

*Mate Choice***Big Hips = Brainy Babies?**

Biologists—and many others—have long known that women tend to store fat in their buttocks and thighs, while men retain it in their abdomens. This results in women having lower waist-hip ratios (WHRs), measured as the circumference of the waist divided by the circumference of the hips. Many cross-cultural studies have shown that men prefer women with low WHRs (0.6–0.7). Preferences often evolve when a signal (in this case, WHR) is correlated with an underlying fitness-enhancing trait. Past research has sought to show that a low WHR is related to a woman's health or fertility, but most of the results are based on limited and, at times, contradictory evidence.

William Lassek and Steven Gaulin (*Evolution and Human Behavior* 29 [2008]) hypothesize that a low WHR signals the availability of critical brain-building resources and therefore has consequences for cognitive performance. During human female development, storing gluteofemoral fat is a high priority. This fat is selectively mobilized during late pregnancy and lactation because it contains fatty acids that are critical for fetal and infant brain development. Lassek and Gaulin find that WHR is negatively correlated with the cognitive performance of both the mother and her offspring. This research unites two novel features of humans, sexually dimorphic fat distributions and larger brains, and sheds light on their coevolutionary history. The findings suggest that the unusual fat deposition patterns in women may be the result of selective pressures on their ability to support fetal and infant neurodevelopment. A male preference for women with a low WHR thus confers a selective advantage on his offspring, namely, braininess.

—R. Schacht

*Psychological Anthropology/Conflict Studies***Spirits, Mediums, State Formation, and the Vietnam War**

Approximately five million residents were killed during the Vietnam War. In *Anthropology of Consciousness* (18 [2007]), Mai Lan Gustafsson examines the role of spirits and possession illness in Vietnam. The conditions of war, many say, turned the wartime dead into malevolent spirits who took revenge on the living through vivid nightmares, dissociative speaking, and hallucinations. Gustafsson describes the relationship between possession illness, the war, and nation-state building practices in Vietnam.

Through a close examination of three war survivors struggling with malevolent spirits,

Gustafsson outlines the significance of funerary rites that allow the dead to transform into *linh hon*, ancestral spirits who care for descendants. A person who dies young or whose body was mutilated or not buried correctly can become *con ma*, an angry ghost. Not surprisingly, the very conditions of war can result in many becoming *con ma*. Spiritual priests or mediums were once used to appease the needs of the dead, but, declared backward, these practices were banned after the Communist takeover in the 1940s. As a result, many were unable to seek relief during the war as *con ma* exacted revenge on the living.

When the state began opening free markets during the Renovation of 1986, it also loosened some enforcement of spiritual restrictions. Many who struggled with *con ma* began to seek spiritual aid—what Gustafsson calls an “unintentional result of economic liberalization.” Though not officially sanctioned, today spiritual mediums, fortune tellers, and others are operating with limited police interference, allowing many individuals to seek counsel and finally negotiate a spiritual truce some 30 years after the war.

—M. Stewart

*Genetic Anthropology***Carrotop Neanderthals?**

It is well known that modern humans living in higher latitudes tend to have lighter skin and hair, so perhaps it should not come as a surprise that Carles Lalueza-Fox and colleagues (*Science* 318 [2007]) recently found evidence in ancient DNA that some Neanderthals in Europe may have been redheads. The MCR1 gene is one of multiple genes responsible for skin and hair pigmentation; in humans, a mutation that causes this gene to break down results in pale skin and red hair. Interestingly, a similar mutation was discovered in the ancient DNA of two Neanderthal skeletons, found in Spain and Italy. Although it is a mutation different from the human version, it would still result in a similar coloring. The fact that no modern humans have this mutation provides evidence that the study's results are not due to modern contamination—a major problem when sequencing ancient DNA. Moreover, it also suggests that the presence of redheads in both Neanderthals and humans is not due to interbreeding.

Most researchers believe that people living in higher latitudes have lighter skin pigmentation so that they can absorb an adequate amount of the sun's rays—weaker in these places—needed to make vitamin D. The discovery of the new mutation suggests that some Neanderthals (at least 1% of the pop-

ulation, researchers estimate) may have independently evolved the same type of red hair and pale skin adaptation to low-light environments.

