

# Intro to Ecological Psychology & The Evolutionary Theory

1

## I. Ecological Psychology Overview

1. Psychology in context
  - Rejects atomistic, reductive view
  - Beyond goal of “adjustment”
2. Response to ecological crisis
  - How psychology causes problems
  - How we might rethink psychology
  - Applied (like clinical psychology)

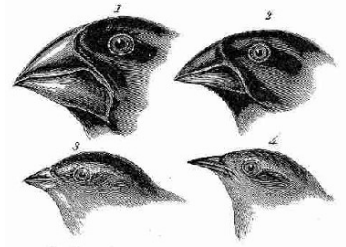
2

3. Embraces ecological thinking
  1. Evolutionary perspective
  2. Historical perspective
  3. Moral sources
4. Identify limitations preventing syst. thinking
  1. Cognitive, perceptual, ideological
5. See Mental as in/of nature (a bit deep...)
  1. Mind as reflection of nature
    1. E.g., Human learning parallels natural selection
  2. Mind as both cause and effect in world
    1. Eg. Mind → Technology, Technology → Mind
    2. Eg. Language → Mind, Mind → Language

3

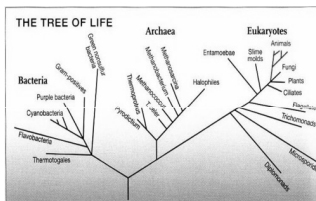
## II. Evolutionary Theory

- Basics:
  1. Common ancestry
  2. Gradual growth in diversity and complexity
  3. Unity of life



4

**Side-note : Why is evolution threatening to some of us?**



5

## A. What's the value of evolutionary theory in general?

1. Broader framework for locating mind & behavior
  - “Best Idea Ever”
2. Stand outside oneself, see whole of life
  - See mind as historical event (& morality)
  - Humans as aberration, sustainable?
  - Greater moral accountability to other life
3. Mind as pre-wired (no blank slate)
4. Mind as fallible tool – biased, selective
  - (Other “minds” possible)
5. Mind as tool shaped by reproductive success

6

## B. What's the value of evolutionary theory for sustainability?

1. Understand deeper drivers of consumption
  - Dominance/resource seeking
  - Positional insecurities
2. Fear of difference, in-group bias
3. Humility & reflection regarding "common sense"
4. Better strategies for intervention
- Examples
  1. Status driven consumption
  2. Mortality salience

7

## C. Bridgeman: Evolutionary Psychology

1. Three parts of the engine
  1. Variation (e.g., genetic differences)
  2. Selection (different reproductive success)
  3. Inheritance (retention of selected traits)
  - Examples:
    - Giraffes
    - Polar bears
    - Dogs
2. Myths: Survival of the Fittest, Competition

8

3. Culture and Biology interact
  1. Size of teeth and fire
  2. Maternal love and brain size
4. Beyond the SSSM (Standard Social Science Model)
  1. No tabula rasa
  2. Behavior pre-wired, not purely malleable
    - E.g., Why are men aggressive? Unwilling to share feelings? Women better verbally? More "emotional"?
  3. Beyond pure rationality (economics)
  4. Mind as trellis for culture

9

5. Complex genetic – environment interaction
  1. Lizard – environment determines physical traits (not genes)
  2. Retriever – behavior determined by genes (not environment)
6. Misuses of evolutionary psych
  1. Scientific finding does not dictate morality
  2. Knowledge of pre-wiring makes us more response-able (not less)

