Sacrificed captives or venerated ancestors? A new insight into mass sacrifices from the Preclassic Southern Coast of Guatemala

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Shintaro Suzuki, Héctor Mejía and T. Douglas Price

Introduction

The Pacific Coast of Guatemala constitutes one of the least investigated regions of Mesoamerica, not only archaeologically [Chinchilla 2020] but also bioarchaeologically. In the adjacent Mexican Soconusco region, recent studies [e.g. Blake et al. 1992; Chisholm and Blake 2006; Rosenswig et al. 2015] focus more on bioarchaeology. They have examined "old" remains excavated during previous decades [cf. Ceja Tenorio 1985; see also Love 1989] through the new techniques and discuss novel topics, such as Archaic subsistence in the region. There are naturally archaeological investigations of high impact on the South Coast of Guatemala, especially during the last decades of the 20th century [e.g. Coe 1961; Shook 1973; Shook and Popenoe de Hatch 1978]. There are also several works on human burials, for example, at El Ujuxte [Arredondo 2000, 2002], at Balberta [Arroyo 1987, 1990], and at Montana [Genovés 1997]. However, unlike Soconusco, most Guatemalan bioarchaeological studies were conducted by archaeologists with a particular interest in funerary treatments. Since then, there has been little attempt to re-evaluate human remains through new approaches.

Based on these situations, we have conducted bioarchaeological studies in the coastal region in the framework of the Regional Bioarchaeology Project in the Southwest Periphery of the Maya Area (by S. Suzuki), in collaboration with the *Proyecto de Registro y Rescate Arqueológico del Plan de Expansión del Sistema de Transporte de Energía Eléctrica en la Región de la Costa Sur y el Altiplano del Territorio Nacional Guatemalteco / TRECSA*, headed by H. Mejía, and with the *Centro de Investigaciones Arqueológicas y Antropológicas* (*CIAA*) of the *Universidad del Valle de Guatemala* (*UVG*).

This chapter is one of the products from the Project and is organized as follow. We first introduce the archaeological site of Sin Cabezas, Escuintla. The site was investigated about 30 years ago, and we re-visited its skeletal sample after decades of "abandonment". We continue with Reynosa, Escuintla, a vast site today hidden in a sugar cane field. H. Mejía recently excavated a massive burial there. We have worked on various aspects in both samples, so we summarize our bioarchaeology from both sites (Figure 1).

Besides, an important subject stood out throughout the

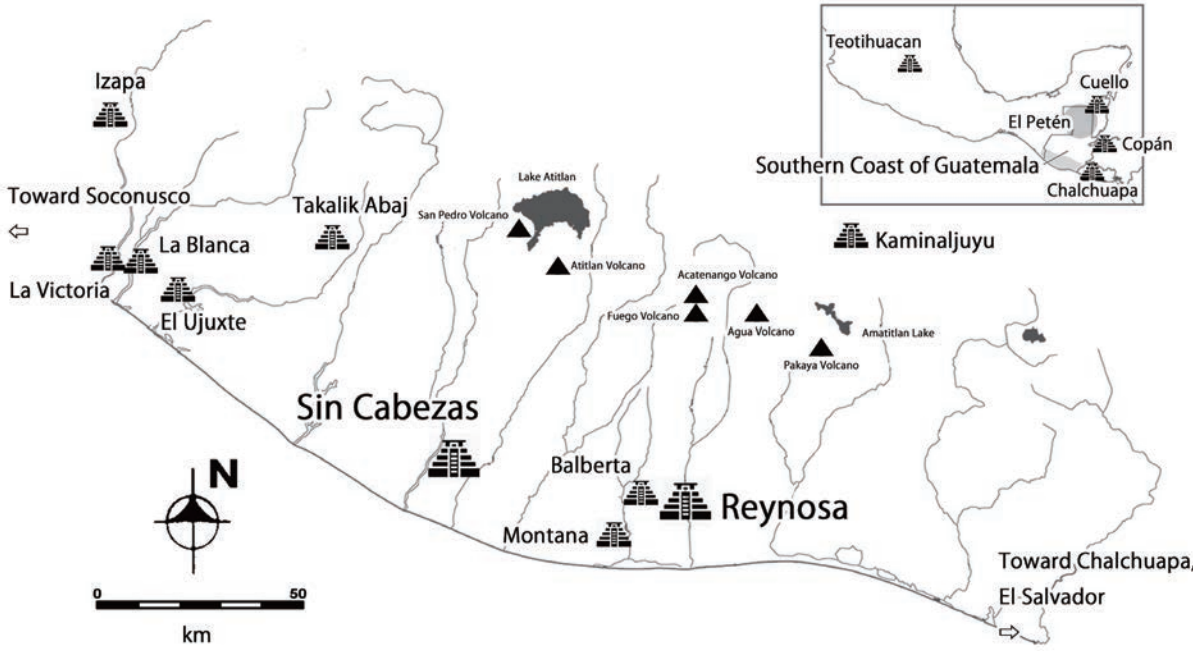

Figure 1: Sites mentioned in this chapter with some geological and archaeological landmarks. Sin Cabezas and Reynosa are marked with emphasis. Map elaborated by S. Suzuki based on the drawing by Chinchilla [2020, Fig.1].