—C. Brown

Primateology

Benefits of Eating Dirt

Eat dirt—it can help fight malaria! The consumption of soil, also known as geophagy, is commonly thought of as an aberrant behavior. In humans it is often classified as an eating disorder or a form of pica, a condition in which individuals crave inedible materials such as paper or stones. Geophagy, however, is widespread in the animal kingdom and traditional human societies and can actually provide several health benefits. In addition to providing a source of rare minerals, certain types of soil have adsorptive properties that move toxins through the digestive system without detriment to the consumer. An intriguing new study by Noémie Klein and colleagues (*Naturwissenschaften* 95 [2008]) demonstrates that ingesting soil enhances the antimalarial properties of some plants.

Chimpanzees living in Kibale, a Ugandan reserve, regularly consume the leaves of *Trichilia rubescens*, a plant known to have antimalarial properties, preceding or immediately following small handfuls of soil. In order to investigate the reason for this behavior, the authors collected samples of the soil and *T. rubescens*. They simulated chimpanzee digestion through a series of mechanical and chemical processes and found that while the leaves of *T. rubescens* alone provided a small antimalarial benefit, the medicinal properties were greatly enhanced when consumed with soil. Furthermore, the soil regularly consumed by the chimpanzees contained high levels of kaolinite, the primary ingredient in many antiarrheal medications. These findings suggest that Kibale chimpanzees are self-medicating, and the observance of regular soil consumption in other chimpanzee populations, as well as ingestion coinciding with other plant types, provides many new avenues for the investigation of medicinal plant use by nonhuman animals.

—S. Etting

Science and Technology Studies

Biopolitics in vivo and in vitro

Since the 1980s, biomedical and biotechnological industries have created a highly exploitative global bioeconomy of human tissues, affecting, among other actors, deprived

young women worldwide. Catherine Waldby and Melinda Cooper (*Australian Feminist Studies* 23 [2008]) analyze female reproductive biology by following markets of oocytes (unfertilized human eggs). Influenced by venture capitalists, the research of assisted reproductive technologies has triggered a demand for tissue that can no longer be supplied by local donation and is now broadening its scope toward Third World countries. There, market rationality frames women as egg-providing machines who naturally produce surplus tissue, not as individuals who have to endure painstaking and risky procedures.

Transnational fertilization clinics create strategies for sale and recruitment, depending on the elasticity of national and international regulation of oocyte trade, and target women willing to go through the invasive treatments and to assume the high risks involved in egg harvesting. From a feminist perspective, Waldby and Cooper have concerns about the scientific, economic, and political interests that frame these women as “low-cost suppliers.” For example, a woman in the United States might receive around \$4,000 for the procedure, while in Romania an oocyte would be worth only about \$200. Women are not only “underpaid” but also devalued in the process. The authors propose a conceptual shift in which women’s roles in the bioeconomy must be understood as forms of “reproductive-clinical labor,” hopefully making their participation and bodily integrity more visible and valued.

—C. A. Barragán

Paleoanthropology

Hominin Status of *Homo floresiensis* Supported

When the 1-m-tall remains of *Homo floresiensis* were discovered on the Indonesian island of Flores in 2004, many researchers wrote the tiny skeleton off as a modern human with a form of dwarfism, microcephaly, that results in an unusually small brain and body. Although others disagreed, arguing that the remains represented a new species of human ancestor, compelling evidence in favor of this argument was not available until recently.

Matthew Tocheri and colleagues (*Science* 317 [2007]) published an article about the hand of this small individual that offers strong support of its status as a new species of hominin. Tocheri et al. noticed that one of the wrist bones, the trapezoid, looks different in modern humans than it does in

African apes. Whereas chimpanzees have trapezoids shaped like a wedge, those of modern humans are more boot shaped. This boot-shaped wrist bone is also found in our closest ancestor, *Homo neanderthalensis*, but all older hominins have wrist bones like those of chimpanzees.

Microcephaly does not affect the shape of the wrist bone, so if *H. floresiensis* is indeed a dwarfed modern human, its trapezoid should be boot shaped. But, when Tocheri et al. examined the wrist bone of the skeleton from Flores, they discovered that it had a more primitive, wedge-shaped wrist bone like that of apes. This evidence supports the original discoverers’ claims that *H. floresiensis* is a previously unknown species of hominin that branched off from our lineage more than 800,000 years ago. Although how its primitive wrist affected its ability to manipulate items is yet unknown, this species was associated with a range of stone tools most likely used for hunting and protection.

—C. Brown

Research Summarized

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