

Review Notes - Big Quiz - p. 4

Darwin didn't know:

- How traits got inherited (Genetics)
- how genes worked (DNA)

Darwin's Theory:

1. Variation exists within species
2. more indivs. are born than can survive
3. struggle for existence
4. b/c of #1, some indivs. are better suited to survive + reproduce.
(survival of the fittest)
5. over time, populations of org. change - traits of fitness become more common
6. New species descend, with modification, from existing species
7. All organisms have descended from a single common ancestor

ARTIFICIAL SELECTION

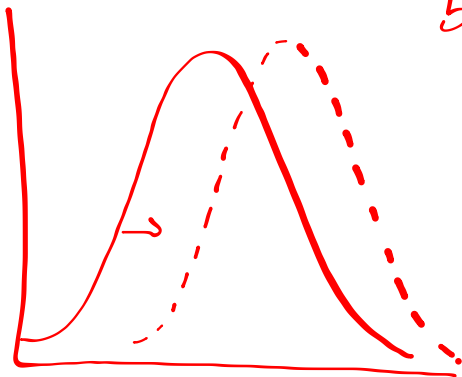
- HUMANS select DESIRABLE
TRAITS from VARIATION in
NATURE to CHANGE SPECIES

DARWIN: NATURE does this -

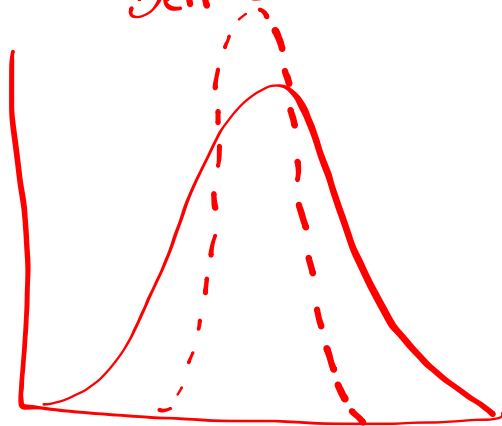
NAT. SELECTION ON POLYGENIC TRAITs

1. DIRECTIONAL SELECTION

- INDIVS. @ ONE END OF BELL CURVE
become MORE fit



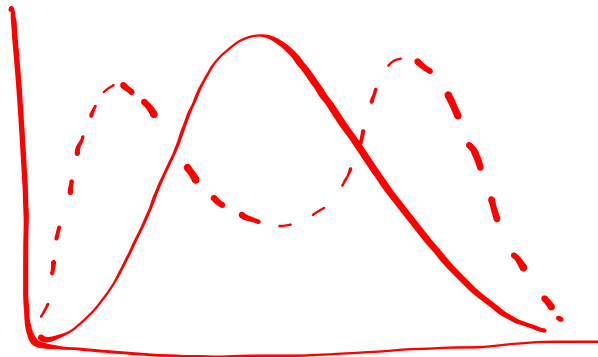
2. STABILIZING SELECTION
- indivs. in middle of
bell curve become more fit



3. Disruptive selection

- indivs. @ either end

Bell curve BECOME more
fit



Sources of mutations:

1. Radiation or chemicals
2. random errors in DNA replication

NAT. SEL. Acts on phenotypes, not
genotypes

Reproductive isolation - no longer
interbreeding
- prerequisite for speciation

1. BEHAVIORAL
2. GEOGRAPHIC
3. TEMPORAL