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Project, not only in Sin Cabezas but also in Reynosa. It was the human sacrifice, especially the technical uncertainties in identifying it *in situ* and its theoretical abuses in archaeological terms. Although the topic was recently discussed in detail elsewhere [Suzuki 2021], we would like to return to it here. In this part, we add our new isotopic measurement results from Sin Cabezas and Reynosa. Because the identification of non-local victims was a key in some cases [Hoffmeister 2019], our isotopic results may provide a new perspective to interpret the Terminal Preclassic mass burial contexts, such as the cases of Chalchuapa, El Salvador, or Cuello, Belize. Are they sacrificed captives or venerated ancestors?

Overall Results of the Project

Sin Cabezas

The site (Figure 1) was first reported by Edwin Shook [1950] and was subsequently surveyed by Frederick Bove and Marion Popenoe de Hatch as a part of the Tiquisate Project [Bove 1989; Popenoe de Hatch 1987]. The work revealed a relatively dense concentration of settlements in the basin and that Sin Cabezas was one of the most important sites in the area during the Late-Terminal Preclassic [Whitley and Beaudry 1989].

From 1986 to 1992, Sin Cabezas was formally investigated by Marilyn Beaudry from UCLA. This project yielded 83 burials [Beaudry and Whitley 1989; Beaudry-Corbett 1990, 1991, 1992, 1993]. If we account for the mixed and disturbed miscellaneous remains, the sample probably amounted to more than 100 individuals. It was the largest skeletal sample ever recovered from the South Coast of Guatemala.

We are not the first who worked on the sample. That was Susan M. Colby [1991, see also her technical reports in Beaudry and Whitley 1989; Beaudry-Corbett 1991, 1993], the anthropologist of the UCLA project at the time. Thanks to her study, we know that there was high infant mortality, similar to other skeletal collections, such as Copán. Diet was concentrated in maize, with a severe nutritional deficiency, shortage of animal protein, calcium, and vitamin C.

However, it is necessary to recognize that after her study, the sample was practically abandoned in the storehouse (CERAMOTECA) of the *Instituto de Antropología e Historia de Guatemala* (IDAEH), the Guatemalan governmental authority of the archaeological material. When we visited the sample after decades, the bones were found in extremely deteriorated cardboard boxes and plastic bags. The context information marked on the bags was gone, and the correlative numbers of the boxes were lost. We would like, thus, to emphasize first the contribution of our project in this logistical aspect. Now the remains were re-evaluated based on modern osteology and re-organized according to all available information about the excavation context. They have been moved to a secure facility of the *Universidad del Valle de Guatemala* and relocated to new, appropriately labeled, plastic boxes (Figure 2). Of course, everyone interested in the sample can access them through the same governmental procedure.

As good products, it is worth mentioning two projects of

Figure 2: Storage of bone materials from Sin Cabezas in CIAA, UVG. Photos by E. Viñals.

undergraduate thesis research carried out by students of *Universidad del Valle de Guatemala*, one of our collaborative institutions of the Project. María Mercedes Acevedo [2021] focused on infant remains with pathological deficiency. There were very few individuals (n=5), so statistical tests could not be applied according to the quotidian protocol of modern bioarchaeology. However, the author introduced a new theoretical framework called "osteobiography" [cf. Hosek and Robb 2019] and was able to visualize the high-stress life of the infants who lived during the transitional time of the Terminal Preclassic. It was a vivid story told beyond the simple description made by Susan Colby [1991] in her first anthropological survey in the 1990s. Esteban Viñals [2022] more recently examined the dental pathologies of the adult population. Viñals evaluated dental caries and tooth wear of all available teeth in the sample and conducted several comparisons according to sex, age groups, and chronology. According to his results, the daily diet at the site did not change during the Late Preclassic and the Classic, perhaps indicating occupation by the same group with no significant cultural changes. The group had a lifestyle similar to other large pre-Hispanic urban centers, such as the Classic Copán.

Reynosa

Reynosa is located between the Acome River to the west and the Cojolate River to the east (Figure 1). Bove [2011] first reported the site in the 1980s as belonging to the Middle - Late Preclassic based on surface collected material. However, after the brief description, the academy has not considered the site until the re-discovery by Héctor Mejía. The Guatemalan archaeologist intervened at the site as a rescue operation and confirmed that it was a sizeable settlement with a possible association with the Olmecs of the Gulf of Mexico [Mejía 2017]. The major characteristic of the site, however, is a massive burial discovered in Mound 5. Indeed, the collaborative invitation that S. Suzuki received from H. Mejía to study this massive burial was the beginning of this Project.

In this skeletal sample, we also addressed several bioarchaeological topics. We first suggested that nixtamalized maize was not yet consumed by the population [Suzuki and Mejía 2017; Suzuki 2018]. Dental caries prevalence, tooth wear, reconstructed stature through long bones, and some preliminary results of carbon and nitrogen isotope measurement were combined and compared with what was reported from Copán, where a wide range of bioarchaeological studies are available. And then, the most feasible interpretation seemed to be different treatments of maize subsistence. Perhaps the nixtamalize technique was known already; however, the soft, rich, and nutritionally improved (nixtamalized) corn *masa* was not available for the whole population, somehow including the individuals studied here.

