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**Hilton Cleveland Downtown**

100 Lakeside Ave East • Cleveland, OH44114

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## ABSTRACTS

Sterkfontein), ongoing comparative morphometric analyses of the atlas of StW 573 will provide new evidence for reconstructing early hominin posture and locomotion.

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### A tale of three monkeys: male-mediated prenatal loss explained

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Infanticide by males has been the subject of intense empirical and theoretical study for decades. However, a related phenomenon, male-mediated prenatal loss, has received considerably less attention. Male-mediated prenatal loss occurs when inseminated or pregnant females terminate reproductive effort following exposure to a non-sire male, either through implantation failure or pregnancy termination. Male-mediated prenatal loss encompasses two sub-phenomena: sexually selected feticide and the Bruce effect. In this talk, we walk through three different evolutionary scenarios in three species of primate - the yellow baboon, the gelada, and the chacma baboon - to lay out a framework that explains the relationship between infanticide, feticide, and the Bruce effect and describes the proximate and ultimate mechanisms involved for each. We argue that male-mediated prenatal loss may have played a greater role in mammalian social evolution than has previously been documented.

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### Does learning evolutionary theory within anthropology help students reason about human evolution?

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Situated cognition theory sees learning as situated within the context of the social and cultural setting in which it takes place. Consequently, learning evolution within biological anthropology (b.a.) should result in the knowledge acquisition, retrieval and problem solving of evolutionary concepts being situated within the human context. This hypothesis was tested by asking introductory level b.a. (137) and biology (147)

students at a Midwestern university to explain evolutionary change of familiar or unfamiliar traits in either humans or nonhuman taxa and assessing their reasoning patterns. A previously published instrument, the ACORNS, was used to collect data post instruction on basic evolutionary concepts. Responses were scored for the presence of accurate key concepts (KCs) (e.g., variation, heritability, differential reproduction). A Mann-Whitney U test showed no differences for the biology sample between assessments that used human vs. nonhuman taxa, but the b.a. sample had a higher KC score (0.01) for the assessment with nonhuman taxa and used the KC 'differential reproduction' more for nonhuman taxa ( $p = 0.024$ ). Furthermore, a comparison of how familiar and unfamiliar traits in the items affect reasoning patterns found no differences between items for the biology sample, while the b.a. sample had higher KC scores for items that asked about familiar traits in nonhuman taxa ( $p = 0.006$ ). These results suggest that, overall, biology students are able to generalize their knowledge about evolutionary change across contexts more fluidly, while some contextual features appear to impact anthropology students' reasoning patterns, highlighting important implications for b.a. instruction.

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### Hominin origins: New evidence from the eastern Mediterranean

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Great ape fossils, ranging in age from about 9.5 to 7.2 Ma, are known from Bulgaria, Greek Macedonia, Attica and Anatolia. Usually attributed to a single genus, recent analysis confirms the generic distinction of *Graecopithecus* (Attica) and *Ouranopithecus* (Macedonia.) Within Macedonia, the samples from Ravin de la Pluie and Xirochori, both about 9.5 Ma, form a well-defined hypodigm for *Ouranopithecus macedoniensis*. A younger sample from Macedonia but further to the south, Nikiti 1, dated to between 8.5 to 9 Ma, is close in age to Çorakyerler from central Anatolia. Nikiti 1 and Çorakyerler are distinguished from *Ouranopithecus macedoniensis* by larger post-canine teeth, more homomorphic premolars and smaller canines. *Graecopithecus*, from the

7.2 Ma site of Pygros Vassilissis (Attica), has the smallest canine (as suggested by root size), fused premolar roots and the largest molars relative to mandibular corpus dimensions of all eastern Mediterranean great apes. These samples may represent an evolving lineage characterized by increasing postcanine and decreasing canine sizes. We propose two alternative phylogenetic hypotheses. This lineage, linked phylogenetically with the middle and late Miocene dryopiths, may be a terminal representative of the radiation of European Miocene great apes, having survived and adapted to more open conditions in the eastern Mediterranean. Alternatively, this lineage may represent a transition from the stem hominines of central and Western Europe to the earliest known hominins of Africa (e.g. *Sahelanthropus*, *Orrorin*) and as such documents the origin of the hominins in Europe.

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### Cranial trauma prevalence in Neanderthals and early Upper Paleolithic modern humans

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A high frequency of traumatic injuries has been considered common for Neanderthal (NEA) skeletal remains, and is variously attributed to stressful NEA lifestyles, violent behaviors and dangerous hunting practices – in contrast to Upper Paleolithic anatomically modern humans (UPH). However, only few quantitative studies on Paleolithic traumata exist to date and interpretations are mainly based on narrative, case-based evidence. Here, we assess the hypothesis of higher cranial trauma prevalence in NEA compared to UPH. Employing a population-level approach, we compiled an exhaustive database from the literature comprising 114 NEA and 90 UPH specimens (corresponding to 295 NEA and 541 UPH single cranial elements) with and without traumata from sites all over West-Eurasia dating to ca. 80-20 ka BP. We used generalized linear mixed models employing a Markov chain Monte Carlo algorithm to examine how trauma prevalence can be predicted by various variables, including taxon, age-at-death, sex, and skeletal preservation, while accounting for variation between geographic locations and cranial elements. Results show similar overall trauma prevalence in the two taxa, rejecting the hypothesis of higher NEA cranial trauma. Moreover, we found a higher prevalence for males in both taxa