



## Modern Human Origins Revision Session

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28 January 2019, Lecture 11, Reyes-Centeno, Sahle, & Bentz



## Organization Details

- Time: Wednesday 04.02. at 12 noon (c.t.)
- Place: Institut für Naturwissenschaftliche Archäologie,  
Rümelinstraße 23, Room 703
- Duration 90 mins
- You will have to give your full name and Student-ID
- Bring your personal ID card (Personalausweis) as well

## Course websites

<https://moodle02.zdv.uni-tuebingen.de/course/view.php?id=1932>

[http://www.christianbentz.de/teaching\\_humanOrigins2018.html](http://www.christianbentz.de/teaching_humanOrigins2018.html)



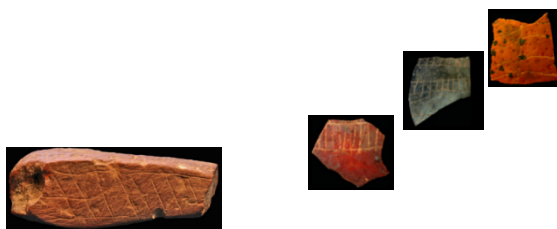
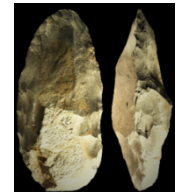
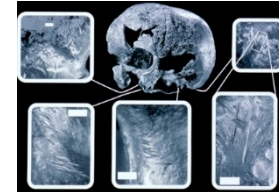
# The Archaeological Perspective

- Archaeology at the dawn of modern humans
- The archaeology of modern humans
- The Out-of-Africa dispersal



## Modern Human Origins & Dispersal: An Archaeological Perspective

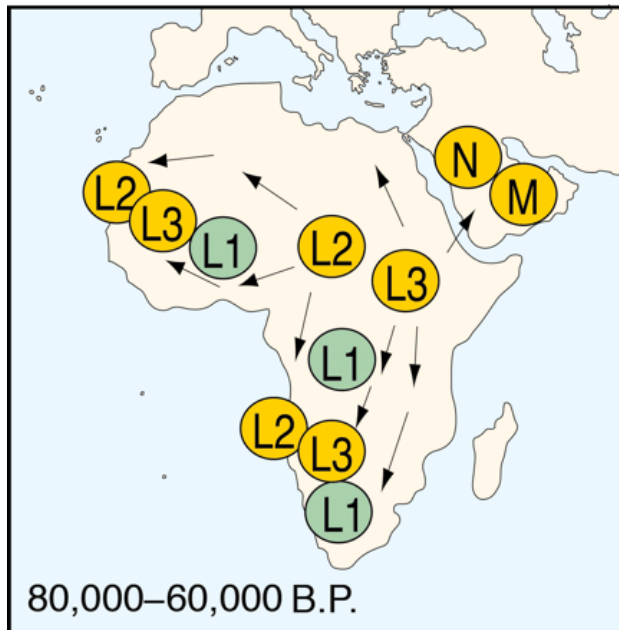
- The archaeology of *H. sapiens*: MSA/MP, Acheulean
- Transition: Evolution OR revolution?
- Dispersals: neural, climatic, demographic...shift?



Wadley et al. (2013); Klein 2008; McBrearty & Brooks 2000



## Modern Human Origins & Dispersal: An Archaeological Perspective



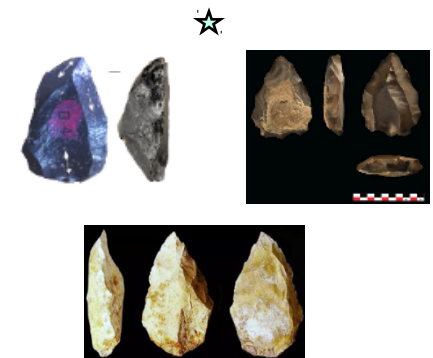
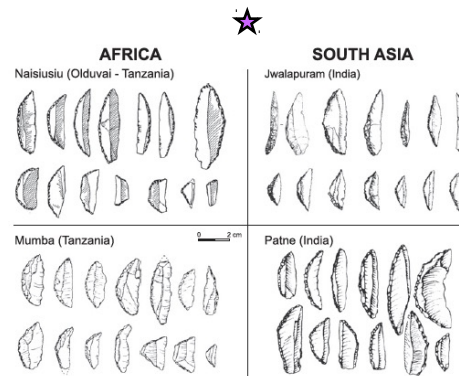
- ✓ Dispersal routes?
- ✓ Role of culture
- ✓ How many dispersals
- ✓ Push and/or pull factors

