

## Plenary I: Hunter-Gatherer Research, Human Evolution, and Human Nature: Dialogues and Debates

### Introduction : The Paradoxical Concept of Human Nature

**Author(s):** Lee, Richard B. (University of Toronto, Canada) and Kirk Endicott, (Dartmouth College, Hanover USA)

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### 16540 - Human Evolution and Hunter-Gatherer Ethnoarchaeology: Integrating history and analogy.

Presentation type: Oral presentation

**Author(s):** Lane, Paul (Department of Archaeology & Ancient History, Uppsala University, Uppsala, Finland / Finnland)

Ethnoarchaeological research has made enormous contributions to scholarly understanding of the diversity of hunter-gatherers around the globe, their material practices and potential archaeological signatures. Studies continue to provide valuable correctives to preconceptions concerning hunter-gatherer behaviour, food procurement strategies, technological systems, discard practices and their interactions with non-hunter-gatherer societies and cultures. It is also claimed that such studies provide robust analogies with which to interpret the physical traces left by earlier hunter-gatherer societies throughout the course of human history. Yet, the field has been subject to fierce criticism in recent decades over the relevance of these analogies and the ethics of using hunter-gatherer moderns to infer ancient hunter-gatherer material practice. Drawing on examples from sub-Saharan Africa, this paper offers a review of these debates to explore whether, in the absence of detailed historical analysis, the practices of hunter-gatherer moderns can ever be regarded as analogous to those of our pre-modern ancestors.

## **16534 - Diet in Human Evolution: The history and relevance of the expensive tissue hypothesis**

Presentation type: Oral presentation

**Author(s):** Aiello, Leslie (*Wenner-Gren Foundation, USA*)

The Expensive Tissue Hypothesis (ETH) posits an energetic trade-off between brain and gut size in human evolution. It argues that to support the large, energetically expensive human brain the size of the equally expensive digestive system was reduced and that this was achieved through the adoption of an easy to digest diet including quantities of animal-based foods. The ETH was pioneering in its focus on diet and energetics, and in the 25 years since its introduction many others have built on its foundation. New information from genetics, stable isotope analysis, and other innovative approaches has expanded our understanding. A high quality diet remains central to our evolution, but we now have a much richer understanding of the details of this diet, the timing of its introduction and its implications for human biological and behavioral evolution. It is time to up-date the relevance of the Expensive Tissue Hypothesis.

## **16539 - Using Modern Hunter-Gatherer Data and Modeling Tools to Resolve Debates about Life History Evolution**

Presentation type: Oral presentation

**Author(s):** *Kramer, Karen L (Department of Anthropology, University of Utah, Utah, USA)*

One of the central debates in human life history evolution is how do mothers support a rapid reproductive pace. This is significant because high fertility gives humans a decisive demographic advantage compared to our closest relatives and contributes to the long-term success of hominins. Hypotheses based on modern hunter-gatherer data to explain the evolution of this trait are polarized, emphasizing the cooperation of either grandmothers or fathers. However, if cooperation is ancient, it likely emerged under not fully modern conditions and using modern hunter-gatherer data to evaluate its evolution likely has led to misinterpretations of causal relationships and selective pressures. I develop a model that considers the evolution of cooperation against a landscape of evolving life history traits. I use this as an example to illustrate that modeling approaches can usefully bridge the gap between modern hunter-gatherer and past conditions and can generate new predictions about a range of evolutionary topics.

## **16535 - Hunter-gatherers, Cooperative Breeding, and Human Evolution: Are foragers a practical model for evolutionary reconstructions of human behavior?**

Presentation type: Oral presentation

**Author(s):** *Crittenden, Alyssa (Department of Anthropology, University of Nevada at Las Vegas, Las Vegas, USA)*

The cooperative breeding system, increasingly considered to be a derived characteristic of the genus *Homo*, permits mothers to produce multiple dependent young at a relatively fast rate by relying on the support of others. Contemporary foragers are often recruited as reference standards for studying the evolution of cooperative breeding. While hunter-gatherers are by no means models of Paleolithic populations, they do engage in a nomadic lifestyle and subsistence regime that characterizes the bulk of human evolution. Based on compelling ethnographic data from various forager groups, we now know that the “pan-forager” model of child care (Hewlett et al. 2000) involves a wide array of caregivers who routinely provide high-quality investment to infants and children. Here, I add to this discussion by contributing detailed naturalistic observation data on distributed childcare among the Hadza foragers of Tanzania and address whether foragers represent a viable model for studying evolutionary aspects of reproductive behavior.

