicas. Aparte de las evidencias anatómicas directas de traumatismo físico, hay muchas evidencias de entierros “desviantes” que ayudan para contextualizar los individuos traumatizados y también proporcionan un medio potencial para identificar gente sacrificados en ausencia de evidencias patológicas. Por lo tanto se puede usar tres combinaciones: (1) Traumatismo y Entierro Desviante; (2) Traumatismo sin Entierro Desviante; (3) Entierro Desviante sin Traumatismo. Esto nos lleva a introducir el concepto de Individuos Potencialmente Sacrificados (PSIs en el texto): el análisis de la configuración anatómica y contextual de concepto PSI proporciona al investigador una base a partir de la cual se determina la probabilidad de sacrificio para cada individuo. Este marco teórico y metodológico se aplico a nuestro corpus de 181 excavados en Pachacamac. Respaldamos la propuesta de John Verano respecto a la existencia de dos patrones de sacrificio humano identificados en sitios prehispánicos Peruanos (niño o adolescentes como acompañantes o ofrendas para meta especial, y varones prisioneros sin tratamiento espécifico). Por otro lado, nuestra muestra sugiere alguna forma de dicotomía entre las tradiciones sacrificiales de la Costa Norte (sangrienta) y Central (no sangrienta).*

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*Latin American Antiquity* 19(4), 2008, pp. 375–398  
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Central Andean evidence for sacrifice has been discussed at length by various authors (including Fleming 1983; Lyon 1995; Verano 1995, 2001b), for while some discoveries are fairly unambiguous (for example, Bourget 1997, 1998, 2001; Bourget and Millaire 2000; Cordy-Collins 2001; Reinhard 1999; Uhle 1903; Verano 1998; Verano & Cordy-Collins 1986), some evidence is more open to debate (see discussions by Lyon 1995 and Sutter 2001). It therefore behooves us to reappraise the mechanisms by which sacrifice is identified. In many cases, interpretation of sacrifice has been assisted by iconographic evidence, although even this may be enigmatic.<sup>1</sup> Sacrifice in the Central Andes is known to have taken many different forms, including strangulation (Fleming 1983; Uhle 1903), throat-cutting (Verano 2001), decapitation (Cordy-Collins 2001; DeLeonardis 2000; Proulx 2001), dismemberment (Bourget 1998; Verano 1986), bludgeoning (Bourget 1998, Reinhardt 1999), and poisoning (Montoya 2004). While some of these have been attested to historically and iconographically, they are particularly demonstrable in human skeletal and mummified remains. In the Americas, this is usually manifested as cutmarks (Verano 2001), cranial trauma (Standen and Arriaza 2000; Torres-Rouff *et al.* 2005; Bourget 2001), and dismemberment/trophy taking (Andrushko *et al.* 2005; Verano 1986, 2001b; Cordy-Collins 2001; Millaire 2004).<sup>2</sup>

Some of the most dramatic evidence for ancient sacrifice comes from the coastal populations of northern Peru, where there is considerable evidence for all these forms of physical trauma in addition to comprehensive iconographic data in the form of murals and figurative ceramic vessels from the Moche Culture of the Early Intermediate Period (ca. A.D. 1–750) (Verano 2001a). The refined nature of the data has enabled further analysis of the osteological material, elucidating a large amount of social information concerning the geographical origin of the victims and their likely social role within Moche belief and social systems (Sutter and Cortez 2005). However, due to the exacting excavation and exquisite analysis of these remains, authors have relied so heavily upon them that the Moche seems likely to become the standard against which to assess all sacrificial behavior in all Prehispanic South American cultures. It may be that Moche society was unusually san-

guineous in its use of sacrifice; alternatively, however, the distinction may be artificial and it is only the apparent enthusiasm—and resulting high archaeological visibility—with which they embraced this aspect of life that makes them stand out against other cultures.

Compared to their northern neighbors, the societies and settlements of the Central Coast—such as Pachacamac—have produced little data relating to human sacrifice (see Burger 1992; Eeckhout 2004a; Lumbreras 1974; Moseley 1992). Kroeber (1954) found burials arranged in pairs at Maranga's Huaca Aramburu, from the Lima culture (contemporary with the Early Intermediate Period Moche). In reference to burials 109 and 109A, he states that “there can be no doubt that we have (...) a spouse or companion burial or sacrifice” rather than a retainer burial, due to the comparative modesty of the accompanying grave gifts (Kroeber 1954:33). Other examples include several individuals, including a series of headless, disarticulated, and defleshed bodies and possible trophy heads from the site of Maranga (Jijon y Caamaño 1949:27–42). Paredes (1999) describes four similar trophy heads from the same site, although they were unfortunately recovered from a looted context. Trophy heads were also found by Stumer (1953:46) at Playa Grande, and by Cerulli (1967:69) at Cajamarquilla. These have been interpreted as evidence of human sacrifice and the ritualized offering of mortuary remains to the deceased, thus differing somewhat from Nasca trophy head caches (DeLeonardis 2000; Paredes 1999:58; Proulx 2001).<sup>3</sup> At the beginning of the Middle Horizon (ca. A.D. 600–1000), Dante Casareto (2005) excavated one individual who had been killed and deposited in front of an important building at Cajamarquilla. This young adult male had his hands tied behind his back and had been interred with a condor, a camelid (also sacrificed), and a series of broken vases of the Nievería style. A recent discovery of almost 200 Late Intermediate Period (ca. A.D. 1000–1450) sacrificial victims at Punta Lobos—possibly linked to the expansion of the Chimu empire—is possibly the most important such discovery for some time (Verano 2007, 2008). The “cemetery of the sacrificed women” excavated by Uhle in the Inca Temple of the Sun at Pachacamac is the best-known sample from the site (Benson 2001; Eeckhout 2004a; Fleming

1983; Shimada 1991; Uhle 1903:84–88; Verano 2001b), and perhaps the central coast area; while it is generally agreed that the victims were “*acllas*” (chosen women) who were strangled as part of major ritual ceremonies, a reappraisal of the original remains is required. There is no evidence for trophy-taking at Pachacamac, although the large number of loose skulls—disturbed by looters—may include some that were divorced from the bodies before interment.

More recent excavations by the Ychsma project at Pachacamac and other nearby settlements have revealed a number of potential human sacrifices dating to the late prehispanic and early colonial periods (Eeckhout 1999b, 2004a). It therefore behooves us not only to reappraise extant evidence for sacrifice, but also to explore the definitions of the process and ascertain methods in which it may be archaeologically visible in the absence of dramatic anatomical and iconographic evidence. The remainder of this paper therefore entails a summary of the site of Pachacamac, a methodological discussion about sacrifice in the archaeological record, a description of the finds, and an interpretation of their potential significance.

### The Site of Pachacamac

Pachacamac is a monumental coastal site in the Central Andes that reached its apogee after being incorporated into Tahuantinsuyu (Figure 1). It became one of the empire’s most important religious, ceremonial, political, strategic, economic, and symbolic centres (Hyslop 1990:255–61; Moseley 1992:185; Rowe 1946:191, 1963; Shimada 1991). Among other things, it was the seat of an eponymous oracular god and the focus of large-scale, long-distance pilgrimages. Pachacamac is situated half a kilometre from the Pacific Ocean, near the mouth of the Lurín River. The site covers about 600 hectares (2.31 square miles), of which one third is occupied by the monumental sector (Figure 2). The latter is divided into two main parts by two concentric enclosures. The first enclosure—known as The Sacred Precinct—includes the Old Temple of Pachacamac, the Painted Temple, the Temple of the Sun, an important cemetery, and the foundations of a large rectangular structure. The second enclosure includes streets, cemeteries, numerous plazas, open spaces, and most pyramids

with ramps. The third line of walls marks the exterior of the site, and there is a fourth enclosure wall about one kilometre north of the third.