*Wadley et al. (2013); Klein 2008; McBrearty & Brooks 2000*

# Modern Human Origins & Dispersal: An Archaeological Perspective

## Tracking the “Out-of-Africa”

Similarity in technology and/or tool forms



*Mellars (2006); Armitage et al. (2011); Rose et al. 2011*



## Modern Human Origins & Dispersal: An Archaeological Perspective

### Multiple choice

- Based on the archaeological evidence in hand, the consensus view is that:
  - a. behavioural complexity appeared as a package, first in southern South Africa.
  - b. modern humans dispersed from eastern Africa, through the Nile Valley, to the Levant and beyond
  - c. most technologies and behaviors saw gradual elaboration and increasing complexity across the Middle and Late Pleistocene
  - d. abrupt climatic changes were responsible for the onset of Middle Stone Age innovations

### True/False

- Middle Stone Age toolkits are exclusive to *Homo sapiens*, as Acheulean tools are to *Homo erectus* and *heidelbergensis*.

### Short answer (1-2 sentences)

- What archaeological lines of evidence are suggested to enable track the Out-of-Africa dispersal of modern humans?

### Short answer (1-2 paragraphs)

- Discuss briefly what the temporal and geographic ranges of the Nubian technocomplex are considered uniquely relevant for. What are the limitations concerning these presumed implications?

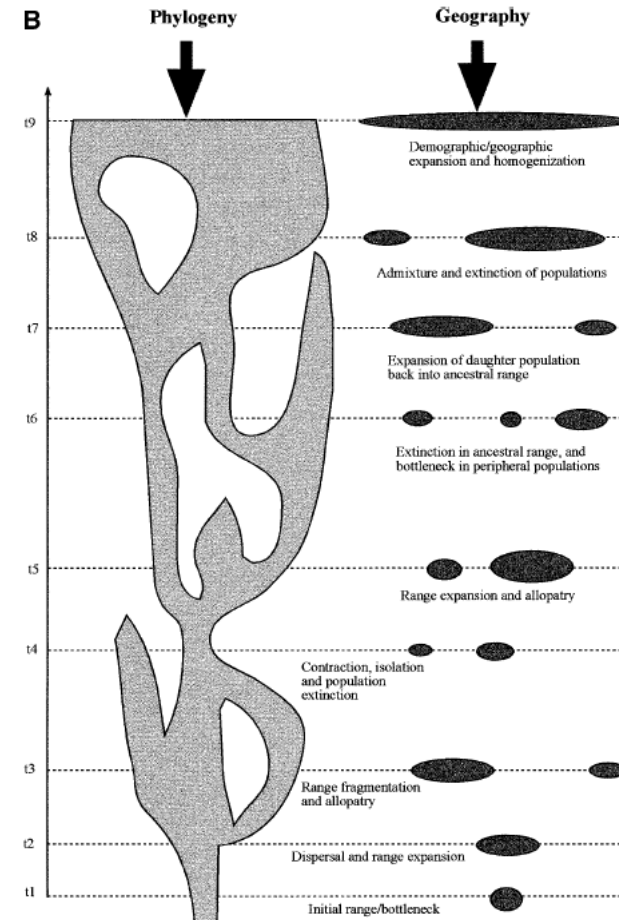
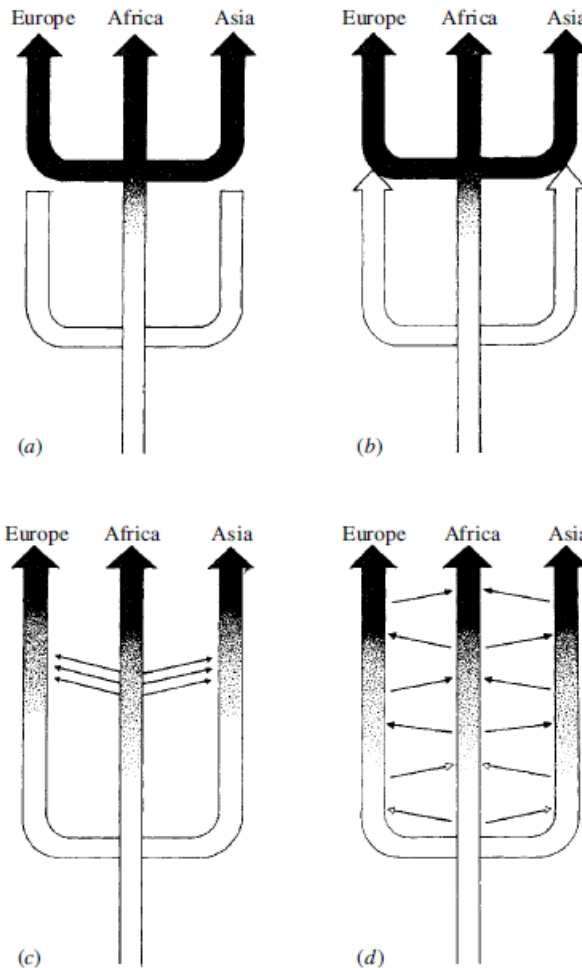


