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# Violence and Postmortem Signaling in Early Farming Communities of the Sonoran Desert: An Expanded Taphonomic Approach

## **Abstract**

Bioarchaeological analyses of violence largely fail to consider the bio-cultural complexity that result from hostility. Here, we utilize an expanded definition of burial taphonomy to test if individuals exhibiting evidence for violence differed in other identifiable ways in early farming communities from the Sonoran Desert, circa 2,000-4,000 ybp. A variable matrix is constructed to conduct a more inclusive analysis considering demographic variables, decomposition, taphonomy, health status, and mortuary treatment. We postulate that although numerous community members experienced violence during a time of known subsistence intensification, specific individuals were selected for differential treatment as a form of postmortem signaling.

## **Keywords**

Bioarchaeology, Burial Taphonomy, Trauma, Violence

# Violence and Postmortem Signaling in Early Farming Communities of the Sonoran Desert: An Expanded Taphonomic Approach

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## ABSTRACT

Bioarchaeological analyses of violence largely fail to consider the bio-cultural complexity that result from hostility. Here, we utilize an expanded definition of burial taphonomy to test if individuals exhibiting evidence for violence differed in other identifiable ways in early farming communities from the Sonoran Desert, circa 2,000-4,000 ybp. A variable matrix is constructed to conduct a more inclusive analysis considering demographic variables, decomposition, taphonomy, health status, and mortuary treatment. We postulate that although numerous community members experienced violence during a time of known subsistence intensification, specific individuals were selected for differential treatment as a form of postmortem signaling.

## VIOLENCE

Numerous studies have documented violence, warfare (LeBlanc 1999, Lekson 2002, Rice and LeBlanc 2001), and perhaps even cannibalism (Turner and Turner 1999) throughout the pre-colonial Desert West. Traumatic injuries are common among skeletal samples from early farming communities of the Sonoran Desert (Fig. 1) and have the potential to document some of the earliest evidence for interpersonal violence in the region. However, the close examination of contextual information and an expanded approach to burial taphonomy has allowed us to document a number of instances of violence that do not include skeletal lesions. Instead we believe that these instances may represent 'signaling' by the perpetrators using the victim's body. Here we examine a suite of taphonomic variables within a skeletal sample of 100 individuals from the Early Agricultural period (1600 B.C.-A.D. 200) site of La Playa, Sonora, Mexico (SON F:10:3) to evaluate potential evidence for violence and signaling among early farmers in the Sonoran Desert.



Figure 1. Examples of skeletal lesions from La Playa that represent violence.

## AN EXPANDED TAPHONOMY

Little attention has been paid to formally documenting the impact of taphonomy on human burials. One exception to this oversight is the work of Henri Duday (2009), whose approach focuses on recording position and relationships of individual skeletal elements to reconstruct burial taphonomy, and how decomposition of soft tissue can help reconstruct body placement and grave construction by considering the affects of gravity, soil compaction and weight, and the rate and course of decomposition in the burial feature. Decomposition creates space that soft tissues once occupied. Soil eventually fills most of these voids. If decomposition is slow and largely matched by soil replacement then individual elements are more likely to remain in their original position (**progressive filling**). Fast decomposition and/or slow soil replacement is more likely to create active space or voids that skeletal elements can move by gravity or soil movement (**delayed filling**). The analysis presented here considers variables that reflect decomposition processes.

## LA PLAYA [SON F:10:3]

La Playa is an expansive archaeological site located in northern Sonora, Mexico (see figure above). The most intensive occupation is associated with the Early Agricultural period (1600 B.C.-A.D. 200). Excavations over the past decade have produced a skeletal sample representing 324 individuals that span the entire course of the Early Agricultural period. The sample is evenly distributed between sexes, across age groups, and has no identifiable patterns of distribution within the site or by burial treatment. The La Playa burials represent the largest, earliest, and most comprehensive skeletal sample in the region and provide the ideal instrument to test the assumptions about the consequences of the adoption of agriculture in the region.

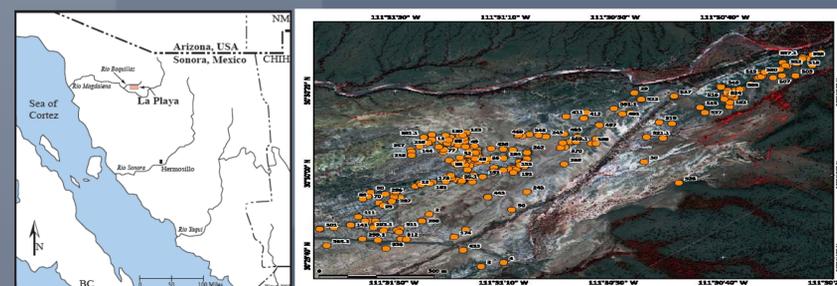


Figure 2. Location of La Playa (left) and the distribution of burials within site (right).

## METHODS

Four sets of variables were recorded on a sample of 100 mortuary features from La Playa; demographic, mortuary, biological, and taphonomic. The data were compared using cross-tabulation tables and chi-square test for significance. Violence was the independent variable. Significance was set at the .05 level and all tests were run using PSAW 18.0.

**Demographic Variables:**  
Locus  
Archaeological Phase  
Sex  
Age

**Mortuary Variables:**  
Context (primary or secondary)  
Placement (right or left)  
Cranial Orientation (N, E, S, & W)  
Grave Accompaniments  
Evidence of Violence

**Biological Variables:**  
Infection  
Trauma  
Dental Pathology  
DJD

**Taphonomic Variables:**  
Rib Collapse  
Tumbling of the Cranium  
Angle of the Clavicles  
Placement of the Hands  
Articulation (of all major bony connections)  
Joint Flexure (of all major joints: acute, 90, obtuse)

Table 1. Evidence for Violence from La Playa

Trauma	M	F
▪ Cranial Fractures (n = 16)	X	X
▪ Perimortem Fractures (n = 6)	X	X
▪ Healed Fractures (n = 27)	X	X
▪ Healed Severed Forearm (n = 1)	X	X
▪ Embedded Point (n = 3)	X	
<b>Body Treatment</b>		
▪ Body Disposals (n = 5)	X	

## RESULTS

Two forms of evidence for violence were recorded in the La Playa sample: trauma and body disposal (Table 1). Skeletal lesions indicative of trauma included both healed and peri-mortem cranial and long bone fractures, a healed and severed forearm, and embedded projectile points (Fig. 3). Body 'disposals' are recognized as having most joints unarticulated, lacking paired limb placement, lacking body treatment such as the application of red ochre, and three had projectile points embedded in various elements (cranium and back). Results of the analyses demonstrate a significant difference in articulations and limb placement between individuals exhibiting evidence of violence versus those lacking such evidence ( $\chi^2 = 4.038$ ,  $df = 1$ ,  $p = .046$ ). The pattern is strongest among those few individuals that represent body disposals, who also lack mortuary treatment found among other individuals in the sample.



Figure 3. Body Disposals: lacking any formal burial treatment. Instead position and placement indicate intentional disrespect or desecration of the body.

## DISCUSSION

- Approximately 20% of the individuals from the La Playa skeletal sample exhibit evidence for violence.
- The results indicate that many victims of violence experienced uncommon differences in body placement that resulted in post-mortem disarticulation of the joints.
- The presence of body 'disposals' within the site are additionally indicative of violent acts in which participants were not afforded burial rites by their community but were instead deposited by the perpetrators of the violence.
- We propose that these events represent episodes of post-mortem signaling (Sosis and Alcorta, 2003) by those enacting the violence at La Playa.

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