Lecture 11: Key Terms, Concepts and questions to ponder

You should become familiar with the following terms and concepts from your readings in Campbell *et al* and Wood and Collard, 1999 for this lecture. You should also give some consideration to the problems and issues mooted in the "To Ponder" section.

Vocabulary

Homo habilis ? (Australopithecus habilis)

Homo rudolfensis (?Kenyanthropus rudolfensis?) ? (Australopithecus rudolfensis)

Homo ergaster

monophyly common adaptive strategy

Notes:

Definition of the genus *Homo* - historical perspectives

Competing definitions of the "genus" category

) evolutionary systematic method

a genus is a species or group of species of common ancestry that occupies a different ecological situation or "adaptive zone" than occupied by the species of another genus.

for a very reasoned defense of the traditional evolutionary taxonomic method and its application to recognizing genera, see Marks, J. 2005. Phylogenetic trees and evolutionary forests. *Evolutionary Anthropology* 14:49-53.

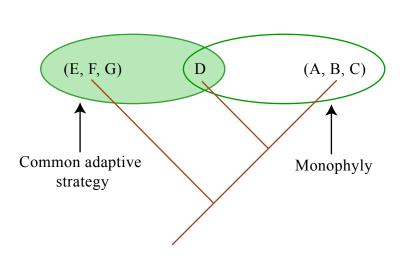
) cladistic method

a genus is a group of species that are more closely related to one another than they are to any species assigned to another genus.

for an attempt to address both the issue of genera as monophyletic entities and the recognition of genera as presenting different adaptive zones see Wood, B. and M. Collard, 1999 The changing face of genus *Homo. Evolutionary Anthropology* 8(6):195-207.

To Ponder

) What are the characteristics which distinguish Australopithecus from Homo?



An illustration of the conflict between defining a genus using claclistic and evolutionary systematic criteria. With which group of species should species D be classified? If it is grouped with species A, B, and C, the resulting genus would be monophyletic but not adaptively coherent, whereas if it is grouped with species E, F, and G, the resulting genus would be adaptively coherent but not monophyletic.

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Figure 3. Oblique views of KNM-ER 1470, the lectotype ¹³² of *Homo rudolfensis*, and KNM-ER 1813, the best-preserved cranium of *Homo habilis* sensu stricto. ³¹ It has been proposed that both these taxa should be transferred from *Homo* to *Australopithecus*. These species would thus become, respectively, *Australopithecus rudolfensis* (Alexeev, 1986) ¹³⁰ Wood and Collard, 1999 ⁶⁴ and *Australopithecus habilis* (Leakey, Tobias, and Napier, 1964) ³¹ Wood and Collard, 1999.

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Figure 4. Lateral views of KNM-ER 3733, a representative of *Homo ergaster*, and KNM-ER 1813, a representative of *Australopithecus habilis*.