# The Palaeoanthropological Perspective

- The Middle-Late Pleistocene fossil record of Africa and Eurasia
- Genomics of modern human origins and dispersals
- Bio-cultural co-evolution and adaptations

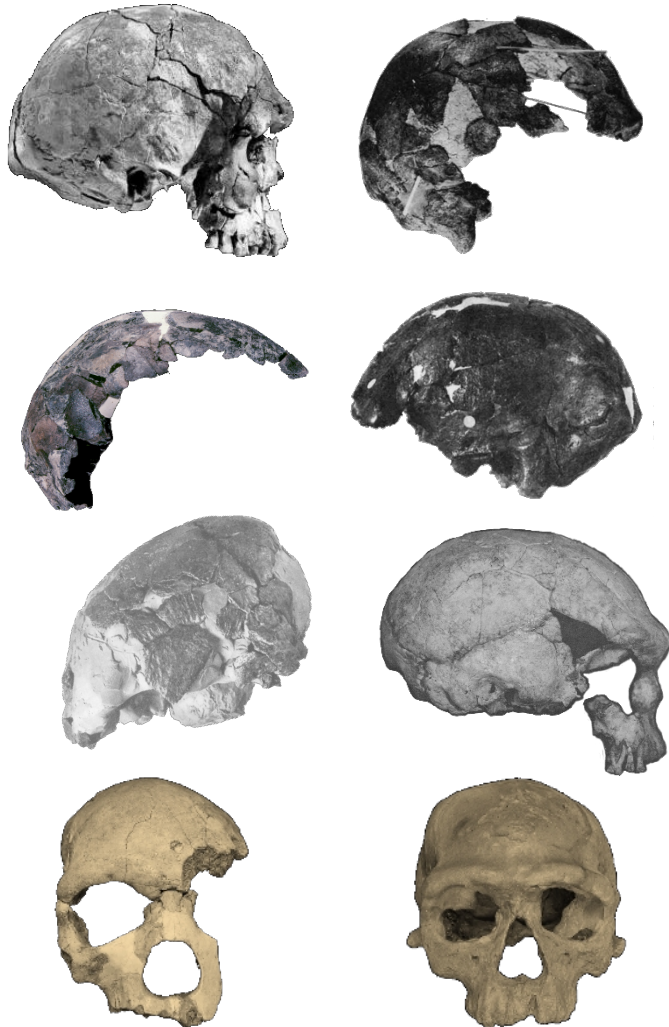


# Modern human origins models

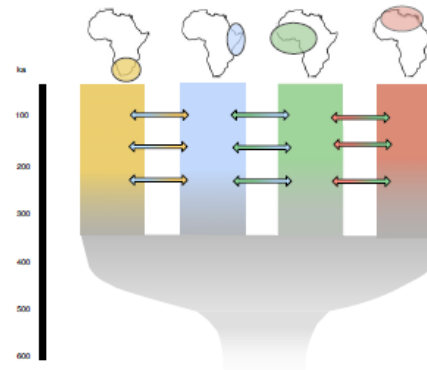


Stringer 2001; Mirazón Lahr & Foley 1998

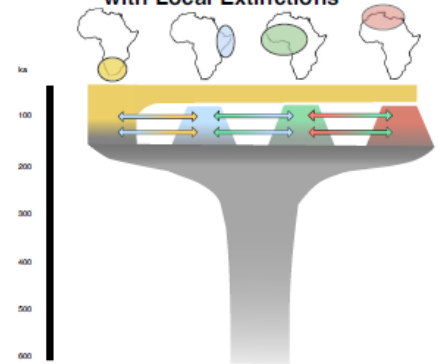
# Modern human origins in Africa



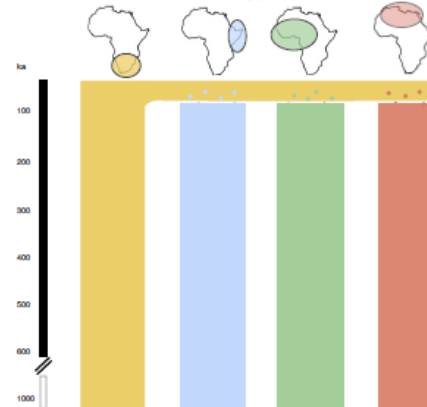
(a) Model 1: African Multiregionalism



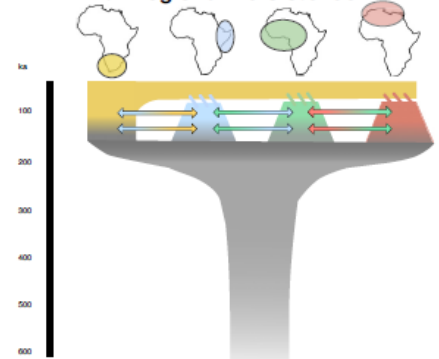
(b) Model 2: Single Origin Range Expansion with Local Extinctions



