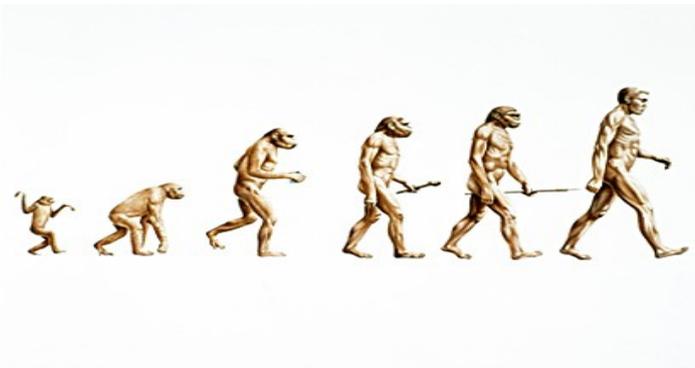


Evolution and Heredity

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What is Evolution?

Genetic variation happens even during asexual reproduction. But variation is more prevalent in sexual reproduction. The variations are quite visible in animals which are reproducing sexually, including humans. The variations can be created due to environmental factors or they can be inherited from previous generations. Studying about variations in detail leads to the study of evolution.



In biology, evolution is defined as the change in the genetic

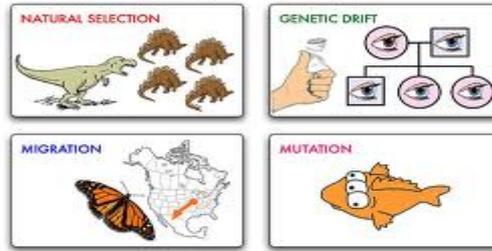
composition of a population during successive generations, as a result of natural selection acting on the genetic variation among individuals, and resulting in the development of new species. Other names of evolution are biological evolution or organic evolution.

One or more [inherited traits](#) found in [populations](#) of [organisms](#) get changed time to time. The distinguished characteristics like anatomical, biochemical or behavioural characteristics are inherited by the offsprings. [Gene–environment interactions](#) influence the phenotypic expressions of the generations. If [variation](#) of inherited character occurs in a population, certainly the evolution will occur. [Mutation](#), [genetic recombination](#) and [gene flow](#) are the main factors which influence evolution. Diversity of living organisms happens because of evolution. It was described by [Charles Darwin](#) as "endless forms most beautiful and most wonderful."

Influence of Reproduction on Variations

The parental generation provides a basic body design with some changes to its offspring. If this first generation gets reproduced, the second generation would have the first generation differences as well as new created differences because of various factors. Think about the ways you might look like your parents, but also features that are unique to you and not shared with either of them. If the organisms undergo sexual reproduction, more differences would be possible and the greater diversity will be generated. All these variations in a species do not have equal chances of surviving in the environment in which they find themselves. It depends on the nature of variation they adopted.

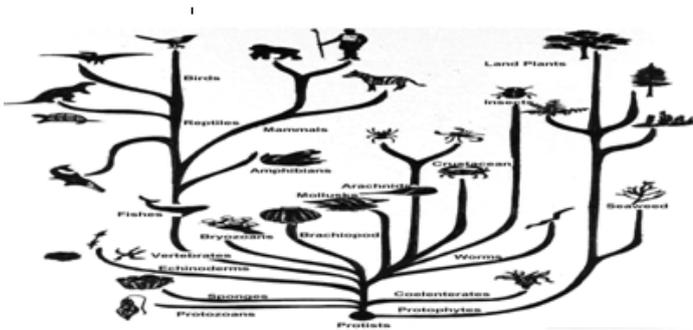
Forces that **cause** populations and species to evolve



Common Cause of Evol

ution

1. **Natural selection** - Differential survival and/or reproduction of organisms that differ in one or more inherited traits
2. **Genetic drift** - Random changes to the proportions of two or more inherited traits within a population
3. **Speciation** - Single ancestral species splits into two or more different species
4. **Migration** - moving from one location to another
5. **Mutation** – sudden genetic changes



Heredity & Inherited Traits

Human populations show a great deal of variation. Even though a child has basic features of its parents, it does not look like its parents. Errors in DNA copying, chromosomal aberrations and other mutation result in variations. If this generation is reproduced it will result in totally varied generations and evolution of the new characters starts with parental generation variations and newly acquired variations.

Evidence from Living Organisms

By examining [fossils](#) and by determining their relative and absolute ages, scientists have collected evidence that supports the theory that species changed over time.

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Reference Links:

- <http://en.wikipedia.org/wiki/Evolution>
- http://en.wikipedia.org/wiki/Evolutionary_biology
- <http://www.veoh.com/watch/v17179975Q2Xbf6zS>
- <http://bioweb.cs.earlham.edu/9-12/evolution/index.html>

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