We also obtained relevant results on the raw material used in one of the earliest dental inlays in Mesoamerica through the scanning electron microscopy/energy dispersive X-ray spectroscopy (SEM/EDS) analyses [Suzuki et al. 2018; Sandoval et al. 2020]. Burial 38 and Burial 20 were the very early dental inlay carriers based on the radiocarbon analysis, associated ceramics vessels, and the excavation stratigraphy.

Burial 38 was an adult male, one of the presumed chiefs of the site who was the first to be buried in the context, and he had inlaid teeth with a material called goethite (glints like graphite). It is worth noting that he was at the deepest layer of the excavation. There was more than a 50 cm distance from the nearest upper strata with human burial. His interment, thus, could be a previous and separate event from the mass burial. Radiocarbon analysis also indicated he was earlier than the rest of the mass context, by around 200 years. Burial 20 was a secondary context [ritual bundle, Mejía 2016] containing the incomplete remains of an adult female. Her dentition showed a curious matrix (Figure 3); only the labial surfaces had a few small, embedded fragments of pyrite (brilliant like gold).

Based on this, the authors interpreted that the beginning of the dental inlay probably took place on the Pacific Coast, using the metallic glitter. After several centuries, a generic technique was developed that embedded small metallic fragments into the matrix, based on sand, soil, and some organic material. Perhaps the plasticity of the sand matrix made it easier to manufacture

Figure 3: Dental inlay from Burial 20. Photo by S. Suzuki.

the ideal morphology to be fitted to the enamel cavity, and the embedded fragments granted the same brightness as the whole metallic inlay. These are naturally preliminary interpretations subject to further examinations; however, it is noteworthy that it was the first attempt to renew the perspective on the origin of dental inlay since J. Romero [1958. See also 1986a, 1986b] postulated it in the Oaxaca Valley more than 60 years ago.

Sacrifice in the Southern Periphery

Technical uncertainties and theoretical abuses

From the beginning of our Project human sacrifice has been one of the most critical issues, especially in dealing with the Sin Cabezas and Reynosa samples. Colby [Beaudry and Whitley 1989; Beaudry-Corbett 1991, 1993] identified almost 20 sacrificed individuals from her first observation at Sin Cabezas. According to the author, they were companions of tombs or dedicated to large constructions, depending on their context. Mejía [2016, see also Mejía and Suzuki 2016] has also interpreted human sacrifice at Reynosa. From the first discovery of Mound 5, Mejía explained that there were possibly two important persons, leaders or chiefs of the site, and sacrificial rituals of dozen people commemorated their deaths.

Throughout the Project, Suzuki [2021] questioned the veracity of these sacrifices and pointed out influences, somehow negative, from the case of Chalchuapa, El Salvador (Figure 1). We present that case in detail.

Chalchuapa is a highly recognized archaeological zone located in present El Salvador, and consists of multiple sites: El Trapiche, Casa Blanca, La Cuchilla, Nuevo Tazumal, Tazumal, Peñate, and Las Victorias [Cobos 1992; Sharer 1978; see also Ichikawa 2017]. The Zone has a long occupation history from the Early Preclassic [ca. 1200-900 B.C.] until the Postclassic period (ca. A.D. 1400) and is thought of as one of the most powerful political entities of the southern periphery.

While the dimensions of the early structures are impressive, one of the criteria by which the dominant role of the site was judged, at least for the Terminal Preclassic, was the argument of Fowler [1984]. The researcher focused on the burials recovered in Structure E3-7 at the site of El Trapiche and argued that they were sacrificial victims: indeed, they were the captives of wars. According to the author, the political entity of Chalchuapa expanded regionally using militia and sacrificed war captives at a relatively isolated structure (E3-7) 240m west of the Central Plaza of the site. Thus, its political power was consolidated.

In order to evaluate the sacrifices at Sin Cabezas and Reynosa, in the context of the widely influential work by Fowler located closely, both spatially and chronologically, Suzuki [2021] focused on Fowler's criteria and contrasted them with those of Colby and Mejía. First, Colby's contexts differed from those of Fowler and Mejía. Those of Sin Cabezas were some individual sacrifices, mingling with funerary contexts in residential structures. So her criteria included funerary offerings, and even any unusual treatments were considered. On the other hand, the contexts of Fowler and Mejía were thought to be mass sacrifice. The structures of both E3-7 and Mound 5 were considered ritual spaces. Here the contextual and stratigraphic criteria were critical, where considerable quantities of bodies were found in very close layers. In both cases, these criteria alone are insufficient to determine sacrifice. The absence of grave goods in itself does not indicate any sacrifice. It is always possible that there were some organic offerings in perishable material. Although the abnormal and crowded concentration of bodies may suggest the structures were unique ritual spaces designed to contain the sacrificed bodies and to commemorate the sacrificial events, crowded burials *per se* are not indicative of mass sacrifice. It is known from Landa's time that the deceased were buried under constructions [Landa 2010[1566]], and it is common practice to find a high number of human skeletons when conducting any excavation in residential groups [e.g., Hendon et al. 2014; McAnany 2013; Welsh 1988]. However, a simple interpretive inference of sacrifice based on these insufficient criteria begins to have the gesture of "true identification" when combined with two more criteria. These are the ventral depositional and peri-sepulchral behavioral criteria, the latter involving binding and/or mutilation of limbs or decapitation.