(d) Model 4: Archaic Hominin Admixture in Africa



(c) Model 3: Single Origin Range Expansion with Regional Persistence

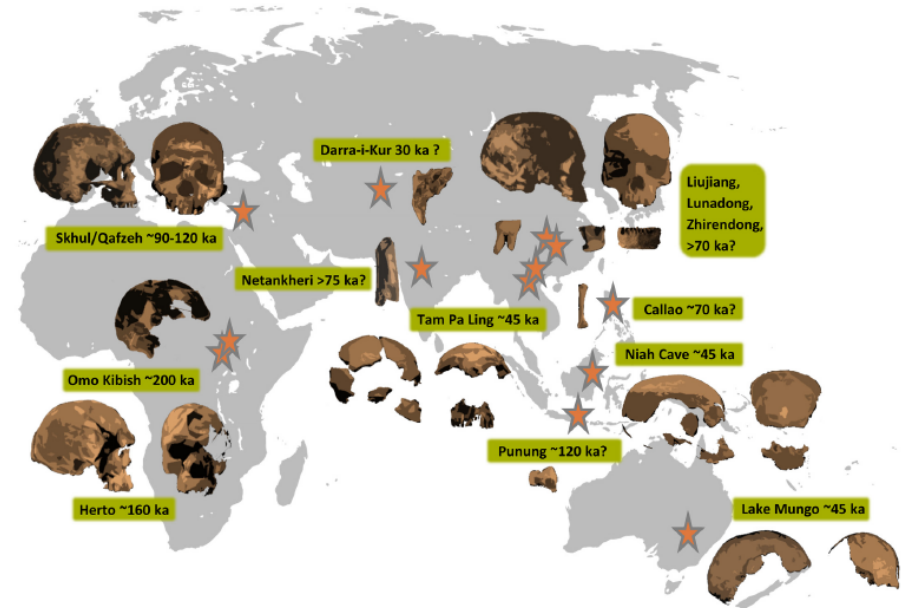
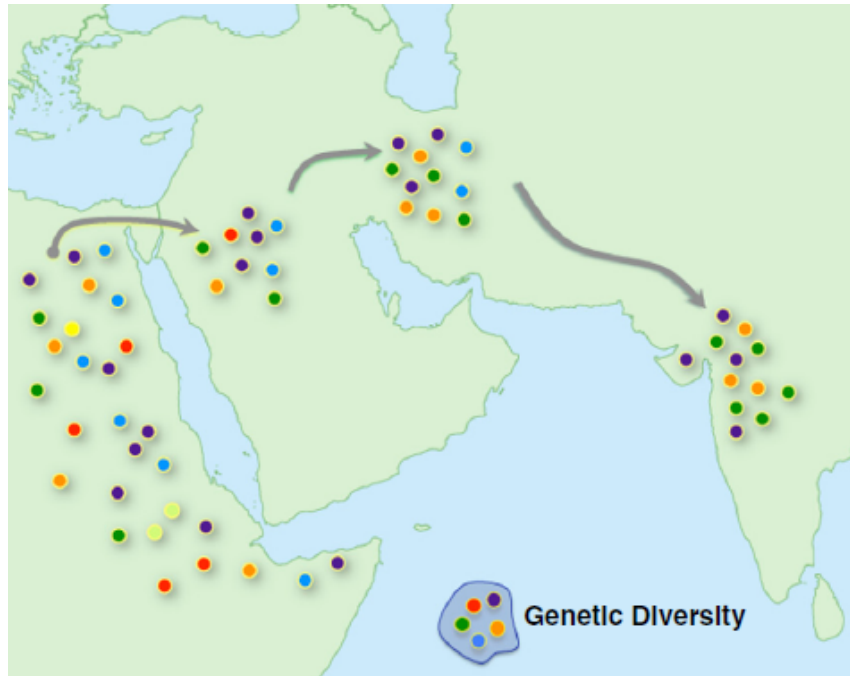