Permanent occupation at the site probably began during the Early Intermediate Period, when the lower Rímac and Lurín valleys were under the dominion of a stratified polity whose center was situated in the Rímac valley. This early group—dubbed the Lima culture—was characterized by a specific ceramic style and large adobe platform mounds; extant examples include the “Old Temple of Pachacamac” and the “Conjunto de adobitos,” although a variety of other structures and cemeteries still remain. Even during the earliest period, it is likely that the site was already an important religious center. Pachacamac came under Huari influence during the Middle Horizon, and acted as a conduit for the spread of south-central highland iconography and religious ideology. The extant religious significance of Pachacamac—especially relating to the prestige of the oracle and related cult—is unlikely to have been lost on the newcomers. During this period, the Painted Temple was constructed and the Old Temple was abandoned. Huari’s decline at the end of the Middle Horizon (around A.D. 1000) marked a reduction in Pachacamac’s sphere of influence; however, the precise mechanics of this process are poorly understood because the Late Intermediate period of the central coast is very understudied. Written sources suggest that the Ychsma ethnic group dominated the Lurín Valley at the end of the LIP, but this polity has been difficult to define archaeologically (Eeckhout 2004b, 2005a). Topa Inka Yupanqui’s conquest of the region around A.D. 1470 marked the beginning of the Late Horizon, and Pachacamac (until then called Ychsma) was incorporated into the Inka empire. The Inka carried out a series of renovations and developments at the site, including the construction of the Temple of the Sun and an *Acllahuasi* (House of the Chosen Women). The oracle became one of the most feared and revered in the Andes and also the focus of large-scale pilgrimages, which were encouraged by the Inkas. When the Spaniards arrived at the site in January 1533, it was one of Peru’s largest and most impressive settlements. However, within a few years of the conquest it was completely abandoned.

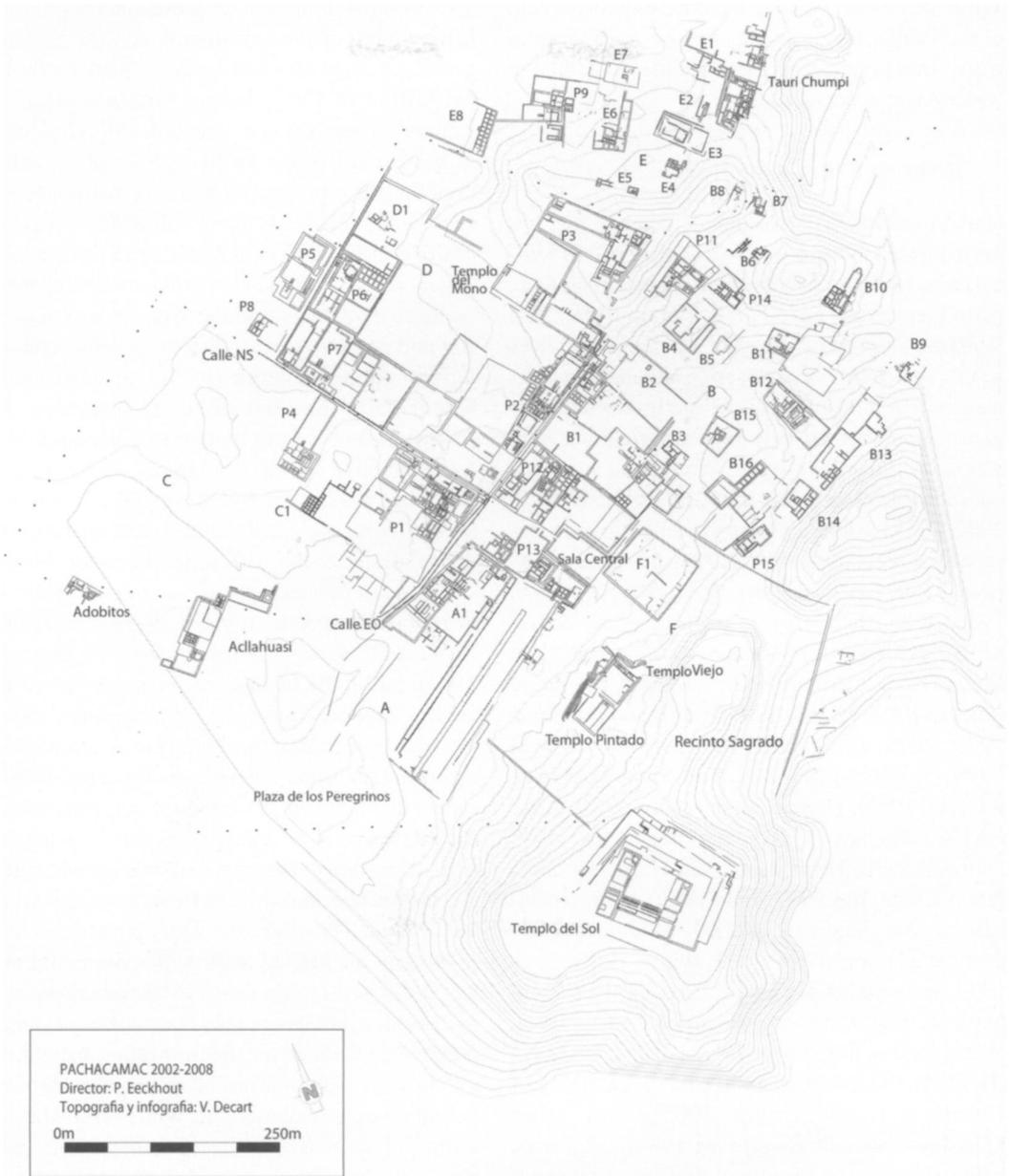
The site has been the subject of research into monumental architecture since the end of the nine-



Figure 1. Map of Peru with sites mentioned in the text.

teenth century (Bueno Mendoza 1982; Eeckhout 1999a; Shimada 1991; Uhle 1903). The Ychsma Project (Université Libre de Bruxelles, Belgium—Instituto Nacional de Cultura del Peru) started in 1999. It is a long-term, multidisciplinary project, which aims to understand the function, development, and influence of Pachacamac during the Late Intermediate Period and Late Horizon. While there

is a focus upon monumental architecture's function, chronology, and role in the site expansion, the project brief also bioarchaeological analysis (among other disciplines). The current paper is the result of collaboration between the cultural and bioarchaeological components of the research plan. As an extremely important ritual, official, and domestic site, Pachacamac would seem to be an ideal



**Figure 2. Map of monumental area of Pachacamac (2008) with complete nomenclature of buildings (Dir: Peter Eeckhout; Topographer : Valérie Decart).**

locale to study all aspects of bioarchaeology, including sacrifice, evidence for which has been recently recovered at the site.

Despite the fact that academics have researched Andean sacrifice for over a century, there is very little consensus on the nature, definition, or criteria for its accurate identification through archaeo-

logical and anthropological evidence. In order to explore this issue and address the points thus raised, we elected to explore the concept of human sacrifice in general terms so that we could propose a series of objective criteria for identifying possible ritual manslaughter from other forms of intentional or accidental killing in the archaeological record.

While we developed these hypotheses with the help of the Pachacamac sample, we also used samples from other periods and areas in order to address a wider Andean perspective.