## **16541 - Data on hunter-gatherer networks can inform models of Pleistocene information exchange and social organization.**

Presentation type: Oral presentation

**Author(s):** *Vierich, Helga (Yellowtail Tribal Council and Northern Lakes College, USA)*

Controversy continues concerning human nature and the antiquity of modern human cognition and behaviour. Study of hunter-gatherer economies, prehistoric and contemporary, combined with ethological and genetic data, can iron out persistent snags in designing empirically sound models. Here we present one such model, supporting the early inception and persistent positive selection in favour of long standing cooperative behaviour in humans. We also show that this model favoured extension of cooperation beyond kin groups, and thus was integral in avoiding inbreeding depression and cultural stagnation. We hope thereby to highlight the persistence of positive selection favouring both rational reflection as well as emotional volatility in human nature and what implications this holds for the future of humanity.

The implications, for combing out a few knotty tangles that have pained us of late, are then discussed. These include: 1) claims of delayed "behavioural modernity" and recent self-domestication, 2) claims that contemporary forager economies are unrepresentative of Palaeolithic, 3) claims of an evolutionary history of inter-group competition and warfare, and, finally, 4) the persistence of progressivist models of featuring fixed stages of cultural evolution.

## **16538 - Gender-blind accounts of human origins mean war (...and can't explain our brain size)**

Presentation type: Oral presentation

**Author(s):** *Knight, Chris (Department of Anthropology, University College London, London, Un. Kingdom / Ver Königr.)*

Recent population genetic studies show a deep-time bias toward matrilocality among African immediate-return hunter-gatherers. Despite this and other evidence for flexible (most often initially matrilocality) residence patterns among extant hunter-gatherers, prominent evolutionary theorists continue to assume patrilocality and male kin-bonding as core features of human evolution, implying fundamental continuity with great apes. On this basis, human patterns of in-group solidarity and morality are explained as products of territorial conflict between neighbouring bands.

A serious problem for this argument is posed by the fact that brains tripled in size relative to chimpanzees through the Pleistocene – indicating that human mothers must have been offsetting the increased costs of childcare by recruiting helpers as baby-sitters. What prevents great ape mothers from doing this is male philopatry, preventing experienced mothers from acting as trusted baby-sitters for their nursing daughters – the distinctively human ‘grandmothering’ pattern.

Co-operative breeding is today seen as fundamental to human intersubjectivity, hypersociality and self-domestication. The implications of this for residential flexibility, female coalitionary decision-making and gender egalitarianism are explored.

## **16537 - Are warfare and homicide responsible for the low population growth rates of prehistoric hunter-gatherers?**

Presentation type: Oral presentation

**Author(s):** Kelly, Robert L. (*Department of Anthropology, University of Wyoming, Wyoming, USA*)

Although the data of archaeology seem poor relative to the richness of ethnographic data, they provide the longest of long-term data sets. Therefore, archaeology is necessary for the study of the long-term character and effects of hunter-gatherer behavior. This paper uses radiocarbon date summed probability distributions to look at the 12,000 year record of hunter-gatherer population in the Rocky Mountains of the western U.S. in relation to climate change to provide a long-term perspective on hunter-gatherer behavior. Specific questions include: Are hunter-gatherer demographic features adapted toward a goal of maintaining population in long-term equilibrium with resources? and Are warfare and high rates of homicide responsible for holding hunter-gatherer population at low levels until the rise of agriculture? We find that hunter-gatherers seek to maximize growth when they can, but that growth even under good conditions is low (average, 0.3%) and trails environmental improvement by 300-350 years. However, there is no evidence that violence, evidence for which appears largely at the end of the record, is a significant factor in holding growth back. Population is probably regulated by the interplay of women's diet and workload, and is related neither to intentional efforts to maximize growth nor to minimize the impact of a human population on the environment.

**16536 - Toward Resolving the Forager War/Peace Debate: Assessing relevance, logic, and rigor.**

Presentation type: Oral presentation

**Author(s):** *Fry, Douglas P. (Department of Anthropology, University of Alabama at Birmingham, Birmingham, USA)*

Archaeological data and ethnographic information on nomadic foragers are crucial to the investigation of war, peace, and human nature. However, the warlikeness/peacefulness of nomadic foragers, past and present, is currently much debated. As a move toward resolving this debate, this paper offers a critical assessment of different approaches to forager data. First the issue of what type of forager societies is relevant to evolutionary questions of human nature and the past are considered. Second, the question of what type of violence constitutes warfare is discussed. And third, a comparison of the pros and cons of several different methods of using nomadic forager data is presented: (1) the ethnographic case study, (2) self-selection of multiple cases, (3) comparative assessment of patterns across a large corpus of forager ethnology (i.e., attention to universals or near universals), and (4) systematic sampling of cases. A history and philosophy of science perspective leads to the observation that the reasons behind divergent interpretations of forager warlikeness/peacefulness in large part stem from different approaches to the above three problem areas, that is, differences in (1) what type of foragers are considered relevant to study, (2) how war is defined, and (3) the manners in which forager data are sampled and analyzed.