Current Opinion in Genetics & Development

Henn et al. 2018



# Modern human dispersal out of Africa



Henn et al. 2012; Reyes-Centeno 2016

# Modern human origins: mode and timing

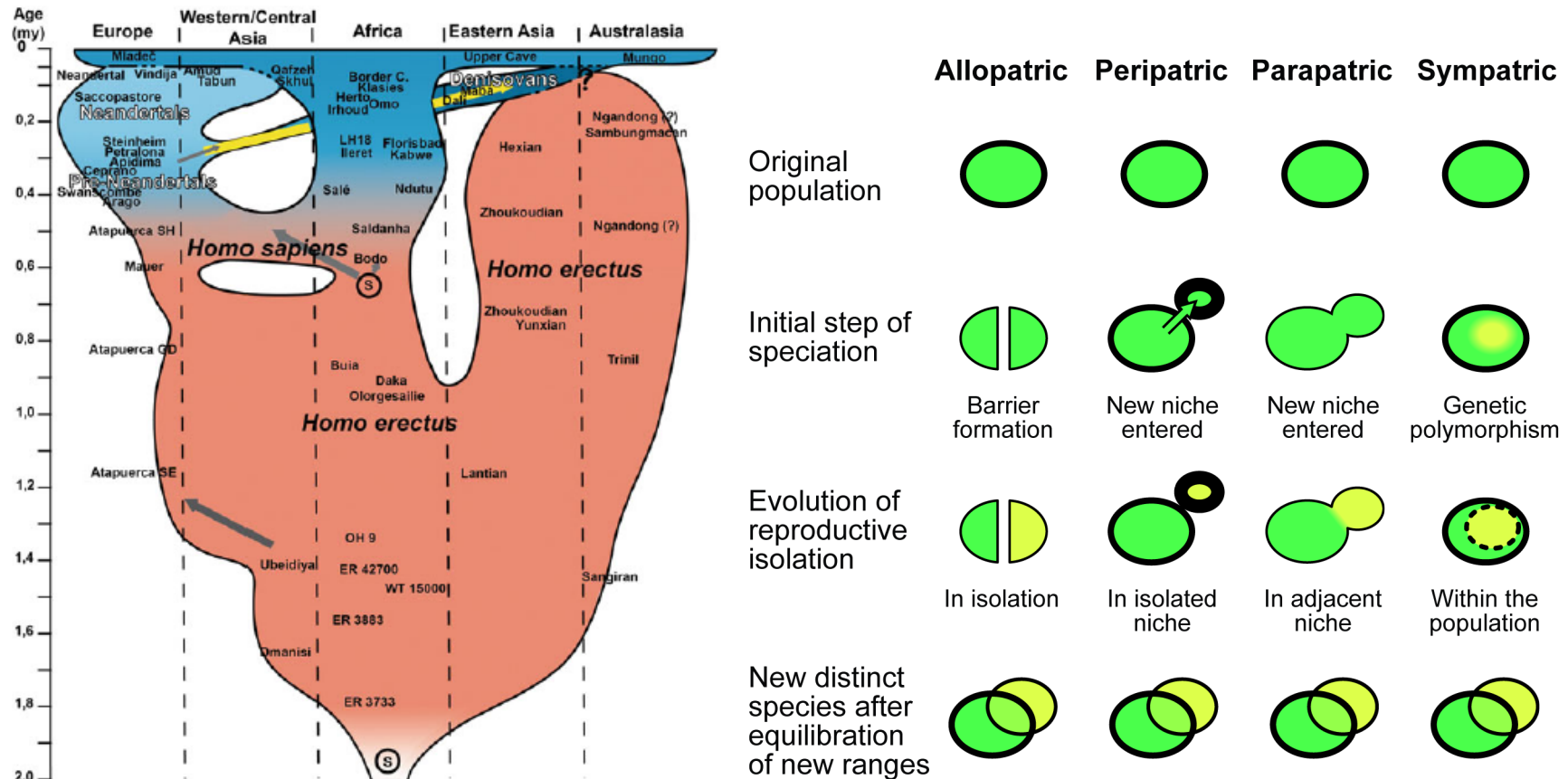


Fig. 7 Origin and evolution of *Homo sapiens*

Bräuer 2015; I. Karonen 2006

# Modern human anatomy



Klein 2009





## Example questions

- **True/False**

\_\_\_\_\_The Herto specimen (BOU-VP-16/1) is the holotype for *Homo sapiens idaltu*

- **Multiple Choice**

Carl Linnaeus' description for *Homo sapiens* was:

- A: *Homo antrum* “cave man”
- B: *Simiae hominin* “ape man”
- C: *Nosce te ipsum* “Know thyself”
- D: *Potens femina* “powerful women”

- **Short Answer**

- Describe at least two competing models for the origin of modern humans. Which do you think is best supported and why?

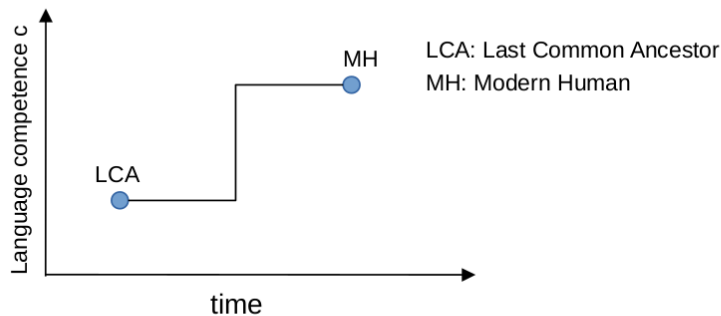


# The Linguistic Perspective

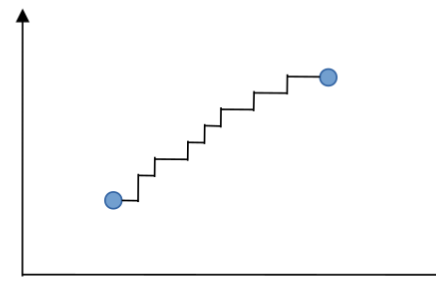
- Adaptive and non-adaptive theories
- Preadaptations to language
- Interfaces with archaeology and palaeoanthropology