### Defining Criteria for Human Sacrifice

Human sacrifice is a worldwide practice that has been attested to historically since the birth of written records, and archaeologically from the Neolithic period onwards (Davies 1988; Tierney 1989). The temporal and spatial range of sacrificial practices results in a highly diverse series of behavioral signatures that reflect the role of sacrifice within any given population. It may be a marginal and rare aspect of life, such as in the exceptional and often questionable cases of the Iron Age (Brunaux 2000, 2002, 2005; Cadoux 1996) to the well-attested mass sacrifices regularly performed by the Aztecs (Carrasco 1999; Gonzalez Torres 1985, 2001; Graulich 1988, 2000, 2005). There is archaeological and historical evidence for human sacrifice in ancient Mesopotamia (Moorey 1997; Wooley 1934), Egypt (Dreyer 1992; Maisch 1998; Maish and Friedman 1999; Petrie 1900–1901; Reisner 1936; Wright 1979; Yoyotte 1980–81), Sub-Saharan Africa (Heusch 1986), Greece (Bonnehère 1994; Burkert 1983; Hugues 1991), Rome (Beard et al. 1998; Dumézil 1970; Rives 1995; Van Haepere 2004, 2005), China (Hay 1973), India (Vesci 1986), Southeastern Asia (Valeri 1994, 2000; Wessing and Jordaan 1997), and Oceania (Kirch 2000; Spriggs 1997; Valentin 2005; Valeri 1985). For the present purpose, data from various cultures of the New World such as the Pawnee (Hyde 1974), the Maya (Helfrich 1973; Nájera 1987), the populations of Teotihuacan (Sugiyama 2005), and other Mesoamerican cultures (Boone 1984) and a wide range of Central and Southern Andean societies are all of particular relevance.

Anthropological theories about sacrifice and its definition are abundant and highly diverse (Bloch 1997; Girard 1972; Godelier 1996; Hubert and Mauss 1899; Leach 1980; Sahlins 1985), based as they are upon an exceedingly disparate set of archaeological, anthropological and ethnographic data. Sacrifice [Lat. *Sacrificare*—to make holy] can roughly be defined as a form of gift to supernatural beings in which the offering is consecrated through its destruction, although this should be

viewed as the most basic of operational definitions. In the context of humans Albert et al. (2005:23) suggest that human sacrifice can be defined as “the ritual killing of living beings within a religious context.” They add that “one will call religious—in the general sense of the term—any practice implying the representation of supernatural beings or powers” (2005:24). If we follow this proposal, positive identification of sacrifice in the archaeological record is somewhat problematic, for while violence may be identifiable from bioarchaeological and pathological studies of skeletal remains, differentiating violence (including what would forensically be described as “murder” or “manslaughter”) from human sacrifice and other forms of ritual killing is a largely semantic issue that relies heavily upon contextual (including historical, epigraphic, artefactual, and spatial) evidence. Indeed, the difference between human sacrifice (as defined above) and manslaughter lie in the intentions of those who performed the killing. Many authors consider that retainers, for example, cannot fall in the human sacrifice category as the victims were not consecrated: they were not offered to a god or other supreme being but as companions and/or servants of a special individual. In our eyes, such a distinction is acceptable when corresponding ethnological or documentary data is available, since it provides a directly observed social context that cannot be approximated by archaeological evidence alone. Therefore, an archaeologist can—with or without the help of anthropology—record violent death and infer a series of explanations as to its causation, but it is usually impossible (or at least premature) to discover the motivation behind the killing. It is for this reason that we propose a broader definition of human sacrifice, which would be *any* killing of an individual for ritual/symbolic purposes. In this sense, we follow the proposals of Bonnehère (1994) and Van Haepere (2004, 2005) concerning human sacrifice in ancient Greece and Rome. A series of criteria must be selected in order to determine, in each case, the most plausible interpretation of each given situation.

### Identifying Human Sacrifice in the Archaeological Record

Since the 1960s, there has been a growing interest in the study and interpretation of atypical burials

als, i.e., those showing unusual body position or placement, special location or non-normative treatment of the body (Aspöck 2007; Balter 2005; Buckberry 2007; Geake 1992, 2002; Reynolds 2009). Originally designed to analyze “burials different from the normative burial ritual of the respective period, region and/or cemetery” (Aspöck 2007) in Anglo Saxon populations, the applicability of the notion of burial deviance—originally proposed by Geake (1992)—has transcended its original purpose and is becoming an increasingly important variable for examining skeletal samples. In short, it pertains to the manner in which an individual’s public persona and/or manner of death may be expressed in how—and where—they are disposed of.

Typically, the subjects of deviant burial had wittingly or unwittingly provoked social censure. Historical examples include stillborn/unbaptized children, suicide victims, lepers, and executed criminals. Archaeologically, Iron Age bog bodies may reflect censure for some perceived social transgression, possibly homosexuality (Rives 1999:13:2), while the exclusion of sick individuals from centralized burial plots in the British Early Neolithic may indicate either spiritual exclusion or—more charitably—special treatment reflecting their infirmities (Balter 2005). As far as we are aware, however, this is the first time that a formalized deviant burial scoring system has been deployed in Latin America.

Rather than examining grave wealth or tomb elaboration, the “patterns of disposal of human remains in the past” (Reynolds 2009:41) should be assessed in relation to the “eight causal factors” that might account for unorthodox burial practices in the archaeological record: “battle, execution, massacre, murder, plague, sacrifice, suicide and superstition” (Reynolds 2009:43). While being alert to all of these potentialities, we will here focus on the identification of one category of deviant burials; namely, human sacrifice.

The first priority is to accurately identify non-natural death—killing—and to distinguish between accidental and deliberate agency; this underscores the importance of including a physical anthropologist or bioarchaeologist in any serious field team (Buikstra 1977). While anatomical/pathological evidence may be the single-most important discriminator available to us, however, it should be rec-

ognized that many forms of killing either leave no observable traces on the body (i.e., poisoning), leave lesions that only affect soft tissues (i.e., ligature strangulation), or only produce minor osteological effects (i.e., hyoid fracture in manual strangulation cases) and are therefore missed on skeletal remains, especially if they are not in a good state of preservation.

Death by sacrifice tends to be the exception rather than the rule in any given society. By perusal of ethnographic and historical information, it would seem reasonable to suggest that sacrificed persons were treated differently from those who met a less-dramatic—and, arguably, less socially significant—demise. In the Andes, the *capac hucha* interments could be described as “deviant” insofar that their location and manner of burial is so out of the ordinary for the population as a whole; these burials therefore reflect something about the individual in life, and their death’s role in the social order (Brown 1995; Rowe 1995; Verano 1995). It should be possible, in some cases at least, to identify sacrificed individuals on the basis of contextual information in collaboration with (or even in the absence of) anatomical evidence. As noted above, while sacrificed individuals may indeed appear as deviant burials in the archaeological record, it is not by any means the only reason that burials may be presented in an unconventional manner. Some of the most common alternatives are presented in Table 1. The better the contextual evidence, obviously, the more likely our interpretations are to be plausible. The methodology we used in order to identify sacrifice in our Pachacamac sample combine both anthropological and archaeological evidence.

Sacrifice differs from other violent acts by being almost invariably successful. Furthermore, as sacrifice is—in the Andean region at least—typically under strict social control (Swenson 2003), it is likely that the lesions sustained as a result of sacrifice would differ from those sustained by accident, combat or other means. It was therefore decided to contrast the fatal and non-fatal lesions in the sample. As well as this direct anatomical evidence for physical trauma, there is considerable evidence for “deviant” burial that helps to contextualize the traumatized individuals and also offers a potential means for identifying sacrificed people in the absence of pathological evidence. We can therefore

Table 1. Evidence and Hypothesis Related to Human Sacrifice in the Archaeological Record  
(modified from Albert et al. 2005:30).

