

Anthropology Lecture Series

Ape energetics and the Human Paradox

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Abstract:

Compared to the living apes, human foragers use the longest daily travel distances and spend the greatest amount of time and energy gathering and preparing food. Yet despite these substantial daily energy costs, human foragers, even those in low-productivity habitats, reproduce at substantially higher rates than the other great apes. This Human Paradox – the ability to maintain high reproductive output despite high foraging costs – suggests that human metabolic physiology is adapted to a high rate of energy throughput, requiring more mass-specific energy per day than other apes and consequently providing more energy for reproduction. Alternatively, daily energy expenditures may be similar in humans and other apes, and differences in reproductive rates may be caused by differences in energy allocation (e.g., repair versus reproduction). In this talk, I discuss these two hypotheses and test them using direct measurements of daily energy expenditure in humans, orangutans, and other mammals. Results suggest reproductive effort is in fact correlated with daily energy throughput, and that humans may have accelerated throughput compared to other apes. I discuss the implications of these findings for reconstructing our evolutionary history.

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5:00-6:00 pm