## Lecture 8: Adaptive and non-adaptive theories of language evolution

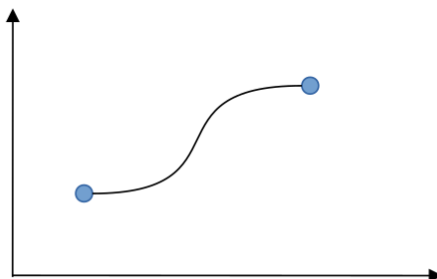
### Sudden big jump (saltation)



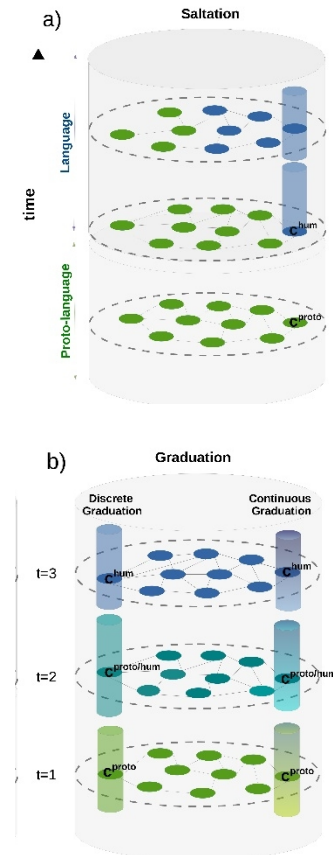
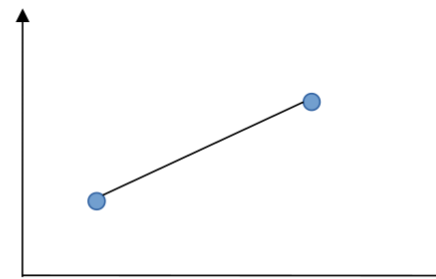
### Small jumps (gradual, stepwise)



### Continuous change with sudden spurts (variable rate)



### Continuous change (constant rate)



Bentz, Christian. 2018. *Adaptive languages: An information-theoretic account of linguistic diversity*. Berlin: De Gruyter Mouton. p. 9-24.

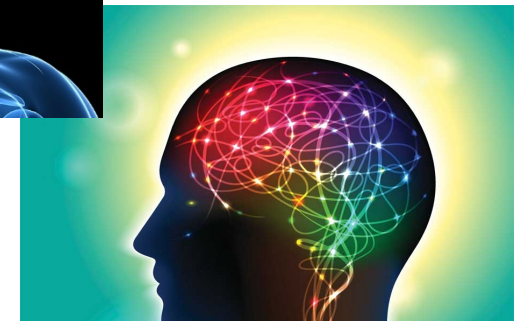
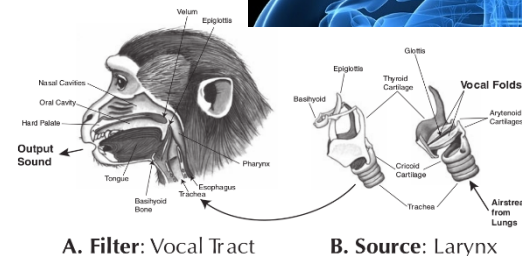
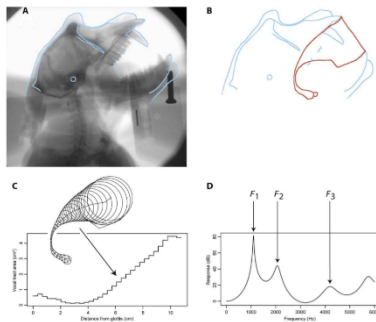
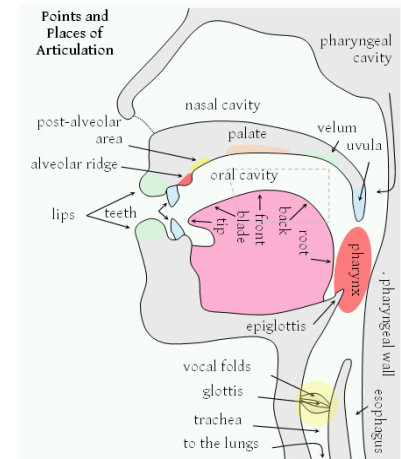