Suzuki [2021] questioned these two criteria too, which seem to have been the most important ones after Fowler´s framework. His recent bibliographic examination revealed that the ventral position does not indicate any sacrifice either. In broad literature, there are numerous and clear funerary cases with ventral deposition, not only in the early horizon of the southern periphery [Amarolli 1987; Arredondo 2000, 2002; Arroyo 1987, 1990; Ichikawa 2017; see also Weiss-Krejci 2003] but also in Mesoamerica in general up to the Postclassic period [Pereira 2017].

The author also postulated doubts about behavioral criteria such as binding, mutilation of limbs, and/or decapitation; since they are also, in reality, archaeological interpretations based on the distributions of remains, i.e., how the bones were found *in situ*.

For example, at Chalchuapa, individuals whose hands were

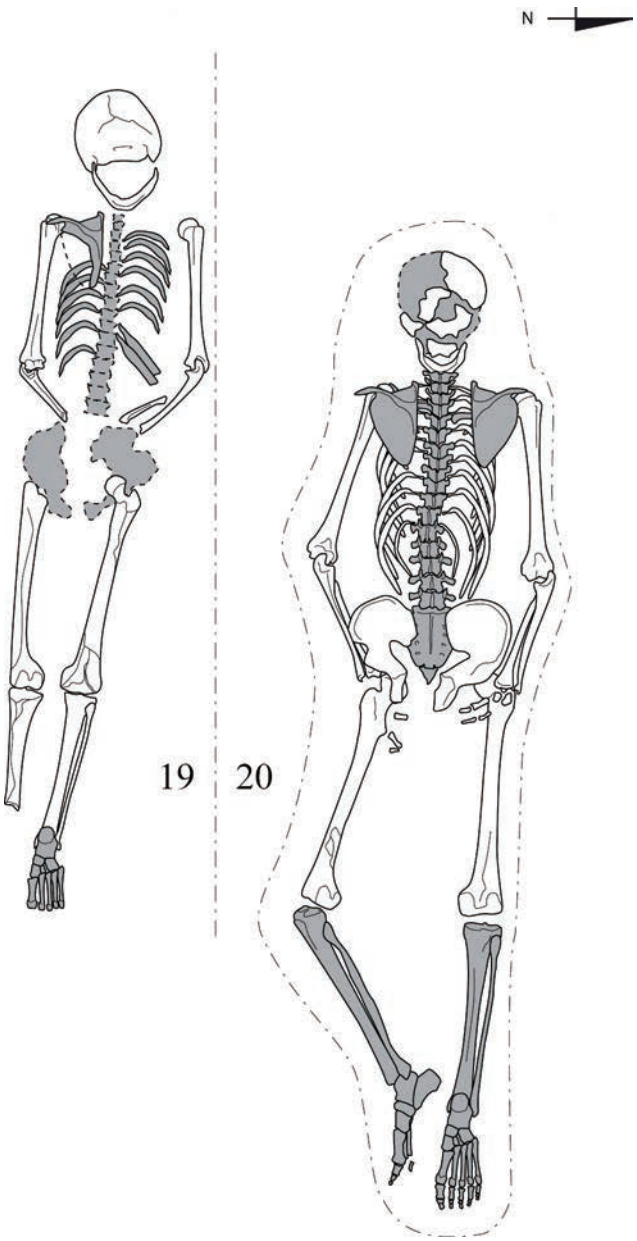

Figure 4: Burials 19 and 20 from E3-7, El Trapiche. Taken from Suzuki [2021, Fig.2, Drawing by H. Goudiaby].

"bound" were reported; however, most cases were determined based on the position of the forearms inclined towards the body's interior, for example, Burials 19 and 20 [Fowler 1984: 608-609] (Figure 4). We know that inclined forearm positions are explained by archaeotanatology without necessarily being due to bound hands. In direct burials with delayed filling, there is a natural force of the sediment applied toward the interior during putrefaction. It usually generates a strong constriction (Duday 1997: 114-115, 2009: 53-54), which may even rotate the contracted ulna and radius further into the decomposed body volume.

Fowler also asserted violent behaviors based on the "missing parts" [Fowler 1984: 607] without involving any positive observation of physical cut marks "of bone" [Botella et al. 2000: 69-78]. When any long bone of the limbs was not visible *in situ*, it was taken as evidence of *perimortem* amputation, e.g., Burial 23. The same discourse applied to the hands and feet, e.g., Burials 15 and 17 [Fowler 1984: 608]. Decapitations were suggested when the cranial bones were not seen at the excavations, e.g., Burial 22.

His archaeological interpretations were made in the 1980s and were naturally applaudable. The work might have been a landmark reference of the topic, at least in the southern periphery. However, through the notion from human taphonomy and archaeothanatology, Suzuki noted that his interpretation was somewhat premature and required much more reflection.