10

## D. Arguments for Evolution

### ■ 1. Evolution Fits the Data

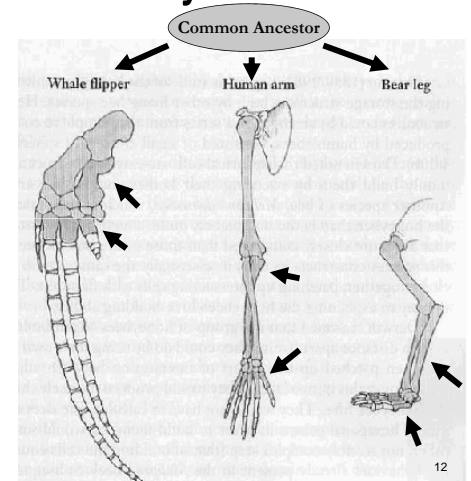
1. Both theory & fact
2. Like evidence for
  - Elliptical path of planets
  - Spherical Earth
  - Solar system
3. Evidence vast & overwhelming



11

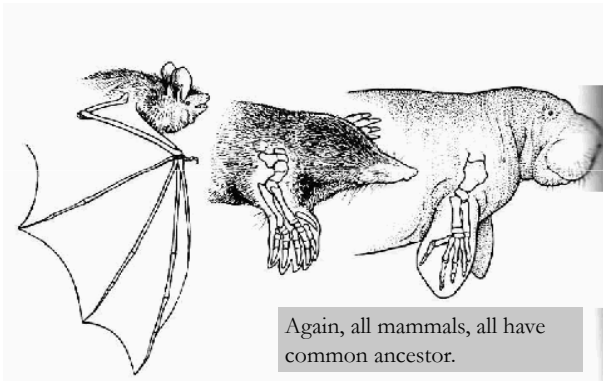
## 2. Common ancestry in our bones

- What's the pattern that connects?
- Homologous Forms
- Same parts evolved to different uses
- Like same set of serial numbers in descendents



12

### Same “serial number” in wide variety of mammals



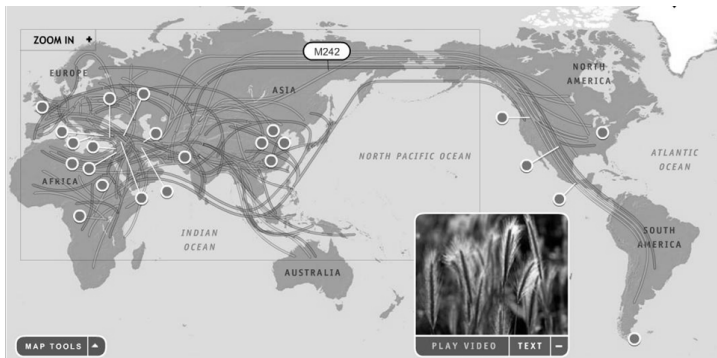
Again, all mammals, all have common ancestor.