Evidence in favor of sacrifice	Alternative hypothesis
Traces of violent death	War, battle, murder, accident, capital punishment
Non-standard body position or burial pattern	Special status of the individual
Simultaneous burial of several individuals	Catastrophic burial
Hierarchically linked body placement	Non-sacrificial hierarchy
Placing of the individuals with/instead of offerings	Space limitation in deposition area
"Special" setting of the individual	Accidental death
Peculiar bias in the population profile	Bias related to aberrant hyper-mortality

utilize three combinations: (1) Trauma and "Deviant" Burial; (2) Trauma Without "Deviant" Burial; (3) "Deviant" Burial Without Trauma. Each case was considered individually and all possibilities taken into account. In concrete terms, we first selected the burials that corresponded to one of these three possibilities.

The first combination is of course the most obvious, even if an interpretation other than sacrifice has to be considered (cf. Table 1). The second scenario is the most difficult to interpret with certainty, since numerous alternative explanations can be proposed, as stated above. The last scenario refers to all those individuals in unorthodox burial or deposition contexts—the contention being that numerous ways of killing leave no observable traces in the anatomical record. For all these reasons, we have introduced the notion of Potentially Sacrificed Individuals (PSIs): analysis of the anatomical and contextual configuration of each PSI would give the investigator a foundation from which to determine the likelihood of sacrifice for any given individual.

### Corpus Analysis

At the present time, around ninety excavations areas have been opened by the Ychsma Project, and human remains have been forthcoming from most of these. The project design includes plans for comprehensive studies of these—notably for biodistance, isotopic, and aDNA analyses—in order to establish the geographical origin and biological affinity of the individuals. This is especially important when addressing one of the main thrusts of the current research project—that of migration. While historically attested in the fifteenth and sixteenth centuries, the extent to which people traveled over large distances for the purpose of visiting religious

sites such as Pachacamac is uncertain (Eeckhout 2008). Likewise, the point at which such habits became apparent is unknown, and while analyses based upon the presence of exotic goods (i.e., *Spondylus* shells from the Ecuadorian border, Andean textiles) may be indicative, it is impossible to differentiate migration from trade on this basis. For the current paper, however, we are concerned primarily with the nature of sacrifice and its definition in cultural terms, which would not have been affected by having ascertained the individuals' place of origin. Further work on the application of scientific methods to these remains shall be forthcoming in due course.

The anatomical/pathological evidence for trauma was evaluated on the basis of 181 mummified and skeletal individuals from the site. The basic information about the individuals is presented in Table 2. Related contextual and stratigraphical information is detailed elsewhere in corresponding reports and publications (see Table 3). The remains were aged and sexed using developmental, pelvic, and dental methodologies as summarized in Buikstra and Ubelaker (1994). The unsexed individuals are predominantly subadults that cannot usually be sexed (the exceptions being mummified remains with retained soft tissue). Individuals classified as "adult" or "subadult" are

Table 2. Sample Used in the Present Study.

	Male	Female	Unknown
0–10	1	2	41
11 to 18	7	3	4
19–40	14	33	3
41 +	4	1	0
"Adult"	21	15	10
"Subadult"	1	0	19
"Unknown"	0	0	2
Total	48	54	79

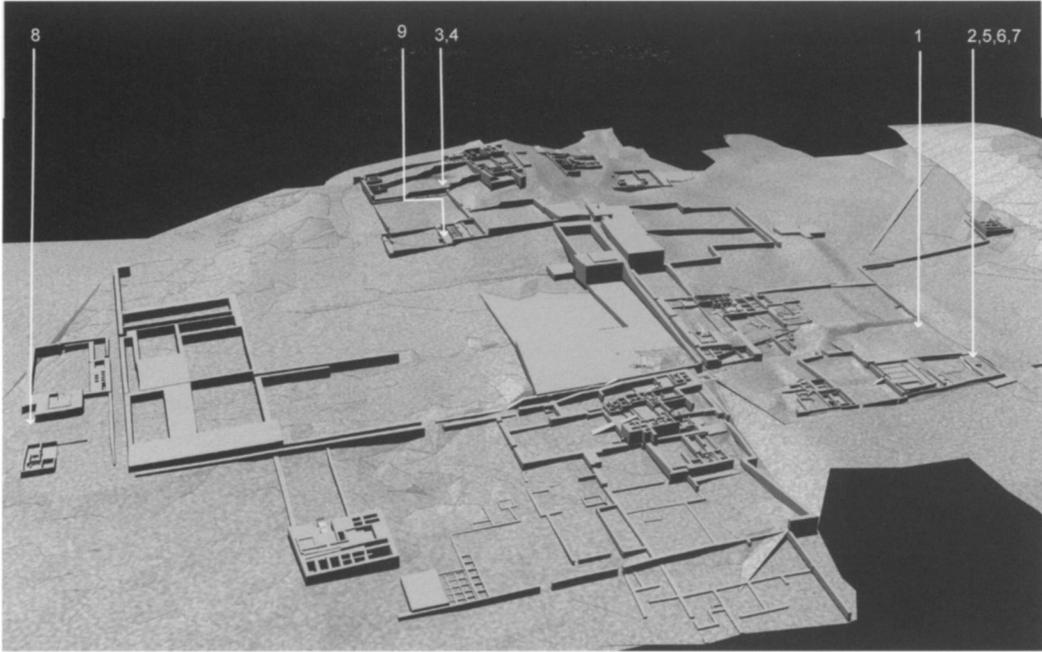


Figure 3. Partial 3D numerical reconstruction of Pachacamac (2005) with indication of the places where PSIs were encountered.

either badly preserved or were incompletely analyzed at the time of writing. Potentially Sacrificed Individuals (PSIs) were encountered in Pyramids 3A, 3C (also called Temple of the Monkey, for reasons explained below), 5, 13 and in the eastern corridor of the Central Plaza (Figure 3 and Table 3). In all cases, the PSIs have been subdivided into those with *peri-mortem* traumatic lesions, and those individuals who we believe may have been sacrificed based on the manner in which they were interred or deposited.

#### Trauma and Pathology

Of the 181 individuals assessed for the current study, 19 were affected by traumatic lesions (10.5 percent). In order to contextualize this in a global context, this figure was compared with data from Larsen (1997:116–154) and Owens (2003) (see Table 4). The trauma rate has been calculated on a by-individual basis, disregarding site, sex or side. Of these, six individuals had multiple lesions, while 13 had single lesions; the total number of traumatic lesions was 26. Nineteen lesions were cranial; seven were postcranial. Six cranial lesions were *peri-mortem* and possibly fatal; the remainder were healed and had occurred well before time of death.

All the postcranial lesions were healed. The cranial lesions were predominantly small, depressed fractures, oval to round in overall shape. A single maxillary process injury was noted, resulting in the loss of all the upper front teeth. The postcranial lesions included misaligned longbone fractures, rib fractures, and a single femoral neck fracture. Lesions were distributed across the cranium with particular emphasis on the frontal and the parietals. There were no lesions to the occipital or the facial

Table 4. General Comparisons for Pachacamac Trauma Prevalence.

Population	Sample	% Affected
Danish Mesolithic	-	43.8%
Rodeo Riders (USA)	71/181	39.2%
Neanderthals	5/17	29%
Swansport, Australia	31/110	29%
Prehispanic Canary Islands	106/560	18.9%
Rapa Nui	31/271	11.4%
Nubians	17/160	10.6%
Pachacamac	19/181	10.5%
Danish Neolithic	-	9.4%
Libben (N.America)	6/94	6.4%
Danish Middle Ages	-	5.1%
Danish Iron Age	-	4.7%
Viking Period	-	4.3%

Table 3. Potentially Sacrificed Individuals at Pachacamac.