Macrofaunal interventions can cause a considerable level of dislocation of bony elements [Duday 2009: 28, 34] and collateral damage to them [Botella et al. 2000: 119-128], in which even the most robust long bones could become unrecognizable powders *in situ*. Observations of short bones also require more caution. They are difficult to recognize *in situ* (even worse, deteriorated and fragmented); however, they indicate what happened in the context and call for close and careful observation [Duday 1997: 124]. Small, spongy bones disappear more easily than long, compact bones during burial. It is called differential preservation by taphonomic-derived destruction [Duday 1997: 118, also see Stodder 2019: 83-84]. They may also be lost throughout excavations [Duday 2009: 89]. There are many archaeotanatological reasons why a simple disappearance of short bones cannot be taken as mutilation of hands or feet.

Likewise, post-sepulchral alterations are capable of explaining the absence of the skull. It is enough to recognize the upper cervical vertebrae that remain in the context, even if they are the smallest fragments. The same taphonomic logic [Stodder 2019: 83-84] explains that the skull was removed already decomposed. Vertebrae are fragile pieces that tend to disappear quickly, and the cranial bones, like occipital or mandible, are logically much more resistant. Furthermore, the cervical joints are labile [Duday 1997: 94,98, 2009: 25-28], and the skull can be removed from the early stages of putrefaction. A real decapitation anatomically tends to separate the head at the fourth, fifth, or sixth cervical vertebrae level. When we talk about decapitated skulls, therefore, it is necessary to specify inversely if the cranial elements were found together with the first cervical vertebrae or not. If the latter is the case, they are probably trophy heads extracted from another already decomposed and disarticulated contexts.

Suzuki never had access to the Chalchuapa skeletal material,

so he did not know if the violent behaviors postulated by Fowler left any "cut marks" on the bones. However, it is relevant to mention that throughout the Project, no cut marks were detected on any of the bones, not only in the Sin Cabezas sample but also in the Reynosa sample. Suzuki suggested thus that at least some of the sacrifices interpreted *in situ* should be incorrect.

Naturally, Suzuki's intention was not to deny all interpretations of sacrifice. Instead, his argument was to be more conservative in determining such interesting and important cultural intervention as sacrifice [cf. Tiesler 2007; Weiss-Krejci 2011]: and to promote much more interdisciplinary collaboration between archaeology and osteology to achieve accurate archaeothanatological evaluation from the excavation fields.

New insights from isotopic proveniencing of the sacrifice victims

We have completed strontium isotope measurement of several sacrificed victims in residential contexts from Sin Cabezas and in the massive burial from Reynosa. The isotopic identification of non-local individuals in the massive context was a key in similar massive burials from Cuello, Belize. Although there were contradictory ideas about the nature of the burial from diverse perspectives [cf. Robin 1989; Saul and Saul 1991; Weiss-Krejci 2003; McAnany 2013; Hammond 2015], Hoffmeister [2019] was able to determine that the contexts of Cuello were massive sacrifices based on the identification of the non-local victims. Thus, it is of great interest to recognize the possible origin of the victims in our case.

We dispense here with describing the basic mechanism and technical procedure of the isotopic proveniencing in bioarchaeology. There is a broad reference to consult [e.g., Price and Burton 2011; Price et al. 2015; Price and Freiwald 2022]. All the statistical tests have been conducted using Mac ToukeiKaiseki Ver. 3.0 and Mac TahenryouKaiseki Ver. 3.0, both are products of ESUMI Co., Ltd. Japan.

Sin Cabezas. We measured 9 cases of possible sacrifice at Sin Cabezas: *Rasgos* 11, 12, 21, 27, 27, 49, 53, and 57, all from Mound C4, Burial 1 from Structure E-14, and Burial 8 of Structure E-16. The results from strontium isotope measurement (n=9, average=0.7051, standard deviation=0.0004) are contrasted with the rest of the sample from the funerary contexts (n=27, average=0.7052, standard deviation=0.0005) in Figure 5. No outlier was detected in either group.

We applied the unpaired T-test, assuming the normal distribution because of our sample size (more than 30), and obtained results that there is no significant difference between the two groups (T=0.378, degree of freedom=34, p=0.708).