13

### 3. Genetic mutations show origins & migration



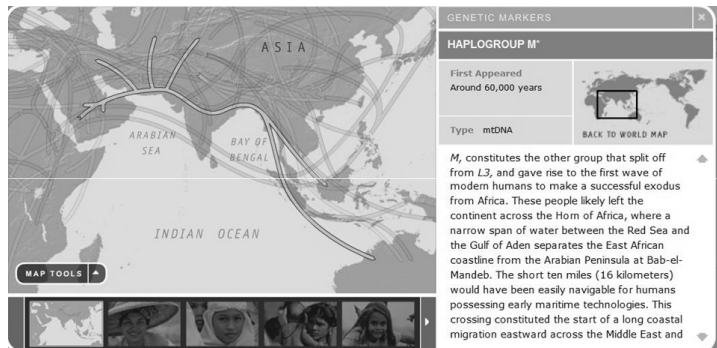
14



15

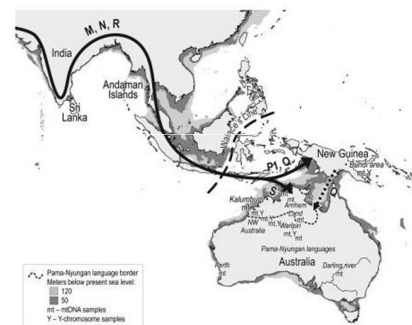


16



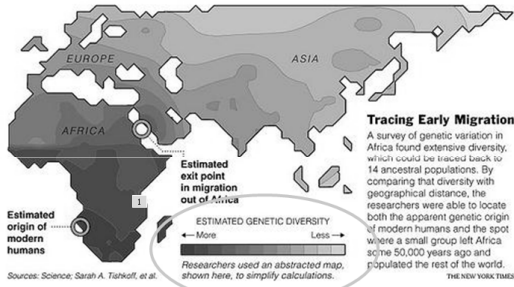
17

### Coastlines of Australia and NG = 50,000 Years Ago from Revealing the Prehistoric Settlement of Australia by Y Chromosome and mtDNA Analysis by Georgi Hudjashov



18

The new data goes far toward equalizing the genetic picture of the world, given that most genetic information has come from European and Asian populations. But because it comes from Africa, the continent on which the human lineage evolved, it also sheds light on the origins of human life.



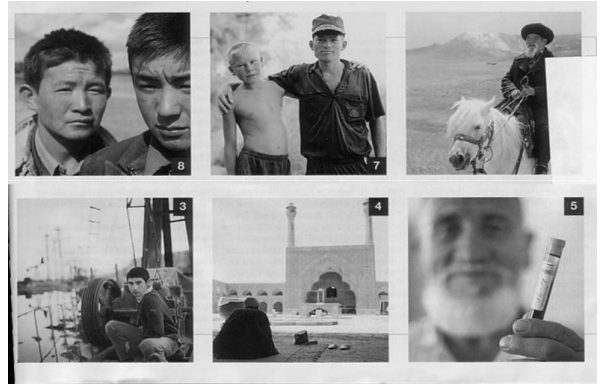
**Tracing Early Migration**

A survey of genetic variation in Africa found extensive diversity, which could be traced back to 14 ancestral populations. By comparing that diversity with geographical distance, the researchers were able to locate both the apparent genetic origin of modern humans and the spot where a small group left Africa some 50,000 years ago and repopulated the rest of the world.

Sources: Science; Sarah A. Tishkoff, et al.

By locating the region with the highest level of genetic diversity, Tishkoff and colleagues have created a map reflecting a kind of "impact crater" of human variation. The African continent already has the most diverse human genomes of any region on the planet, with reduced diversity across the Eurasian continent and the least diversity among indigenous Americans. By tracking the genetic variations within African groups they further suggest that a single population emigrated from Africa about 250 generations ago whose descendants travelled the globe displacing other groups of early humans.

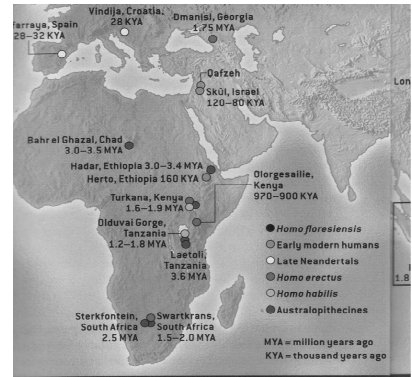
**4. Genetic differences fit conquest history in Asia**



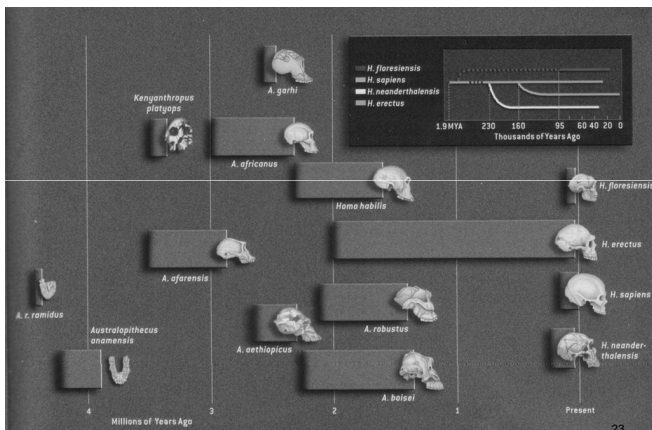
**Who followed this route, killed the competition, and had some "relationships"?**



