Evolution of Human Diet

'Erst kommt das Fressen, dann kommt die Moral.'
Die Driegroschenoper (1928)

Diet is one of the central occupations of human existence, and examining how this changed over time has implications for how we view contemporary questions on human diet and nutrition, how our hominin ancestors lived and evolved, and how, and under what conditions, mankind spread across the globe. The guidebook for this course, *Evolution of the Human Diet*, gathers together researchers from fields who share this: a desire to know and understand the evolution and ecology of ourselves, our ancestors, and our primate relatives. Nutritional analysis and its bearing on evolutionary medicine, models of hominin diets based on extant primate diets, archaeological investigations of subsistence, and reconstructions of diets based on hominin fossils, shall be examined and discussed.

Instructor

Hylke de Jong
Office hours: by appointment
Room: BIO 204B

Class meetings

Monday and Thursday: 9.15-10.35 BIO-302 in the Biological Sciences Building, 3rd floor.

Materials

In addition to the resources available on Sakai, the following book is required:
Evolution of the Human Diet: The Known, the Unknown, and the Unknowable (2007): Peter S. Ungar (ed), Oxford University Press, Oxford, etc.

Learning goals

- Identify theoretical issues with respect to hominin and human diets.
- Identify key technical issues in dietary reconstruction.
- Achieve familiarity with current scientific literature on the evolution of hominin diets.
- Apply the evolutionary perspective to medical questions such as diabetes and obesity.
- Develop a proposal for significant research on an important question pertaining to hominin dietary evolution.

Grading

Grading will be based on participation in class discussion (20%), chapter and paper reviews (40%), a term paper in the style of a grant proposal (30%) and a poster presentation (10%).

Schedule

1. Week 1: **8 September** Introduction

2. Week 2: **12 & 15 Sep** Refresher Human Evolution and Chemical evolution of the Universe
3. Week 3: **19 & 22 Sep** Chapter 1 Early Hominin Diets: Overview and Historical Perspectives (Alan Walker)
4. Week 4: **26 & 29 Sep** Ch 2 Whose Diet? An Introduction to the Hominin Fossil Record (Amanda Henry and Bernard Wood) and Ch 3 The Evolution of the Hominin Diet from a Dental Functional Perspective (Lucas)
5. Week 5: **3 & 6 October** Ch 4 Dental Functional Morphology: The Known, the Unknown, and the Unknowable (Ungar) and Ch 5 What Do We Know and Not Know about Diet and Enamel Structure? (Teaford)
6. Week 6: **10 & 13 Oct** Ch 6 Manibular Biomechanics and the Paleontological Evidence for the Evolution of Human Diet (Daegling and Grine) and Ch 7 What Do We Know and Not Know about Dental Microwear and Diet? (Teaford)
7. Week 7: **17 & 20 Oct** Ch 8 Icarus, Isotopes, and Australopith Diets (Sponheimer, Lee-Thorp and De Ruiter) and Ch 9 Reconstructing Early Hominin Diets: Evaluating Tooth Chemistry and Macronutrient Composition (Schoeninger)
8. Week 8: **24 & 27 Oct** Ch 10-12 The Archaeological Record
9. Week 9: **31 October & 3 November** Ch 13 Theoretical and Actualistic Ecobotnaical Perspectives on Early Hominin Diets and Paleoecology (Peters) & Ch 14 African Pliocene Paleoecology: Hominin Habitats, Resources, and Diets (Reed and Lector)
10. Week 10: **7 & 10 Nov** Ch 15 Modeling the Significance of Paleoenvironment (Sept) and Ch 16 The Cooking Enigma (Wrangham)
11. Week 11: **14 & 17 Nov** Ch 17 Seasonality, Fallback Strategies, and Natural Selection: A Chimpanzee and Cercopithecoid Model for Interpreting the Evolution of Hominin Diet (Lambert) and Ch 18 Energetic Models of Human Nutritional Evolution (Leonard, Robertson, and Snodgrass)
12. Week 12: **21 & Thanksgiving**- no class Review
13. Week 13: **28 November & 1 December** Implications of Studies of Early Hominin Diets (Chapters 19-21)
14. Week 14: **5 & 8 Dec** Presentations
15. Week 15: **12 December** last class