

## Review : Is race “real”?

- Phenomenology
- Pre-DNA views
- Post-DNA views

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## Pre-DNA views

- Gold, Silver, Brass, Iron -- Plato
- “There is a physical difference between the white and black races which I believe will for ever forbid the two races living together on terms of social and political equality.” -- Abraham Lincoln

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## Genetics

- Human genome contains about 4 billion pairs of deoxyribonucleic acid (DNA)
- DNA is Transcribed into RNA
- RNA is Translated into Proteins
- Proteins
  - serve as structural components
  - function as enzymes to catalyze biochemical reactions
- Human DNA is grouped into 46 chromosomes
  - 23 pairs, one of each pair comes from each parent
  - 22 pairs in both males and females (autosomes)
  - 1 pair determines sex: either “XX” (females) or “XY” (males)

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## Post-DNA views

- Variance
  - variation between individuals
    - aka variation *within groups*
  - variation *between groups*
- Variance
  - variation between individuals : 3mbp / person
  - variation within groups : 85%
  - variation between groups: 15%
    - about 5% - within “races”
    - about 10% - between races

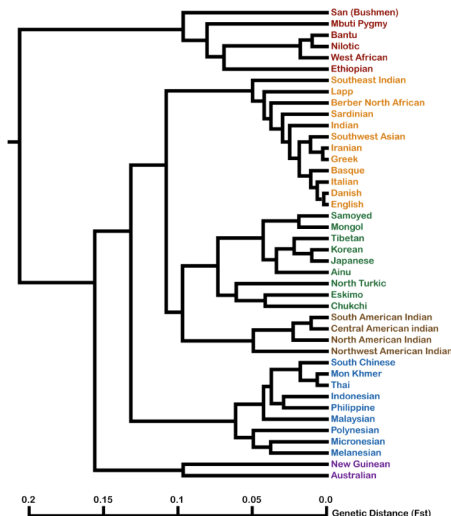
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## Genetic Differenc

- Sub-Saharan African
- Indo-European
- East Asian
- Native American
- South Asian
- Aboriginal

Fst = % of subpopulation variance

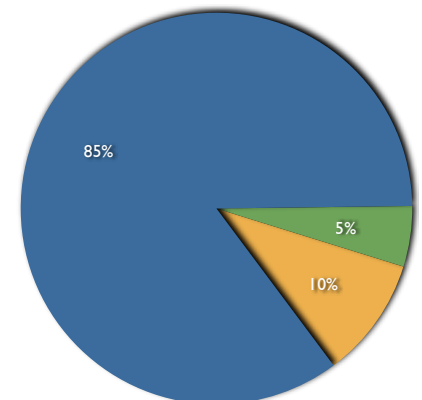


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## Variance: Genetic Variation

- Within local populations
- Within “race”
- Between “race”



For example:

- 85% within Japanese
- 5% between Japanese & Korean
- 10% between Asian and Caucasian

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