We could not include any modern faunal samples as bio-

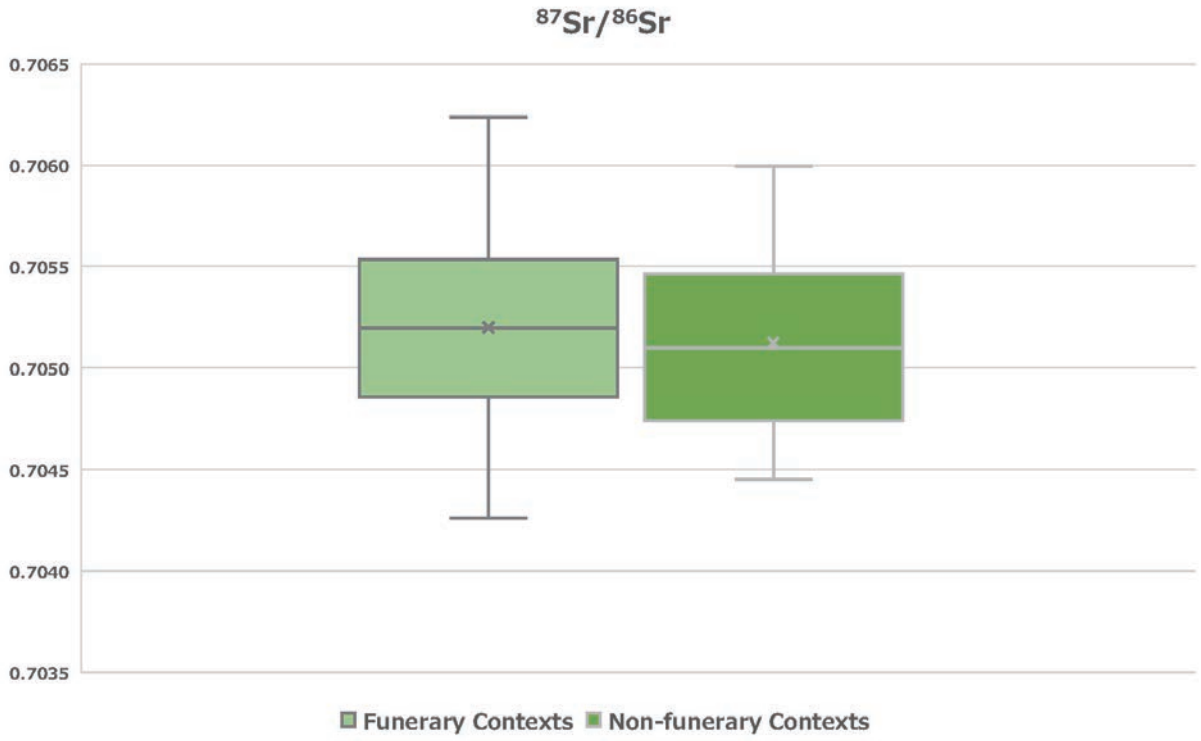

Figure 5: Contextual comparison of strontium isotope measurements.

available references. The agricultural activities around the site are massive, making it difficult to access. However, previous studies provide a good framework for interpreting the results in terms of provenance.

In the Mexican part of the Pacific Coast, several baseline data have been reported based on modern fauna [Price and Freiwald 2022: 498]. Averages are known: 0.7048 for the Paso de la Amada site; 0.7051 for Chilo, 0.7046 for Ojo d Agua; and 0.7047 for Izapa. In Guatemala, a similar range is also known based on modern fauna, for example, 0.7040 at Takalik Abaj. La Victoria, Retalhuleu, was characterized by a value 0.7059 based on modern faunal tooth measurements. A range between 0.7037 - 0.7044 was recognized in El Salvador from the modern faunal sample collected from ten archaeological sites [Suzuki et al. 2016]. Although there are points whose values are very different, for example, Pijijiapan, Chiapas, measured by two local modern dogs between 0.7072-0.7078, probably due to the salt effect [Freiwald et al. 2019], they are few.

We believe, thus, it is possible to establish a general range covering a wide southern coast area between 0.7040-0.7060. It is very likely that the sacrifice at Sin Cabezas did not include any non-local individuals. All victims were virtually natives around the site, at least from the same coastal region.

Figure 6 shows the combined results with the oxygen isotope measurements. Again, many points overlap, indicating that most of those sacrificed must be local. Only *Rasgo* 53 appears to be an outlier by its positive oxygen value. Although more positive oxygen values are commonly interpreted as a sign of different treated water (boiled or stored) intake [Scherer et al. 2015], the case remains to be discussed elsewhere, especially in osteobiographic terms.

Reynosa. We measured 19 individuals from Mound 5 (Figure 7).The average corresponds to 0.7043 with a standard deviation of 0.0002. Although one outlier was identified (Burial 10, Sr=0.7050), the sample appears much more homogeneous than Sin Cabezas. All values, including the outlier, fall within the South Coast reference range (0.7040-0.7060). All individuals are likely native to the region.

We will now compare Sin Cabezas and Reynosa. The unpaired T-test indicated a significant difference between the samples (T=7.518, Degree of freedom=53, P=0.000). Figure 8 visualizes the difference.