## Lecture 9: Preadaptations to language

### Speech Production and Perception

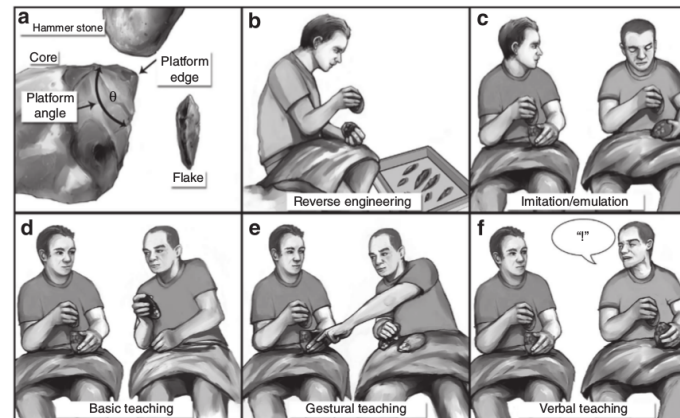
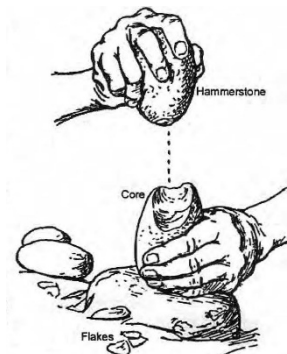
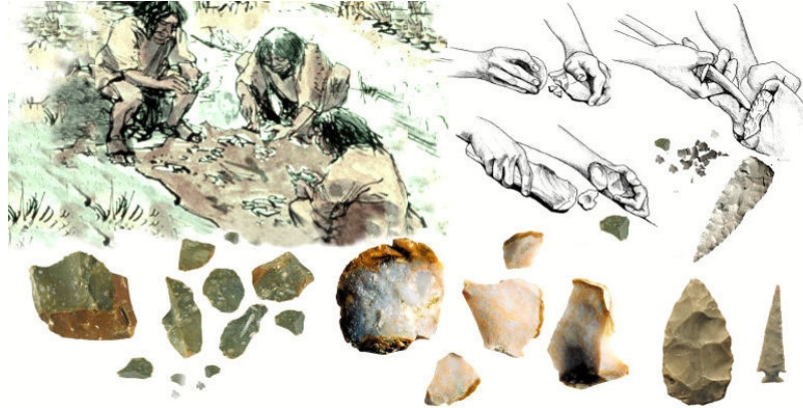
Differences in vocal tract anatomy and perceptual abilities of animals – **the hardware** – prevent them from using speech (?)

Differences in the **software** - i.e. neural circuitry (?)



Fitch, Tecumseh W. 2017. Empirical approaches to the study of language evolution. *Psychonomic Bulletin & Review*, 24: 3-33.

## Lecture 10: Interfaces with Archaeology and Palaeoanthropology



Albessard-Ball, Lou, and Antoine Balzeau. 2018. Of tongues and men: A review of morphological evidence for the evolution of language. *Journal of Language Evolution* 3 (1): 79-89.



## Example Questions

### ● True/False

\_\_\_ The modern human version of the FOXP2 gene is shared with Neanderthals.

### ● Multiple Choice

According to the early writings of Chomsky (1960s to 1980s) a sound file with spoken language interactions reflects:

- a. FLN
- b. E-language
- c. I-language
- d. FLB

### ● Short Answer

What is the cost and gain of sending signals?