

for females, but more than 80% for males. This study nonmetrically and metrically tested the curvature of the iliac crest as a method for sex determination using the ilia of 15 known sex subadults from the Scheuer collection. The ilia were visually assessed and categorized into three groups: slight s-shaped/shallow (females), s-shaped/deep (males), and indeterminate. The visual method was subjective and results indicate that it inaccurately sexed the ilia. The metric assessment yielded an 89% confidence that by measuring the length of the iliac crest and dividing it by the greatest depth of the curve, unknown ilia could be classified into the correct range of numbers that correlated to sex. Due to the small sample size, further testing is needed to determine if this is a viable method. This study contributes to ongoing research on developing methods to sex subadults and contributes to the studies on the viability of the curvature of the iliac crest as a method for subadult sex determination.

Variability in variability - variation in sexual size dimorphism in *Homo sapiens*

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Variability, be it genetic or morphological, is the raw material of evolution. There are many aspects of variability in and among populations, temporal, geographical, and sexual, to mention some. Understanding of the evolution of sexual dimorphism is essential to understanding of human biocultural evolution. Therefore proper methods for analysing sexual dimorphism are essential. Often, focus is on sex differences in mean values. However, differences in variability also deserve attention. Two levels of such variability in variability can be defined: are the two sexes in one population in a given biogeocultural setting different when it comes to the level of variability, and are different populations different with regard to the level of sexual dimorphism? Recently, the implication of this variability in sexual dimorphism has been investigated with respect to sex estimation from skeletal remains from medieval Denmark. It has been found that standard procedures for sex estimation have different efficiency in different samples. This can then be compared to the level of sexual dimorphism in other morphological characters, and the pattern found interpreted in the actual cultural and historical setting. The present study will summarize the general problem of variability in sexual dimorphism, including methods for quantifying this aspect of variability. Danish medieval skeletal material is used as an example and it is shown that sexual dimorphism can vary significantly for a set of characters within a relatively small geochronological range, in what is assumed to be subdivisions in a genetically homogeneous population.

Suspension, brachiation, and the evolution of short torsos in atelines and hominoids

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Hominoid primates possess reduced numbers of lumbar vertebrae relative to non-hominoid primates and most other mammals. However, reduction in lumbar number appears to have evolved a number of times across mammals in different locomotor contexts. In many cases, lumbar reduction is achieved via homeotic change with the thoracic region, maintaining a consistent number of thoracolumbar vertebrae. Hominoids depart from this pattern, as do a select few mammals, including ateline primates. The extant Atelidae contains four genera: *Alouatta* and *Lagothrix*, which occasionally employ hindlimb/tail and forelimb suspension, respectively, but are otherwise arboreal quadrupeds, and *Ateles* and *Brachyteles*, which are primarily tail-assisted brachiators. Given their degree of locomotor variation and phylogenetic proximity to hominoids, the Atelidae provide an analogy for reconstructing the evolutionary history of extant hominoids, all of which are fully suspensory and capable of brachiation.

We collect vertebral number data on a large sample of primates (N=4000), identify the modal vertebral formula for each genus, and quantify intra-and-inter-generic variation. Results demonstrate that *Ateles*, *Brachyteles*, and *Lagothrix* converge with hylobatids in thoracolumbar numbers, whereas *Alouatta* retains an unreduced thoracolumbar column. In contrast to hominoids, ateline thoracolumbar reduction is generally accomplished via meristic rather than homeotic change at the lumbo-sacral border. Within atelids, intraspecific variation is structured such that *Alouatta*, *Lagothrix*, and *Brachyteles* are characterized by high degrees of variation, whereas *Ateles* demonstrates little variation. We suggest that forelimb suspension and locomotion, not suspensory behavior generally or brachiation specifically, best explains the convergent evolution of reduced thoracolumbar numbers in Atelinae and Hominoidea.

Cranial modification and identity at Cusirisna Cave, Nicaragua

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Cultural traditions of cranial modification are important chronologically and geographically to investigate ethnic relationships. Eight crania were present in the commingled remains (n=82, MNI=9) recovered from Cusirisna Cave, Boaco, Nicaragua in the 1870s. Five crania display fronto-vertico-occipital modification most likely achieved through compression by cradleboards or freeboards. The five crania each display a vertical occipital, superior elevation of the lambdoidal suture, and laterally expanding parietals, though they exhibit variability in degree of slope. Ethnohistoric reference from the 1870s describes the placement of the crania in *guacales* (bowls made from *jacaras*), a different treatment than the postcranial remains in the cave burial. A radiocarbon assay using the

accelerator mass spectrometry technique on a sample from one of the *guacales* yielded a date of cal A.D. 1450 with a 2-sigma calibrated interval (95% probability) of Cal AD 1430 to 1483 (Cal BP 520 to 470) (Beta-315973). We explore cranial modification in this temporal and spatial context to examine identity and use this framework to interpret the function of the mortuary cave. There is little information in regard to this particular locale in Nicaragua, and even less so in terms of osteological analysis and cranial modification. These bioarchaeological analyses of identity and mortuary function allows for inference into ethnic affinity, social status, comparison of cultural traditions, and addresses Cusirisna Cave as a place of ritual importance.

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Tooth ablation in early Neolithic skeletons from Taiwan

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Although varied in its expression, the intentional removal of teeth during life has been documented in the living and in archaeological skeletal record worldwide. Several earlier studies indicate that tooth ablation was relatively common in Taiwan as well as in the Chinese mainland beginning with the Neolithic Age continuing into the Iron Age in these regions. More recent examples of tooth ablation among several of Taiwan's indigenous groups, some occurring as late as the early twentieth century, have also been reported. In this study, we report a usually high frequency of tooth ablation in some of the earliest Neolithic (ca. 5000 BP) skeletons from the Nankuanli East (NKLE) site in southwestern Taiwan. The patterns of ablation and teeth missing in 15 adult male and 8 adult females from the NKLE site are compared. With one exception, the most common pattern of tooth ablation in the NKLE skeletons, male and female, was the symmetrical removal of the maxillary lateral incisors and canines. In contrast to these findings, we further report no tooth ablation among the Iron Age skeletons from the Shisanhang (SSH) site in northwest Taiwan. The significance of the almost ubiquitous occurrence of tooth ablation among the earliest Neolithic skeletons from Taiwan, including the manner of tooth removal, and the absence of this cultural modification in the SSH teeth are explored. This study contributes to studies in anthropology that attempt to reconstruct past behaviors from archaeological human skeletons.

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Discrete dental traits differentiating *Gorilla* sexes, subspecies and species

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