identify potential osteological markers that characterize this secondary sexual characteristic. To quantify bony correlates of cheek flanges, a suite of cranial measurements was taken in addition to the non-metric quantification of zygomaticofacial foramina, which house the vessels that innervate and vascularize the fleshy cheek pads. The results show that adult male drills are characterized by wider zygomatics (and wider faces overall) and a higher number of zygomaticofacial foramina than mandrills. This suggests that this soft tissue trait can be identified in craniofacial skeletal morphology in the genus *Mandrillus*, which has implications for the identification of fleshy cheek flanges in fossil primates.

Macaques and the Ritual Production of Sacredness among Balinese Transmigrants in South Sulawesi, Indonesia

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Long-tailed macaques (*Macaca fascicularis*) at temple sites in Bali are often protected by local residents. An underlying cause of this protection is that the macaques may be considered sacred due to the presence of monkeys in Hindu texts, or through their frequent occurrence in sacred temple spaces. Macaque spatial context is an important component of the human-macaque interface in Bali because the revered long-tailed macaques may be shot at or chased away when found in or around agricultural plots. This research was conducted with Balinese transmigrants living in South Sulawesi, outside of Bali, to better understand the influence of space (sacred and non-sacred; ancestral and migratory), and other issues, on Balinese Hindu perceptions of macaque sacredness. Semi-structured interviews were conducted with 100 individuals from three transmigrant communities regarding their relationship with local booted macaques (*Macaca ochreata*). We found that the majority of transmigrants did not consider booted macaques sacred. Reasons given for this lack of sacredness included the absence of macaques in and around temple sites in these transmigrant communities, as well as frequent crop-raiding behavior. These results also have implications for the perception of macaque sacredness in Bali. The presence of long-tailed macaques at temple sites in Bali alone does not result in their sacredness, but rather it's their nondisruptive behavior during rituals that contributes to their perceived sacredness. This re-conceptualization of macaque sacredness importantly situates macaques and humans as sharing in the production of macaque sacredness.

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Documenting the first steps out of Africa: New findings from Arabia

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The Arabian peninsula is in a central geographic location between Africa and the rest of Eurasia. Despite its central location, relatively little palaeoanthropological research has been conducted until recently. Here we examine and report on new interdisciplinary archaeological findings from the Arabian peninsula. The aim is to address the relationship between climate change and hominin occupation history over the long term. Satellite imagery, climate simulation studies and environmental research indicate alternate wetting and drying of Arabia over the long term. Field studies have identified large numbers of Acheulean sites, localities distributed over landscapes measuring more than 100 km. Middle Palaeolithic sites, dated to between MIS 9 to 3, are associated with riverine and lacustrine settings. Quantitative analysis of Lower and Middle Palaeolithic industries demonstrates significant regional diversity, indicative of temporal change. Site density data and temporal gaps in the record suggest short term occupation intervals and regional abandonments, likely owing to the effects of climate change. Implications for the effects of climate change on the survival and movement of archaic and modern humans are discussed.

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Effects of early life experience on cortisol/salivary alpha-amylase symmetry in free-ranging juvenile rhesus monkeys

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Maternal neglect and abuse occur in both humans and rhesus monkeys (*Macaca mulatta)*. These phenomena represent forms of early life stress and have profound effects on an individual's development. In humans, repeated exposure to early life stress affects the functional symmetry of the two systems of the physiological stress response: the sympathetic nervous system (SNS) and the hypothalamic-pituitary-adrenal (HPA) axis. The SNS and HPA axis are expected to function symmetrically, but maltreated human children have been shown to exhibit asymmetry in biological markers reflecting activity of these two systems. Here, we test for a similar effect in juvenile rhesus monkeys. We collected 158 saliva samples over the course of two months from a cohort of 24 juveniles, which have been monitored since birth, from two naturally formed social groups on Cayo Santiago, Puerto Rico. Behavioral data were also recorded *ad libitum* during the saliva collection period. The saliva samples were assayed for cortisol (as an HPA biomarker) and alpha-amylase (as an SNS biomarker); these data were then combined with extensive behavioral data collected during this cohort's infancy. Our data help to elucidate the relationship between maternal neglect and abuse and physiological development, which is likely to be linked to long-term inter-individual differences in behavior and life-history.

Comparing avian and terrestrial scavenging evidence and addressing why the Crested Caracara (*Caracara cheriway)* steals bones

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Avian and terrestrial scavengers play a critical role in both forensic anthropology and archaeological investigations by (1) accelerating decomposition through rapid tissue removal, (2) causing pseudo perimortem trauma on the bones, and (3) dispersing the remains from the original deposition site. Previous studies have noted that vultures accelerate decay and much attention has been given to the impacts terrestrial scavengers have on physical anthropology investigations. However, few studies have assessed differentiating and quantifying avian and terrestrial scavenging evidence occurring on the same set of skeletal remains. To address the challenges in distinguishing avian from terrestrial skeletal trauma, we placed 43 deceased pigs in the fresh stage of decay across 6,000 km^2 in south central Texas during 2011 and 2012. The pigs were not protected from either avian or terrestrial scavengers and each scavenging sequence was monitored via remote infrared photography. Results revealed that turkey vultures (*Cathartes aura*) and black vultures (*Coragyps atratus*) were the most frequent scavenger (N=38) at the 43 pig trials and the gray fox (N=8) (*Urocyon cinereoargenteus*) was the most frequent terrestrial scavenger. However, the crested caracara (*Caracara cheriway*) had the greatest impact on the presence or absence of skeletal remains because this bird did not consume the remains but instead would grab a bone and then fly away. Knowledge of the caracara's tendency to steal bones from a site both during and after scavenging episodes of vultures and other terrestrial scavengers can offer knew insight as to why expected skeletal data is absent from deposition sites.

Micro high-resolution x-ray computed tomography of fossil Plesiadapiform (stem-primate) teeth to remove inter and intra specific measurement errors

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