We believe that this is indicative that there is an internal iso-

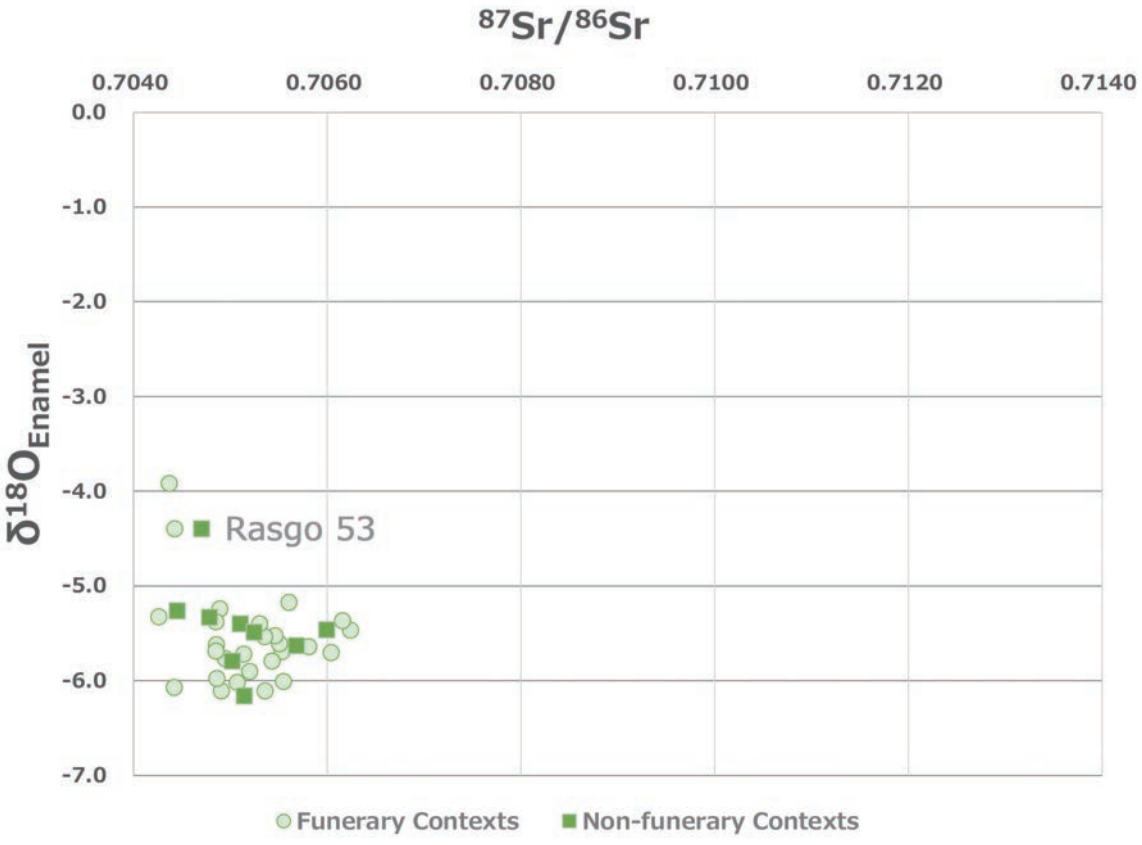

Figure 6: Scatterplot combining strontium and oxygen isotope measurements at Sin Cabezas.

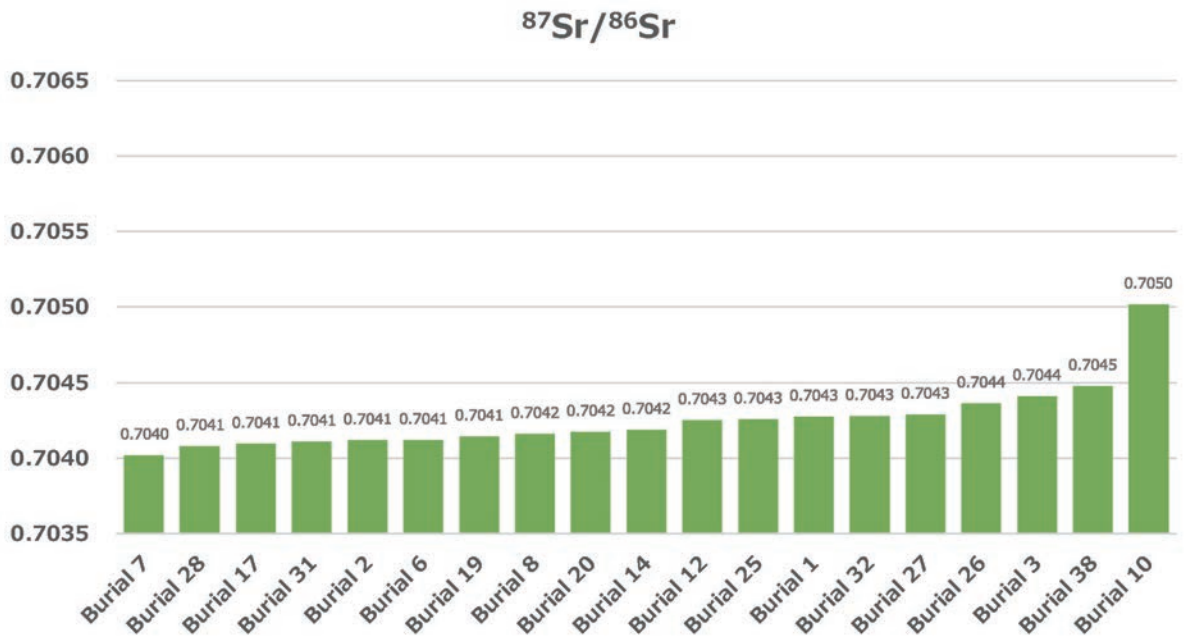

Figure 7: Results of strontium isotope measurement in Reynosa sample.

