

ABSTRACTS

group and structural forces. We argue for the integration of perspectives from practice, post-colonialist, and feminist theories, which recognize individual and group decisions in reproducing, transforming, and resisting the political and economic conditions of power. As a case study, we examine the representations of power dynamics during the emergence of increasingly stratified societies in the South Caucasus during the 3rd millennium BC. Isotopic analysis of populations from complex settlement sites for mobility and diet reveals complex processes in forming community identity around shared subsistence and mobility practices. Individual life courses in context with social relationships represented in funerary contexts reflect efforts in promoting social cohesion. Conclusions from this study highlight how the examination of individual life histories and group dynamics offer greater interpretive power in examining how human populations engage and interact with social systems.

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Early Pleistocene grassland evolution at East Turkana, northern Kenya, as indicated by shifting patterns of mesic and xeric adapted mammals

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Extensive evidence for the evolution of *Paranthropus* and early members of the genus *Homo* can be found at East Turkana in northern Kenya. However, the complex dynamics of the ecosystems inhabited by these hominins remain somewhat unclear. To determine paleoecological changes between 2-1.4 Ma, faunal abundance analyses were conducted using data from the

Turkana Basin Paleontology Database, the Turkana Basin Institute Paleontology Database, and new field collections. The relative proportions of xeric- and mesic-adapted ungulate taxa were analyzed across space during the Upper Burgi, KBS and Okote members at East Turkana, representing much of the early Pleistocene. We find that only the Karari subregion experienced statistically significant faunal turnover during this period, primarily between the Upper Burgi and KBS members. This turnover indicates aridification during the recession of Lake Lorenyang, as dominant mesic taxa were replaced with xeric taxa. Intriguingly, the ecologically-puzzling suid genus *Kolpochoerus* follows the same abundance pattern as the bovid tribe Reduncini, supporting existing assertions that these suids were mesic-adapted in the region and possibly throughout the continent, and may be used as an ecologically indicative taxon. The Karari subregion has a high frequency of known archaeological localities dated to this time period, suggesting hominins were inhabiting these xeric habitats. Further analyses are needed to understand the relationship between habitat heterogeneity, hominin behavior, and sources of stone to make tools.

Social party initiation, maintenance, and affiliative interaction by adolescent female orangutans in Gunung Palung National Park, West Kalimantan, Indonesia

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In an effort to understand orangutan sociality and the benefits of socializing for a semi-solitary ape, we explore the social lives of the most gregarious orangutan age-sex class - adolescent females. From 1994-2016 adolescent females in Gunung Palung National Park had a social encounter on 50% of their follow days, spending 31% of their time in the company of others. Adolescent females were responsible for initiating social parties (coming within 50 meters) with other age-sex classes 86% of the time. Once they were in a social party, the percentage of approaches (decreases in distance between individuals) performed by adolescent females was significantly predicted by the age-sex class of their social partner ($F=4.086$, $p=0.02$). Adolescent females performed most of the approaches when they associated with adult females (70%), while approaches were more equal when they associated with flanged males (46% performed by adolescent females) or unflanged males (56% performed by adolescent females). These findings, in combination with higher rates of agonistic interactions between adolescent and adult females and higher rates of affiliative behaviors between adolescent females and unflanged males, indicate that adolescent females actively seek social opportunities with all age-sex classes, but the benefits and risks associated

with socializing vary based on the age-sex of their social partners. We argue that sociality is important during adolescence for female orangutans because they must establish themselves in the social landscape, and must seek social learning opportunities. Finally, we consider the adaptive significance of meaningful social bonds for a semi-solitary, sexually coercive ape.

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Patterns of Osteoarthritis in an Early-Agricultural Society: Relationship with Growth and Stature

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Osteoarthritis (OA) is one of the most common pathological conditions seen in archaeological skeletal collections. The goal of this study is to identify the patterns of osteoarthritis in the peripheral joints of a skeletal sample from the Norris Farms 36 archaeological collection in the Central Illinois river valley. To date this disease is under examined, specifically in this subsistence group. This study utilized a sample of 78 individuals, 47 females and 31 males, with estimated ages greater than 20 years old. The population associated with the cemetery is known to be transitional between hunting-gathering and agriculture, therefore it is important to identify the frequency and severity of this disease in order to raise the understanding of underlying etiologies behind it. Better knowledge of the association between growth/stature and joint disease needs to be established in past peoples in order to gain perspective on contemporary cases. The results of this study indicate that severity of osteoarthritis increases in a linear fashion with age, as expected. Unlike other past populations, males and females do not differ significantly in the severity of osteoarthritis. Additionally, the sample revealed a slight association between the tallest females and severe arthritis, which could potentially be linked to a genetic factor, Growth and Differentiation Factor 5 (GDF5). Finally, there is a positive correlation between tibia length (knee height) and the severity of knee arthritis for females in the sample that warrants further research into the biomechanics of the knee joint and the onset of OA.