PSI n°	Ref. N.	Sex	Age	Period	Unusual Context	Unusual Position	Trauma	Source
1	YCH04-E11	M	30-35	LH to early colonial	Yes	Yes	Slammed and strangled	Eeckhout and Farfán 2004:62-64, 127-131, 243, 269
2	YCH04-C2	Und.	6	Prob. End LIP-Early LH	Yes	No	Skull cut	Eeckhout and Farfán 2004:153-160, 244, 253
3	YCH00-u43-j-1	Skull		LH	disturbed	disturbed	Yes	Eeckhout and Farfán 2004:244
4	YCH00-u43-c-1	Skull		LH	disturbed	disturbed	Yes	Eeckhout and Farfán 2004:244
5	YCH05-E23	Und.	Subadult	Early LH	Yes	Yes	No	Eeckhout and Farfán 2005:66-67, 141
6	YCH05-E30	Und.	8	Early LH	Yes	Yes	No	Eeckhout and Farfán 2005:66-67, 150
7	YCH05-E27	Und.	4	Early LH	Yes	Yes	No	Eeckhout and Farfán 2005:66-67, 146
8	YCH04-E4	Und.	Baby	LH to early colonial	No	No	Buried alive	Eeckhout and Farfán 2004:244-245, 263
9	YCH00-E14	Und.	infant	LIP	Yes	Yes	No	Eeckhout and Farfán 2001:95-96

bones, save for the maxillary process. The peri-mortem lesions were concentrated on the rear aspect of the parietals and the occipital. They were large, crushing injuries that forced fragments of the bone inwards, and that left radiating crack lines that seem to have been caused by blunt force trauma. The exception to this was a badly preserved infant (PSI 2, see Table 3), which had crushing injuries to the right parietal and also cutting lesions to the left side of the frontal, possibly attributable to the tumbaga tumi that was recovered nearby. No peri-mortem traumas were recovered in any of the postcranial bones. Most notably, there were no cut-marks to the ventral aspects of the cervical vertebrae, a finding that is fundamentally at odds with many sacrificed individuals elsewhere in Peru, particularly those from Moche sites (Verano 2001a).

The *peri-mortem* traumatic lesions so far recovered possess a consistency that argues against random occurrence, and which may reflect a regularized sacrifice system. Of these, some are buried in a manner that differs from the majority of the population. The fundamental issue at hand relates to trauma, preservation, and context. Is it possible to identify cases of human sacrifice without trauma if they follow burial patterns usually associated with sacrificed individuals that do show traumatic lesions? For instance, the cemetery of sacrificed women was identified as being so predominantly on the strength of the discovery of ligatures around the necks of the mummies, which had good levels of soft-tissue preservation (Uhle 1903:84-8). If this has not been the case, however, it may have been impossible to identify their cause of death. Detecting trophy heads and differentiating these from disturbed remains in looted contexts is also problematic; if the inhabitants of the site treated skulls in a special matter, it has not been possible to positively identify it as yet. Trophy heads have previously been identified through cultural treatment; notable examples include decoration or inlay (i.e., the Aztecs) and the Nasca habit of piercing the frontal with a cord and breaking out the base of the occipital in order to enable display (Proulx 2001). While it is not possible to discount the possibility that such phenomena existed at the site, no evidence has so far been forthcoming.

#### *Trauma and "Deviant" Burial Correlations*

Two clear cases have been recovered, and both



Figure 4. PSI 1 *in situ*.

come from the same general sector of the site: the periphery of the Central Plaza. It is worth describing this sector since this helps to understand its importance and perhaps the presence of the PSIs. The North-South Street that permits external access to the site terminates at the entry of the Central Plaza (Figure 2), giving rise to a three-way junction: straight on to enter the Central Plaza, to the left through the Eastern Corridor (toward the Southeastern part of the site), and right through the Western Corridor all along the exterior side of the Central Plaza, leading into the famous Pilgrim's Plaza. The huge corridor walls are made of irregular stone blocks with *tapia* basements. This peculiar circulation layout was designed by the Incas in order to control the flux of visitors to the site during the Late Horizon (Eeckhout 2004d, 2008).

**PSI 1** was a highly atypical burial, located in the southern part of the Eastern corridor from the Central Plaza (Figure 4). The remains were of an adult male (about 35 years old), recovered from the southern corner of the corridor. The body—which was skeletal rather than mummified—had been laid out supine and in an extended position, with no burial goods except for traces of red pigment and loose

spondylus beads in the layer of fine sand covering his body. The posterior aspect of the right parietal was crushed with at least a single blow, with radiating fracture lines emanating out across the skull. The blow would therefore seem to have come from above and to the right—perhaps while the individual was kneeling. The apex of the instrument (possibly a club) left a distinctive mark superoanterior to the main lesion. The hyoid was undamaged; however, this is not necessarily significant as the hyoid bone and/or thyroid cartilages are rarely fractured in cases of strangulation using a ligature (Ubelaker 1992). The lower right leg was absent from the knee downwards. As this was the only burial in the area and the locale was otherwise undisturbed, this would suggest that this occurred to the individual at or around the time of burial although there were no signs of pathology, trauma, or cut-marks on the distal femur. This intriguing treatment and the archaeological context are suggestive, as PSI 1 was found within the abandonment layer of this important corridor. Both elements seem sufficient to reject the simple murder/execution hypothesis, and the conjunction of features point to a sacrifice related to the abandonment itself, probably at the



Figure 5. PSI 2 under excavation (the skull has been consolidated with bandages).

very beginning of the Spanish Conquest (when the Pachacamac Idol was destroyed, its cult prohibited and the population forcefully moved to the Rímac Valley to construct Ciudad de los Reyes [Cobo 1964 (1653), II:285–286]. It should be noted that the test pit in which PSI 1 was encountered measured only 4m<sup>2</sup>, so that it is possible that further similarly deposited individuals may be found nearby.

The second case comes from the Western corridor but seems to correspond to the foundation of this structure. **PSI 2**—a young subadult—demonstrates oblique cutting/slicing wounds to the left side of the frontal, and possibly a large crushing injury to the right rear parietal (similar to that of PSI 1, above),<sup>4</sup> although preservation of this area is not good (Figure 5). **PSI 2** was buried in the *tapia* basement of the Southern wall of the corridor, thus obviously associated with the construction of the latter. Interestingly, a *tumbaga tumi* (sacrificial knife) was found in a cache beneath the opposite wall in the same layer, not far from **PSI 2** (Figure 6). All these evidences suggest a sacrifice foundation performed at the very moment of building the corridor. It is interesting to note that other infant burials were found in the same layer and thus related to the same event; as these did not exhibit traumas, they are listed in the “Deviant Burial With-

out Trauma” section, below.

#### *Trauma Without Deviant Burial*

One of the plazas associated with Pyramid 3 is a large, open area with numerous fragmented burials dating to the Late Horizon and the early colonial period. Of the 20 that have so far been analyzed, two bear peri-mortem trauma that strongly resembles that of the individuals described above. It should be noted that this material cannot be assessed for burial traditions as all individuals have been partially or totally disarticulated by the activities of looters.

**PSI 3** displays a non-healed double trauma, with a linear depressed fracture on the right side of the frontal (3 cm long by .5 cm wide), associated cracking that runs to the coronal suture, and a 2-x-2-cm crushing lesion on the dorsal aspect of the right parietal with cracks radiating to the lambdoid and coronal sutures. The position of the cracks and their orientation makes it likely that the frontal lesion was sustained first, followed by the parietal lesion.