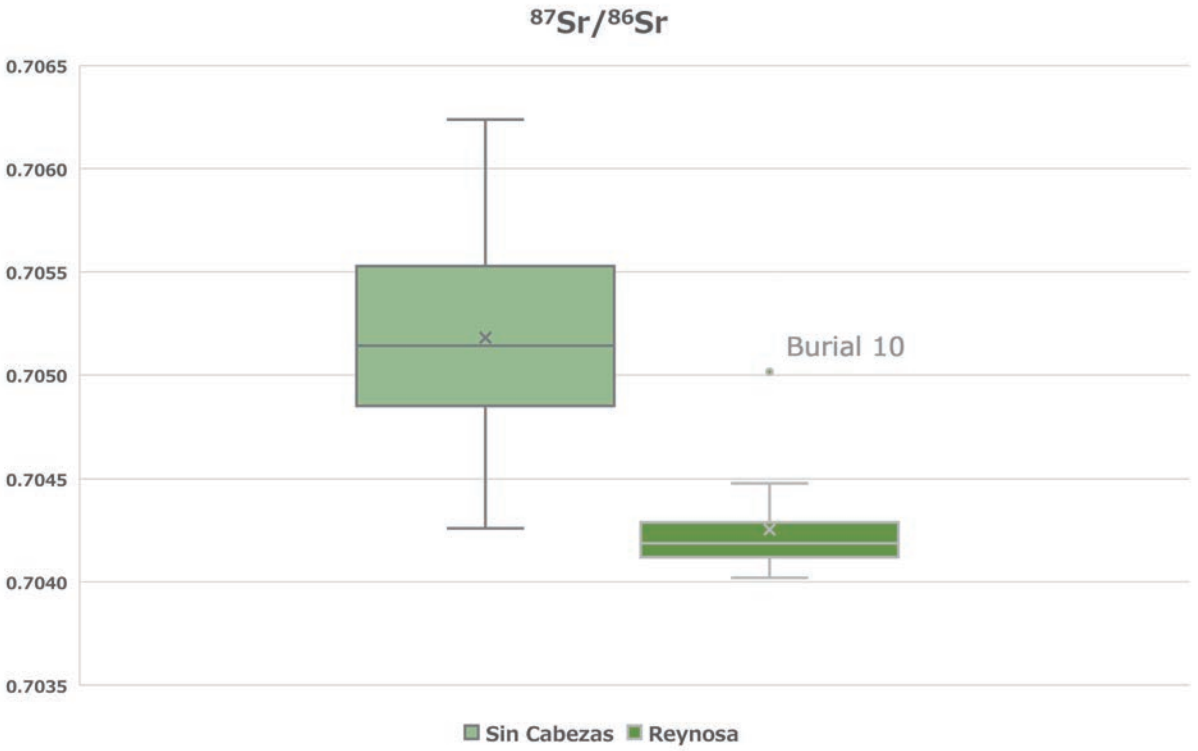

Figure 8: Comparison of results by the sites.

topic difference even within the South Coast, and it is possible perhaps to trace movements within the region. The present study is the first work that performed isotopic measurements of more than 50 archaeological individuals from the Pacific Coast and made the first considerable reference. Some individuals could come to Sin Cabezas from the Reynosa area, and the Reynosa's outlier could be someone from around Sin Cabezas. From this perspective, the high homogeneity of Reynosa's "victims" is interesting. Without a clear local reference to the site, they were all Reynosa locals, but they also could be all non-locals coming to Reynosa from somewhere else on the Southern Coast. Unfortunately, our research is ongoing, and we still need a clear answer.

The measurement of oxygen and carbon isotopes, which give much higher resolution to the perspective when combined with strontium isotopes, has yet to be done in Reynosa. We are now waiting for a collaboration where the whole genome of the individuals will be analyzed.

However, at this time, one case (Burial 5) from a funerary context of Mound 2 could be noteworthy. This only funerary case of the site yielded a value of 0.7043, practically the same average value of the sacrificed group. If this concordance is taken, the first interpretation of Mound 5 may be drastically transformed. A bloody site where the war captives from other villages were violently sacrificed could be a sacred place where the local ancestors were venerated. The ventral deposition, the close position of each body, and even the breaking figurines [Mejía 2016, Tomo I: 422] could be particular funerary treatments that we have not seen.

Naturally, the data are limited, and our interpretations remain preliminary. We emphasize that our attempt does not lie in determining the nature of the contexts through the "new scientific technology" but in activating and pushing further archaeological discussions by adding more aspects and perspectives provided by the new approaches. The isotopy or even more sophisticated approaches do not grant the answer but only help generate new ideas. Archaeological interpretations are volatile. They should constantly be re-examined and re-thought. In fact, in Chalchuapa where Fowler argued for the mass sacrifice of war captives, Akira Ichikawa [2017] recently raised a new perspective. Ichikawa conducted morphometric studies of the teeth, including four victims of the mass sacrifice of El Trapiche. The results indicated that there was little possibility that they were non-local. Furthermore, the Japanese scholar concluded, based on other isotopic studies of burials from other areas of Chalchuapa (La Cuchilla), that if there were conflicts, they should be internal without involving long-distance human movement, at least at a massive level.

Sometimes integrating such diverse perspectives from different disciplines in an archaeological interpretation is a complex work. Managing such different ideas is sometimes even unconfirmable. However, we believe it is always necessary to integrate more approaches as varied as possible. Our intimate collaborations of different specialties are the only way to get closer to the truth of the past.

Acknowledgments

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