focus this work on traits related with manipulative capabilities and evidence for laterality in hand use: carpal bone morphology, development of the palmar tubercles, carpal tunnel dimensions, articulation between the trapezium and first metacarpal, thumb morphology and dimensions, finger length and phalangeal proportions, trochlea morphology and distal tuberosity expansion. The SH hand bones exhibit a number of primitive traits not present in Upper Pleistocene Neandertals. Other traits are close to the Neandertal morphology and some features show more variability than in Neandertals. Previous studies of the hearing capacities, endocast asymmetries and orientation of non-masticatory striations on the anterior teeth have suggested the presence of both language capacities and right-handedness in the SH fossils. The hand morphology of SH indicates a powerful power-grip and precision-grasping capabilities that are similar to what has been described on Neandertals and modern humans.

Geographic variation in hair $\delta^{13}C$ and $\delta^{15}N$ values of vervet monkeys (*Chlorocebus aethiops*) reflects anthropogenic impact.

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For many nonhuman primates, living amongst humans is a reality. Human-nonhuman primate sympatry frequently occurs among those nonhuman primates that are dietary generalists and largely terrestrial. In Africa, such relationships are often found among humans and cercopithecoids. Recently, the field of ethnoprimatology emerged to examine human-nonhuman primate interplays. Ethnoprimatologists use cultural anthropological and primatological methodologies in order to gain an understanding of these interconnections. As a result, many ethnoprimatological studies have explained human-nonhuman primate associations, largely in qualitative terms. By using stable carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) isotope analysis we use quantitative data to understand the degree to which humans impact vervet monkey (*Chlorocebus aethiops*) dietary patterns and behavioral ecology. Hair was collected from 134 anesthetized animals hailing from 10 South African populations to study aspects of vervet monkey genomics, immunology, and phylogeography. Among these 10 locations, humans have modified vervet monkey habitats to varying degrees and the nature of human-vervet monkey interactions range greatly. The vervet monkey population at Woodhill (Pretoria) was regularly provisioned by the local people. In contrast, the Dronfield population was not observed eating human foods. The majority of vervet monkey populations we sampled consumed human foods when available. Those populations at Soetdoring, Baviaanskloof /Geelhoutbos, Parys, and the Gariep Dam used human foods to supplement their diets. This study demonstrates the utility of stable isotope analysis for understanding human-nonhuman primate interconnections. This technique may be prove useful for primatologists interested in these associations, but lack the time or resources to employ the traditional long-term ethnoprimatological approach.

Ecological influences on primate maternal investment strategies.

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Relatively good data exist on primate maternal investment patterns (e.g., age at first birth, relative gestation length, neonate size, litter size, age at weaning, and weanling weight). All must be examined after controlling for adult female size, because size sets so much of the pace of life history. Some aspects appear to be largely phylogenetically determined, and as others have noted, family explains much of the variance. But ecological influences may influence variations within family. Here we examine variation in several maternal components, seeking ecological correlates. Preliminary analysis identifies a number of primates in which one or more maternal variables is a standard deviation or more from predicted values, and finds ecological correlates for some of these. We explore within-family variation in the three largest families (Cercopithidae, Cebidae, and Callitrichidae). Finally, we examine variation within the Homininae, and find that human traits are less unusual than previously thought.

Associations between localized variation in brain anatomy and social behavior in healthy human subjects.

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Understanding the relationship between brain structure and function is critical for interpreting evolutionary changes in the human brain. It has been suggested that social environments play a key role in this process and brain size has been shown to correlate with social group size across primate species. Studies have indicated a disproportionate elaboration in areas of the prefrontal cortex in hominin evolution. The prefrontal cortex is known to be relevant to social processing, which suggests that selection for social ability may have played a significant role in prefrontal elaboration. Thus, in order for selection on social abilities to result in evolutionary changes in brain morphology, there must have been genetic correlations within modern humans between brain anatomy and social ability. To assess this possibility, associations between localized brain anatomy and several behavioral measures related to social facility were determined on a sample of 36 female sibling pairs (72 subjects total). Voxel-based morphometric methods were used to quantify brain morphology in MRI scans, and self-reported degrees of social interaction/engagement were used as a proxy for sociality. A within-family analysis was used to control for possible confounding variables, such as socioeconomic status. Our results show both positive and negative associations distributed across various regions of the brain. There are suggestions of positive correlations in anteromedial prefrontal areas and negative correlations in areas of orbital frontal and anterior cingulate, though they are modest. Possible evolutionary and methodological explanations for these results will be discussed.

Partial funding for this study was provided by the Alexis de Tocqueville Institution and Indiana University.

Teeth and handedness of *Homo heidelbergensis* from Sima de los Huesos site (Sierra de Atapuerca, Spain).

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Handedness in living humans is well-established with a h igh degree of manual specialization on the right side. Some have attempted to document handedness, in the fossil record, but it remains unclear where and when in human evolution right-handedness appeared ad became established in the modern 9:1 pattern.

Dental microwear analysis is a technique which provides information about the direction of action and handedness.

Our experimental work shows that these striations are the result of holding an object or materials between the anterior teeth and processing the items with a lithic tool. The orientation of the resulting cutmarks on dental enamel is different if the action was made by the right or left hand.

Analysis of striation patterns found on anterior teeth of *Homo heidelbergensis* sample from Sima de los Huesos (Sierra de Atapuerca, Spain) reveals a consistent pattern of handedness. These results clearly demonstrate that at least 500,000 years ago, the Sima de los Huesos population was already right-handed.

Ecosocial behaviour of Sierra de Atapuerca (Spain) hominids during Quaternary II. (Comportamiento ecosocial de los homínidos de la Sierra de Atapuerca durante el Cuaternario II). Ministerio de Ciencia e Innovación (CGL2009-12703-C03-02) Government of Spain.

A Vandenbergh effect in wild geladas?