H52 Beating a Dead Pig to Death: An Actualistic Test of Archaeological Assumptions

Kerriann Marden, MA, Dept of Anthropology, Tulane University, 1326 Audubon Street, New Orleans, LA 70118*

After attending this presentation, attendees will understand how forensic taphonomy can inform archaeological interpretations of a specific type of anthropogenic mark on bone.

This presentation will impact the forensic community by demonstrating whether damage to human bone which has previously been attributed solely to the action of hammer and anvil could also result from trauma caused by interpersonal violence with stone weapons.

When anthropogenic abrasion is observed on the surfaces of fractured archaeological long bone specimens, this taphonomic feature is generally assumed to indicate that that the bone was absent of flesh at the time it was broken, allowing the tools to abrade the bone surface. Several archaeological investigations of human remains recovered from pre-Columbian, ancestral pueblo sites of the Southwest have concluded that the assemblages represent cannibalized remains (most recently, see White 1992; Turner and Turner 1997; Hurlburt 1999 and 2000; Lambert, Billman and Leonard 2000; Kuckelman, Lightfoot and Martin 2002). Abrasion of long bone surfaces along the fracture margins is among the suite of taphonomic traits which forms the basis of a cannibalism interpretation, with the assumption that this abrasion results from the use of hammer and anvil stone tool technology on defleshed human bone surfaces in order to exploit the marrow within (Turner and Turner 1999).

This research tests the hypothesis that vigorous assault to fleshed skeletal elements with a stone weapon can produce abrasion on long bone surfaces which mimics that caused by hammer and anvil breakage of defleshed bone. It is hypothesized that violent interpersonal conflict—in which a stone club is wielded with sufficient velocity to shatter the under- lying bone—could cause similar bone surface abrasion as the weapon head tears through skin and muscle and makes contact with underlying skeletal structures.

It has been well established that modern analogues and experimental models can inform archaeological taphonomic interpretations (see for example Binford 1981; Bunn 1983 and 1989; Shipman and Rose 1984; Behrensmeyer, Gordon and Yanagi 1986; Blumenschine 1988; Fiorillo 1989; Gifford-Gonzales 1989; Pickering and Wallis 1997; Saul and Saul 2002). This actualisitic study used fleshed hind limbs of pigs (*Sus scrofa*) as analogues for human limbs, with one leg from each pair of limbs (n=5 pair) fixed vertically with pipe vises, in order to simulate the semi-fixed response of a weight-bearing limb. Each bone was struck with a replica stone club with force approximating a blow given during warfare, and recorded in digital video format. The five antimeres were manually defleshed, then cracked open over an anvil rock using a hammerstone replica, which was also recorded in digital video format. All specimens were then macerated in hot water and examined for abrasion. Observed abrasion was recorded, photo-documented, and compared to archaeological samples displaying putative hammer and anvil damage. Results supporting the hypothesis will suggest that taphonomic agents other than perimortem hammer and anvil breakage could generate this form of abrasion, whereas results rejecting the hypothesis will provide further evidence for the extant osteoarchaeological interpretation.

Taphonomy, Trauma, Archaeology

 ** Presenting Author*