

The Archaeological Process: A Case Study from Salango, Ecuador

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Oftentimes archaeological excavations are over-sensationalized in the media, causing a distorted re-telling of the findings. Academic papers, which often contain more accurate information, are not easily understood by non-archaeologists. In order to accurately understand an archaeological finding it is necessary to understand the process by which the findings were determined. Neither the general media nor academic articles focus on this. The general media does not think that it is important and academic articles assume their audiences already understand the process. Thus, archaeological findings are not accessible to the general public. In this article, I will attempt to bring an archaeological excavation from Salango, Ecuador into the popular media – without sensationalizing it – by describing the archaeological process.

When doing archeological fieldwork archaeologists follow a process. This process begins with an archaeological survey. One method of archaeological survey is aerial survey, where satellite images are used to study terrain to locate possible sites that have evidence of human manipulation of the land. Another method is called ground survey. This consists of archaeologists walking along an area and looking for anything that seems to be human made, such as large mounds of earth in otherwise flat areas, or artifacts that have made their way to the surface.



Example of Aerial Survey (National Park Service, n.d.)



Example of Ground Survey (Gregory, 2003)

From 2014 to 2016 there was an excavation of burial mounds in Salango, Ecuador. It is likely that this excavation began with both aerial survey and ground survey. In this case, archaeologists would study aerial images, such as satellite images, of the area and see something, such as mounds in the area that is otherwise flat. This is an indicator of human activity. Then archaeologists would visit the area, where they would perform ground surveys. Groups of archaeologists would walk, spaced out, along the selected area looking for artifacts that had made their way to the ground's surface, from here the archaeologists could determine if and where they should excavate.

The next step in the process is the actual excavation. This is the step where archaeologists dig up artifacts. It is time-consuming and requires extreme precision. As archaeologists meticulously excavate their site, they must record everything. They create a map of the excavation that consists of the precise location of each artifact when it was found. This is called a stratigraphic map.

The excavations from 2014 to 2016 were led by Sara Juengst. The descriptions of the excavation and the artifacts found come from an academic article entitled, *Unique Infant Mortuary Ritual at Salango Ecuador, 100 BC*. The excavated site is from the Guangala culture. The Guangala was a chiefdom culture located in modern-day Ecuador. It is archaeologically based on a type of ceramic, but this culture is not well described in archaeological literature. This culture is dated from 100 BCE to 800 CE (Encyclopedia, n.d.).

The site that was found is a funerary platform. It consists of two small funerary mounds. These are mounds of earth built up over a human burial. The site was dated to 100 BCE. The remains of eleven different individuals were recovered from the two mounds. Two of the

individuals found were infants, one from each burial mound. These infants had helmets that were made from the skulls of other children. In this article, I will refer to these as skull-helmets.

Once the site is excavated archaeologists must analyze the artifacts. When human remains are found, bioarcheologists, analyze the remains. Bioarchaeologists are archaeologists that specialize in studying archaeological human remains.

The first infant, which I will call Infant A, was aged by bioarcheologists to be 18 months at the time of their death. This age was determined by tooth eruption and root formation. As children develop, their adult teeth form in their skulls and this pushes out their baby teeth (this is what happens when children lose their teeth). A bioarcheologist can look at the skulls of children and determine, based on the teeth, the age of the child. Generally, fewer baby teeth and more adult teeth mean the child is older. Also, baby teeth fall out in a relatively predictable pattern and at a predictable rate. This information can also be used to help assign an age to human remains. Infant A had a skull-helmet made from the remains of a child who was between the ages of four and twelve at the time of their death. The age of this skull was determined based on skull formation, which means how developed the skull was. As a person ages, their skull changes from the shape it is at birth to the shape it is when they are a fully grown adult. Bioarchaeologists can estimate age based on how developed a skull is.

There was little space between Infant A's skull and their skull-helmet; Juengst says that this implies that the skull-helmet was already in place at the time of burial (Juengst, 2019). Between Infant A's skull and their skull-helmet, there was a small shell and a finger bone. There are indications of perimortem, or post-death, cutting of the bones, which implies that the creators of the skull-helmet cut the skull so it would fit onto Infant A's skull. The positioning of the skull-helmet pieces indicates that there was still flesh on the remains when the skull-helmet was placed

on Infant A's skull. It would be unlikely that the two skulls could hold themselves together, and thus the flesh functioned as a glue attaching Infant A's skull and their skull-helmet.

The second infant, which I will call Infant B, was aged by the same methods as Infant A, to be six to nine months old at the time of their death. Their skull-helmet was aged, by the same methods as Infant A's skull-helmet, to between two and twelve years old at the time of their death. This skull-helmet consists of twenty-two fragments of skull bones. There are no cut marks visible on these fragments. It is also likely that infant B's skull and their corresponding skull-helmet had flesh on them at the time they were placed together.



*Infant Skull with Skull-Helmet
(Sara Juengst)*



*Infant A with Skull-Helmet
(Sara Juengst)*

The final step in the archeological process is the interpretation of the artifacts. Archaeologists use their analysis and the analysis and interpretations from previous, but similar, excavations to interpret their own findings. The find in Salango, Ecuador is one of a kind. Nothing like it has ever been found associated with the Guangala culture or anywhere in Ecuador. This means that there are no previous understandings of the find. It is however understood that heads are symbols of identity in South America. As well, individual skulls have been used to portray status, fertility, and dominance in South American burial contexts (Juengst, 2019), but the use of children's skulls in the manner described in this article has never been

documented. It can be interpreted that the burial of infant skulls with skull-helmets was significant to the people who buried them.

There are two main interpretations of this burial, both of which are discussed in *Unique Infant Mortuary Ritual at Salango Ecuador, 100 BC*. The first is that the intention of the helmets was to protect the souls of the infants in the afterlife. The second is that this was part of a ritual intended to help ease environmental consequences from a recent volcanic eruption.

After the findings are interpreted the archaeologists write their findings in an academic publication. The article written about the skull-helmet infants was published by *Latin American Antiquity* and is entitled *Unique Infant Mortuary Ritual at Salango, Ecuador, 100 BC*.

References:

Encyclopedia. n.d. "Guangala" Accessed April 16,

2023. <https://www.encyclopedia.com/humanities/encyclopedias-almanacs-transcripts-and-maps/guangala>

Gregory, Timothy. 2003 "Surface survey during the Australian Paliochora Kythera Archaeological Survey on the island of Kythera."

<https://zagoraarchaeologicalproject.org/the-project/archaeological-field-tools-and-methods/>

Juengst, Sara, Lunniss, Richard, Bythell, Abigail, & Ortiz Aguilu, Juan Jose. 2019. "Unique Infant Mortuary Ritual at Salango, Ecuador, 100 BC." *Latin American Antiquity*, 30, no. 4 (December): 851-856. doi:10.1017/laq.2019.79

National Park Service. n.d. <https://www.nps.gov/teachers/classrooms/archeology-and-magnetometry.htm>