Another male skull (**PSI 4**) of a similar age demonstrated a 3 cm round healed lesion on the rear 1/3 of the sagittal suture, and a 3.4 cm crushing injury on the middle of the right side of the lambdoid suture (mainly on the parietal) with radiating fracture lines across the occipital and across



Figure 6. Sacrificial knife in a cache near PSI 2.

to the left parietal. Although these individuals obviously died from a violent death, similar to PSI 1 and 2, the disturbed nature of the context does not permit us to discard nonritualized murder or lethal battle injuries as possibilities.

#### *Deviant Burials Without Trauma*

The PSIs in the foundation layer of the Western corridor are all subadults ranging from 4 to 8 years old (see Table 3, **PSI 5, 6, 7**). They have no burial goods, with the exception of a guinea pig buried with **PSI 5**. Body position ranged from supine and extended (**PSI 5, 6**) to flexed (**PSI 7**). They are all closely associated with the architecture, to the extent of being located within the tapia bases of the main walls.

**PSI 7**—a flexed subadult of around 4 years of age—was buried immediately under the wall with the lowest course crushing the body and deforming the skull (Figure 7). Other than this, the body bears no apparent traumatic lesions indicative of sacrifice, but the context seems to suggest that its disposal—and possibly demise—may have had some specific social function. The level of the wall base is actually below the level of the skull due to the body being depressed by its weight; the individual was therefore protruding from under the

wall as it was constructed. There is no lamination of sediment between the body and the lowest course of stones, implying that the body was purposefully placed below the wall as it was being built. Finally, the bones are deformed and bent, but not crushed and powdery, which would seem to suggest that the bone was fresh at the time the wall was built.

It would therefore seem likely that the body was deliberately placed beneath the wall, possibly as some form of homage, sacrifice, or request for benediction of the construction works. These three infant burials and the one described above (**PSI 2**) seem to form a group that is stratigraphically and chronologically related to the construction of the Western corridor walls, and thus possibly related to its foundation rituals. Indeed, in addition to the evidence cited so far (burial characteristics, the trauma/sacrificial knife, and the architectural associations), it is worth noting that this corridor faces the Temple of Pachacamac (the god of earthquakes, among much else), and covers a huge pre-Inca cemetery spreading from the Temple's foot toward the north (Eeckhout 2009; Eeckhout and Farfan 2004, 2005; Uhle 1903). We believe it plausible to suggest that in order to sanctify their own building as to please the god Pachacamac and calm the possible wrath of the ancestors buried beneath, the



Figure 7. PSI 7 *in situ* under the lower course of a wall of the Western Corridor.

Incas performed a series of child sacrifices. This would be consistent with the archaeological evidence, and also resonates with ethno-historic records (see below).

**PSI 8**, found near Pyramid 5, was a highly unusual case. The pyramid is situated between the second and third enclosures, and was probably modified by the Incas (Eeckhout and Farfán 2004). A series of Late Horizon funerary bundles were discovered by the main platform's external western wall, buried into superficial sand and without formal funerary structures. Associated textiles are all plain, and no grave goods were associated. This sample of burials includes **PSI 8**, a late period infant (<1 year) interment. The mummy was loosely

wrapped with bandages and was buried in an angled crouched position. Suspicions were first aroused when the body was partially unwrapped to reveal a very unusual burial position; the legs were partly but unequally extended (the lower half of the body was badly preserved), and the right elbow was thrust out at a right angle to the body, and was partly out of the bandages (Figure 8). It should be remembered that arm position is invariable in the other burials at the site, being drawn into the chest under the chin, sandwiched between the legs and the torso. Further investigation revealed the presence of coprolites inside the mummy wrappings, a unique finding at the site. No marks of trauma were present on the body of the individual. This speci-

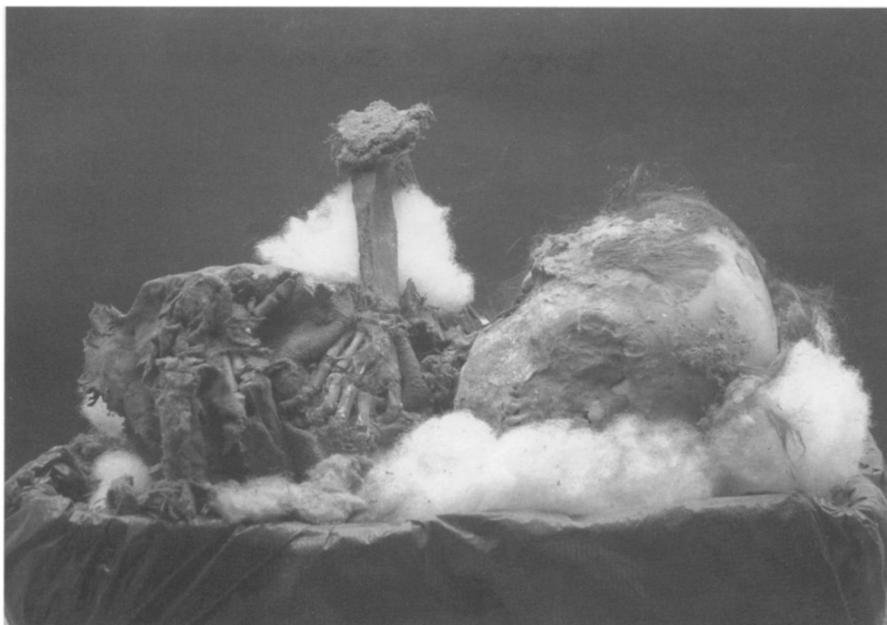


Figure 8. PSI 8, an infant probably buried alive.

men dates to the Late Horizon or Colonial period, which is in itself suggestive as the Inca are known to have practiced live burial. However, the clearest cases originate in locales that were more conducive to soft-tissue preservation. While taphonomic circumstances do not permit a definitive diagnosis, therefore, there is considerable circumstantial evidence to suggest that this individual represents a live burial of an infant.

The last case comes the Temple of the Monkey that lies to the west of Pyramid 3, and which is distinctive in terms of both architecture and occupation (Eeckhout 2003; Farfán 2004). It was built occupied in the Late Intermediate Period, probably between A.D. 1300 and 1460 (Eeckhout 2004c; Michzinsky et. al.2007). One of the platforms contained the eponymous monkey mummy: beneath this, within the layer of constructive fill of the structure, was the body of a young child lying on its right side, oriented east-west, with legs and arms flexed and face turned northwards. The body was resting on a fine layer of selected sand with traces of maize (Figure 9) and was covered with a textile and was associated with a pointed staff 80cm long, broken into several pieces, as well as several ceramic copies of poisonous *Nectandra* seeds (Eeckhout 2006; Montoya 2004). The burial is related to the foundation of the Temple itself, as a series of architec-

tural and other evidence clearly shows. No traumatic lesions or cutmarks were noted on the bones. The age and apparent status of the individual and the position of the burial within the pyramid seems to suggest special treatment that is possibly linked to sacrificial deposition, which would perhaps best be described as deviant *sensu lato*. In the absence of more compelling evidence, however, this assertion remains speculative.

The results of our analysis has be summed up in Table 5. It should be noted that all the sacrifices date to the Inca period of occupation. We will see this has some interesting implications in the general framework of human sacrifice in the ancient Andes.