**5. Fossil Record Shows Hominoid Evolution**

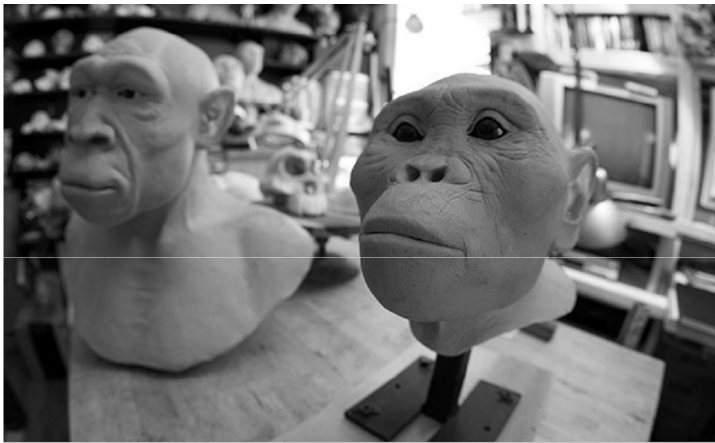


**Fossil time-line**



**6. Intermediary Forms: Primate/Human**

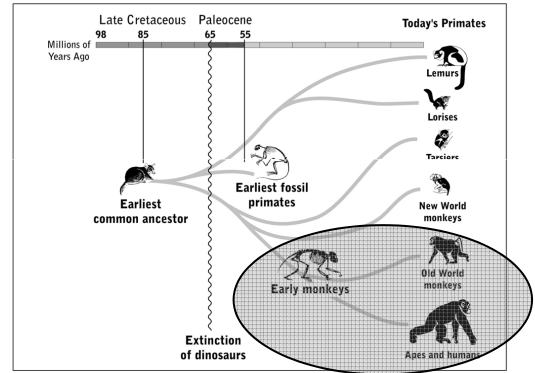




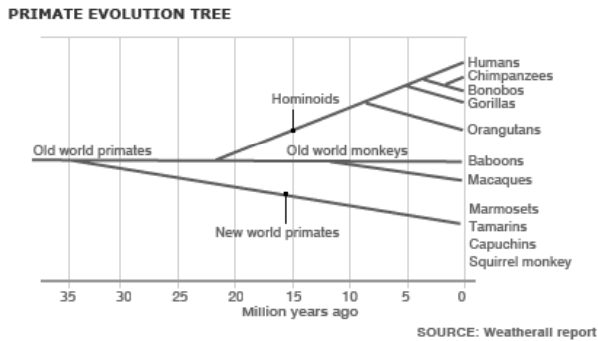
Erik Olsen/The New York Times

LANDS ON Mr. Deak reconstructed Australopithecus afarensis, known as Lucy, who lived more than three million years ago. Iomo ergaster is at left.

## Primate Speciation



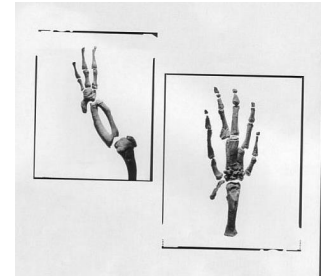
## ...our closest relatives



## 7. Intermediary Forms: Non-human



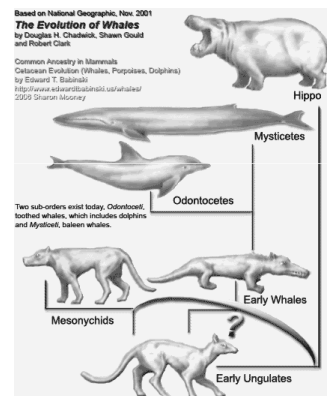
- Into what lineage does this fossil fit?
- Between what and what?



