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Continuity and Transformation During the Terminal Middle Horizon (AD 950-1150): A Bioarchaeological Assessment of Tumilaca Origins Within the Moquegua Valley

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relative to carnivores (*Canis*). We interpret these results as supporting the expensive-tissue hypothesis and indicating that a trade-off in gut size during encephalization in genus *Homo* was accompanied by a reduction in exposure to plant neurotoxins. This diet shift is consistent with detoxification of plant foods using cultural technologies and/or a greater dependence on meat eating.

The importance of the concept of culture to anthropology.

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The germs of racism began even before the Spanish Inquisition. Early in European history different peoples were thought of as either Pre-Adamites or as degenerates. Pre-Adamites were biologically fixed in their characteristics and could not be changed by living conditions or by education. Those who believed that "others" were degenerates assumed that these peoples were born of god but could be improved by changing their habits and environment, they could be missionized.
These ideas persisted until the time of Darwin and similar ideas persist even today. In the early 19th Century, the degenerate idea was given scientific justification through Lamarkianism. Pre-Adamite theory was reinforced by Mendelian genetics, Eugenics, and Social Darwinism. However, once Lamarkianism was disproven, there was no scientific theory left to explain the differences in peoples except biology and genetics. However, in 1911, Franz Boaz showed that skull shape could change in human immigrants by changing their environment and he developed the anthropological concept of culture. The idea that how and what humans thought mainly was related to their life history, education, and socialization was new to science. Human societies were not inferior or superior to one another but rather were different because of their different histories. I will discuss the importance of recognizing the concept of Culture within all fields of anthropology. As Clifford Geertz stated: "Without men no culture, certainly; but equally and more significantly, without culture no men." However, I will argue that without anthropology no culture, but, more significantly, without culture no anthropology.

Continuity and transformation during the terminal Middle Horizon (AD 950 – 1150): a bioarchaeological assessment of Tumilaca origins within the Moquegua Valley, Peru.

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While some archaeologists suggest that terminal Middle Horizon Tumilaca populations of the Moquegua Valley, Peru, represent direct descendants of earlier Chen Chen-style Tiwanaku colonists from the adjacent highlands, others have suggested that the Moquegua Valley Tumilaca were descended from earlier indigenous populations. We test these archaeological models by comparing hypothetical design matrices to dentally derived biodistance analyses using Tumilaca, Chen Chen-style, Tiwanaku, and other regional mortuary samples using 999 iterations of the partial Mantel test developed by Smouse et al. (1986). The generalized Mahalanobis' d^2 results for the nonmetric tooth cusp and root trait data indicate that the Tumilaca and Chen Chen-style mortuary samples are phenetically similar to one another suggesting that these populations likely share an ancestral-descendant relationship. The partial Mantel results for the highland origins model is positive and significant ($r = 0.49$, $p = 0.001$), while the comparisons for the local origins model produced negative and nonsignificant results ($r = -0.09$, $p = 0.732$). The broader implications of these results are discussed.
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Assessing the distribution and abundance of owl monkeys (*Aotus zonalis*) in Chagres National Park, Panama.

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Since its first scientific description in 1802 the taxonomy of *Aotus* has been debated and there are various arrangements on the number of species and subspecies. Although currently most classifications favor a more speciose arrangement than previously assumed, there is ambiguity on the status of many taxa. This taxonomic uncertainty may hamper conservation efforts, necessitating the need to increase our understanding of both the taxonomic and population level status of many *Aotus* populations. The Panamanian owl monkey, tentatively identified as *Aotus zonalis,* is a case in point. With their forest habitat being destroyed at a rapid pace it is vital to find out more about this taxon to enable a correct IUCN Red listing and to ensure appropriate protection and management of the remaining populations. We conducted systematic surveys at Chagres National Park in central Panama, quantifying the abundance and distribution of *Aotus*. A total of 75.4 kilometers were walked along transects between 18:00-24:00 hrs and 04:00-06:00 hrs in three distinct forest ecosystems. A total of 33 individuals in 16 groups were observed, at two of three sites. Population density was measured in groups/km^2 and animals/km^2. Encounter rates and habitat characteristics of canopy cover and tree density/ha were found to be significantly different between sites. *Aotus zonalis* appears well-adapted to human disturbance and secondary forests at this site but population densities are low and careful management for conservation of the species is necessary. Clarification of their taxonomy will also aid in informing conservation status.
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Hamadryas baboons as an analog for social evolution in *Homo erectus*.

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Baboon behavior, adaptations and socioecology have long been recognized as providing an important comparative sample to elucidate the processes of human evolution. Hamadryas baboons in particular, *Papio hamadryas hamadryas*, may represent an even better analog than 'savanna' baboons for reconstructing social dynamics in early *Homo* groups because hamadryas display a combination of the male kin bonding that is thought to have characterized early hominins, the male-female pair-bonding that is thought to have developed at some point during human evolution, and the female bonding that underlies the grandmother hypothesis for the evolution of post-reproductive longevity in human females. *Homo erectus* has been argued to represent a transitional species in hominin evolution in that its larger body and brain size and more extensive ranging patterns increased the costs of reproduction for females, thereby providing a selective force leading to greater levels of sociality than in earlier hominins. The higher costs of reproduction faced by *Homo erectus* females, exacerbated by an increased reliance on difficult to acquire, nutrient-dense foods, are commonly thought to have been alleviated by a strengthening of male-female bonds (via male provisioning and the evolution of monogamy) or the assistance of older, post-reproductive females (via grandmothering). We present an alternative scenario of social evolution in *Homo erectus* that draws upon the patterns of social bonding and reproductive strategies found in hamadryas baboons. This new scenario of *Homo erectus* social evolution does not exclude either male provisioning or grandmothering, and thus integrates elements of previous models.

CT-based assessment of relative soft tissue alteration in different types of ancient mummy.

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Mummification of any type leads by definition to alteration of soft-tissue morphology. Hitherto, no research addressed mummification-type (e.g. artificial versus natural mummies) specific alteration of soft tissue shrinkage as assessed by computed tomography (CT). Our aim was to test whether soft-tissue alteration is specific for type of mummification. A total of 15 human mummies have been investigated by CT. Type of mummification included ancient Egyptian style, natural Peruvian mummies, Ice mummies (including the Iceman, South Tyrol Museum of Archeology, Bolzano, Italy, ca. 3,300 BC), bog