## Discussion

Possibly the most comprehensive analysis of the phenomena underlying sacrifice in the Andean region was carried out by Swenson (2003), who linked sacrifice with the evolution of power relations and stated that the “elite areas of ritual violence” (2003:257) were integral to the establishment and maintenance of political control, especially when linked with the exercise of ritual and religious power. The archaeological evidence is notable for its lack of consistency, as



Figure 9. PSI 9 in situ in the constructive fill of the Temple of the Monkey.

human sacrifice appears to have served different functions at different times and in different cultural groups.

Contact period sources frequently make reference to ritual human sacrifice in the prehispanic Central Andes (Cieza 1994:II: ch.28; Cobo 1964:XIII: ch.13 to 18, 31, 32, 36; Molina de Cuzco 1943:69–78; Murúa 1946:III:ch.44, IV:ch.2; Polo 1917:ch.9), when most of the Andes was under the control of the Inca Empire. Rowe (1946:305–306) states that human sacrifices were performed only in exceptional circumstances, citing the example of the *Capac Hucha*, a complex ceremony involving a series of rituals that included the sacrifice of children (Duviols 1976; Salomon 1995; Velasco de Tord 1978). This tradition has been confirmed archaeologically (Ceruti 2003; Dorsey 1901; McEwan and Van de Guchte 1992; Mostny 1957; Reinhard 1992, 1997, 1999; Schobinger 2003), although such evidence is scarce. Indeed, most archaeological evidence for human sacrifice in the ancient Andes dates from much earlier periods (Benson 2001; Benson and Cook 2001; Verano 1995, 2001b). In many cases, the victim seems to be playing the role of a

retainer to the main deceased personage, notable examples of which include the Moche culture of the North Coast's Early Intermediate Period (ca A.D. 1–750: see Alva 1988, 1990; Alva and Donnan 1993; Donnan 1995:150–151; Donnan and Mackey 1978:200–207; Hecker and Hecker 1992; Strong and Evans 1952:150–167; Ubbelhode-Doering 1983:53, 90, 107–13), the Sicán culture of the Middle Horizon to Late Intermediate period (ca. A.D. 600–1000 to ca. A.D. 1000–1475—Shimada 1995) and the later Chimu culture of the Late Intermediate Period (Conrad 1981:13, 1982:100; Pozorski 1980; Verano and Walde 2004). Other contexts suggest ritual killing of captives, probably warriors, at Pacatnamú (Verano 2007, 2008), El Brujo (Verano 2006), and the Huaca de la Luna (Bourget 1998; Montoya 1996, etc). It is possible that the latter were performed within the framework of ceremonies related to exceptionally devastating climatic events such as the ENSO phenomenon, although iconography and other finds suggest also that the ceremony included the ritual killing of enemies captured in combat (Alva and Donnan 1993).

Sacrifices were not common in Wari archaeo-

Table 5. Sacrifice Evidence at Pachacamac.

PSI n°	Sacrifice	<i>Modus operandi</i>	Possible motivation
1	Yes	Blunt Impact (?Strangled)	Ritual abandonment
2	Yes	Skull Cut (?Blunt Impact)	Foundation sacrifice
3	Uncertain	Skull Blunt Impact	/
4	Uncertain	Skull Blunt Impact	/
5	Probably	Undetermined	Foundation sacrifice
6	Probably	Undetermined	Foundation sacrifice
7	Probably	Undetermined	Foundation sacrifice
8	Probably	Buried alive	Retainer/ Offering to Pachacamac
9	Uncertain	Undetermined	/

logical horizon (Kaulicke 2001:509). At Conchopata, for example, Isbell cites only one case of a mass burial comprising 5 young females, that he considers as a probable group of sacrificial victims (Isbell 2004:16). Indeed, the most notable form of possible sacrifice is the collection of trophy heads recovered from two ritual structures at the site (Cook 2001; Tung 2007, 2008). The Incan sacrifice of children on solemn occasions—such as the eve of war or to cast benediction upon some other notable event—has been documented both historically and archaeologically (Rowe 1946:305–306). Severed “trophy” heads from Southern Coast Nasca culture are also likely to be related to the sphere of war (Silverman and Proulx 2002) and were probably removed from vanquished opponents, as are the severed forearm “trophy” bones reported upon by Andrushko (et al. 2005). However, in the majority of Andean cases the vanquished opponent was humiliated through mutilation and execution through formalized sacrifice procedures (Swenson 2003) and incomplete interment, with much less emphasis on trophy-taking (Verano et al. 1999).

Verano (2006:9) states that there are two distinct patterns of human sacrifice identified at Prehispanic Peruvian sites: “(1) carefully-arranged burials of children or adolescents accompanied by elaborate grave goods as offering to temples or retainers in high status tombs, and (2) male captives buried in non-mortuary (...) contexts without grave goods or considerate treatment of the body. Evidence of violent death is commonly found in the latter, but not in the former.” This is certainly true of all situations where victims of combative contact have been positively identified, although there are times in which it is impossible to ascertain the identity of the victim, and by definition we may be missing less-dramatic examples. It is also important to consider the possibility that the individuals represent low-

ranking soldiery who died of combative wounds. This highlights the importance of examining the corporeal distribution and nature of lesions within the site (or period, or region) as a whole.

Insofar as it can be determined, the Pachacamac individuals do fall into these two categories, although the precise implications of the findings are debatable (see below). Within the later Sicán tradition, Shimada (1995) excavated elite burials containing female and children retainers, none of which demonstrated any trace of peri-mortem violence. Our data on Ychsma practices during pre-Inca and Inca times seem to follow the same general pattern as their Chimu contemporaries on the North Coast, perhaps as regional variations from a common coastal pattern (see Eeckhout 1998, 2005b).

One major difference seems to be the form of sacrifice—the way in which people were killed. As stated above, Peru’s best-known sacrifice cases are probably those pertaining to Cupisnique and Moche society. Indeed, in all North Coast cases (also including the Sicán and Chimu), the dramatic nature of the activity marks out sacrifice as a sanguineous, punishment/execution process, involving decapitation, massive trauma and mutilation (Cordy-Collins 2001; Verano 2005) carried out against captive enemies and hostages (Sutter and Cortez 2005). The difference between these sanguineous (it is likely that extravagant blood-flow was the main aim) sacrificial phenomena and the Pachacamac individuals is marked: blunt force trauma is present, but only one demonstrates evidence of slicing wounds; curiously, cut marks on cervical vertebrae and other bones, so common among Moche sacrifice victims (Verano 2001a, 2001b), are totally absent from our database. We know that ligature strangulation was a common form of execution in Uhle’s cemetery of sacrificed women (1903), although poor preservation has pre-

vented us from finding any more such evidence. We also suspect live burial as a likely sacrifice method. While it is of course possible that we have yet to sample the full range of sacrificial methods present at the site, these two techniques account for the majority of observed cases.

Early Colonial writings make frequent reference to human sacrifice in the terminal Inca period: "the most valuable sacrifice was of human beings, who were offered to the most important divinities and huacas on the most solemn occasions, such as pestilence, famine, and war reverses, at the coronation of a new Emperor (when 200 children were sacrificed), when the Emperor went to war in person, or when he was sick" (Rowe 1946:305–306). Children are believed to have been buried alive as sacrifices at Pachacamac (Cobo 1964:XIII:ch. 36), while Santillán (1879:32) notes that young girls were offered to Pachacamac, and were buried alive for this purpose. Guamán Poma (1989:265) indicates that child sacrifices in honor of Pachacamac were regularly performed following the Inca ritual calendar, a fact confirmed by a native of the area, Avila's informant:

Todos los años le ofrecían un capac hucha [sacrificándole] gente [de todas las provincias] del Tahuantinsuyo, mujeres y hombres. Cuando llegaban a Pachacamac, enterraban vivas [a las víctimas de] ese capac hucha diciendo: « Helos aquí; te los ofrezco, padre ». De la misma manera, [le ofrecían] oro y plata y no dejaban [de sacrificarle] llamas y de hacerle ofrendas de bebida y comida en la época de la luna llena » [Avila 1987:ch.22:331].