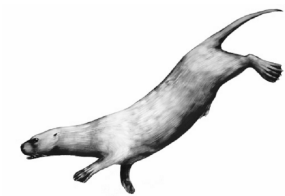
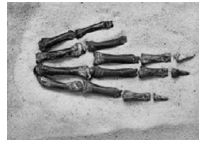
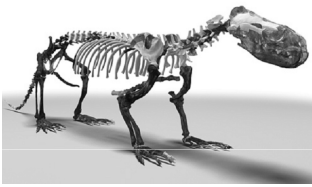
## Maiacetus inuus – a proto-whale



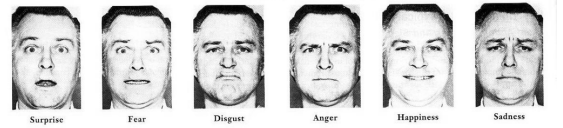
## Whales and their relatives



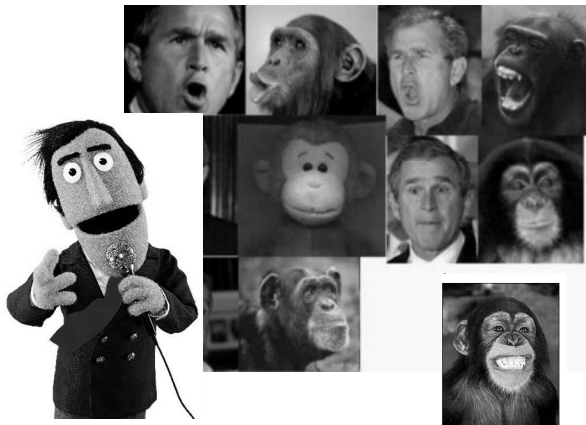
**Another intermediary form; Puijila – walking “seal”**



**8. Common emotions across races**

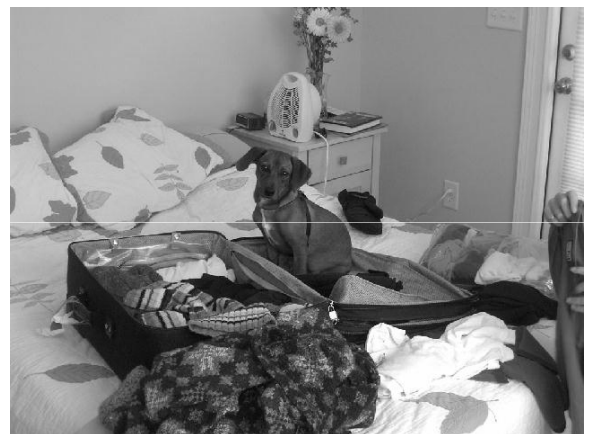


**9. Common emotions across primates**



**10. Dogs Love Evolution!**

- a. Applied Evolution
- b. Co-evolution





37



38



39



40



41



42



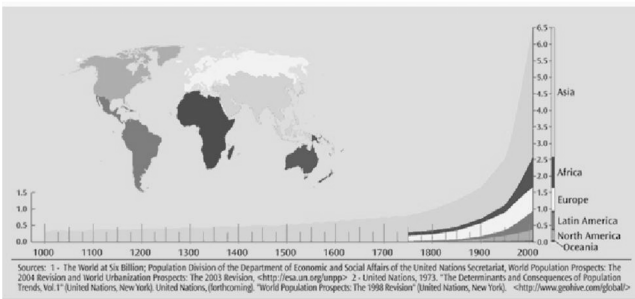
43

## Closing questions: Moral implications?

- Created separately or Common origin?
- Cousins or mere Creatures?
- What's the value of non-human life?
- Does knowledge affect morality?
- Does knowledge affect mortality?

44

## Will there be room for anything else?



45