Another source notes the tradition of casting young girls from elevated spots in order for them to accompany curacas in death (Polia 1999:296). Pachacamac's attributes include fertility and fecundity. He is, among other things, related to earth and agriculture (Calancha 1975:I:ch.22; Cobo 1964:XIII:ch. 36; Jerez 1965:96). Babies were sacrificed in order to obtain a good harvest (Polia 1999:449–50); they were traditionally buried in the fields in question. Such practices denote a desire to literally provide life for the earth: feeding it live human beings.

It is interesting to note the correlation between the Inca tradition of physical perfection in their child victims and the low-impact sacrifice meth-

ods used on many noncombative sacrificial victims (strangulation, poisoning/drugging, and choking). Respect for the body is something that appears very clearly in the famous Inca "ice maidens" and other sacrificed children found by Reinhardt and his colleagues on different mountain peaks of Tahuantinsuyu territory (Ceruti 2003). Ceruti explains in details the reasons why these individuals in particular were chosen: age, physical beauty (manifested by an immaculate skin), and social origins were the most important criteria. Causes of death include some cranial trauma, strangulation (Reinhardt 1997, 1998; Schobinger 2001) or undetermined (Ceruti 2003).

From the broadest heuristic perspective, there seems to be some form of dichotomy in human sacrifice traditions from the North (sanguineous) and Central Coast (nonsanguineous), suggesting specific symbolical meanings related to cultural peculiarities hardly accessible in the present state of research, considering the reduced sample of related data in both areas. However, this shift in mortuary practice with regards sacrifice is an area that should be addressed.

### Concluding Remarks and Further Recommendations

The large traumatic lesions were restricted to adult individuals (males), the cutting lesions of **PSI 2** being an exception to the rest of the corpus. While most of the specimens were unfortunately recovered from mixed or looted contexts, the consistency of the peri-mortem lesions (positioned on the posterior aspect of the parietals and the occipital) seems to infer a more regularized manner of delivery than the fairly random distribution of healed lesions found in the remainder of the sample (see above). The remaining PSIs were subadults, with no physical evidence for sacrifice; their identification therefore relied more strongly upon the position of the body and the burial context.

On the basis of the Pachacamac evidence, we would support Verano's assertion that sacrificed individuals do fall into two main groups (infants/children and adult males). However, we also recognize that defining the adult male group as vanquished combatants is based largely upon the pioneering work carried out on the sacrificed males at Moche sites (Sutter and Cortez 2005), and it is

only through dental or isotopic/genetic studies that geographical disparity can be ascertained. At the present time, therefore, **PSI 1** and the 2 male skulls (**PSI 3** and **4**) cannot conclusively be demonstrated to be exotic to the site. In the case of **PSI 1**, the isolation of the individual and the careful (if atypical) mode of burial adjacent to the scared precinct is unusual when compared to the large and chaotically deposited Pacatnamu sample (Verano 1986). Incidentally, it should be noted that the variety in form of sacrifice in the current sample may reflect the deep stratigraphy, and that temporo spatial trends may become more apparent with wider exposures at the site.

We thus endorse Verano's theory and propose that researchers take active measures to broaden their perspectives on PSIs by considering that many individuals who died in such a manner may not display skeletal (or soft tissue) trauma, and that the only indicator of the reason behind their demise might lie in the fact that their deposition falls outside the remit of burial practice for the site, culture, or population. We would also propose that the anatomical and contextual findings from the site of Pachacamac reflect a shift from the somewhat sanguineous cultures such as the Nasca and the Moche, to the perfection-obsessed sacrificial modality of the Incas. The former seems to be concerned primarily with retainer burials and the punishment of enemies or opponents, which were offered to an uncertain eternity as a gesture to some higher power. In the case of the latter, the sacrifices were intended to bless objects or missions, give thanks, or to appeal for supernatural favors or assistance.

Central and Latin America is perhaps the region of the world that is most strongly associated with human sacrifice. In a sense, therefore, the fact that there is such extremely dramatic evidence for sacrifice on the Northern Coast and elsewhere inhibits the reporting and even identification of more transient—yet still valid—evidence for sacrifice. It should therefore be made explicit that evidence for sacrifice does not exist solely in decapitated and mutilated corpses, for in a wider context these are as exceptional as Capacocho burials. Furthermore, burial convention is a far more sensitive barometer of social attitudes than the sacrificed/nonsacrificed dichotomy, and careful analyses of combined relevant factors (including health, diet, demographics, trauma, inferred wealth, and burial posi-

tion) will always produce a more balanced view of ancient lifeways than any of these in isolation.

We have several recommendations for future study of deviant burial, in the Andes as much as elsewhere. First, every team must include a physical anthropologist, if one is to avoid missing important information about burial traditions and their significance. Second, great attention must be paid to the precise position in which human remains are interred, with a full written description being performed by the physical anthropologist in addition to extensive field notes, drawings and photography of the remains, their burial context and all associated elements (offerings etc). Third, the data concerning burial position should occupy a key role in the analysis of burials, along with cultural variables such as trauma and the quality/quantity of grave goods, as well as demographic factors such as age and sex. All the specialists should independently produce their evidence and merge it; only then will a "diagnosis" of deviant burial be viable.

*Acknowledgments.* The investigations at Pachacamac were funded by the Université Libre de Bruxelles, the Fonds National de la Recherche Scientifique and the Fonds de la Recherche Fondamentale Collective (Belgium), the Committee for Research and Exploration of the National Geographic Society (Washington) and the Mary G. and Curtiss T. Brennan Foundation (Santa Fe). In Peru, the research was authorized by the Instituto Nacional de Cultura. We wish to acknowledge the support and help of Carlos Farfán, Peruvian codirector of the Ychsma Project, all our field staff, and also the Museo de Sitio de Pachacamac for its assistance and logistic support. Valérie Decart (CRéA topographer), Nathalie Bloch and François Degesve (ULB-CRÉA infographic staff) deserve our warmest thanks. Thanks are also due to Edeltraud Aspöck, Jo Buckberry, Tiffany Tung, and Andrew Reynolds for providing us with copies of their forthcoming work. Finally, we wish to express our greatest gratitude to Michel Graulich, John Verano, and the anonymous reviewers for their insightful comments on earlier versions of the manuscript; remaining errors are, of course, our own.

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## Notes

1. The precise significance of the somewhat gory reliefs at the site of Cerro Sechin, for example, is open to interpretation (see Burger 1992:77–80).

2. Recent evidence for gunshot wounds and impalement have also been forthcoming in recent excavations on the central coast area (<http://news.nationalgeographic.com/news/2007/06/070620-first-gunshot.html>).

3. Trophy-taking has also been noted from other North and South American sites, taking the form of Inca trophies such as flutes and drinking vessels made from human bones (Verano 1995:192), trophy radiuses taken from individuals at Pacatnamú (Verano 1986), to drilled and polished forearm bones taken from enemies and worn as ornamentation (Andrushko et. al. 2005).

4. This general pattern is repeated in Pachacamac Museum Specimen 1539 (a 30-35 year-old male), a surface find of uncertain provenance and with some surface weathering. The skull shows a 2x3 cm unhealed lesion on the posterior portion of the left parietal, with a large peri-mortem crack running dorsally to the lambdoid suture.