

Sex and Genetic Shuffling

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Gene Shuffling



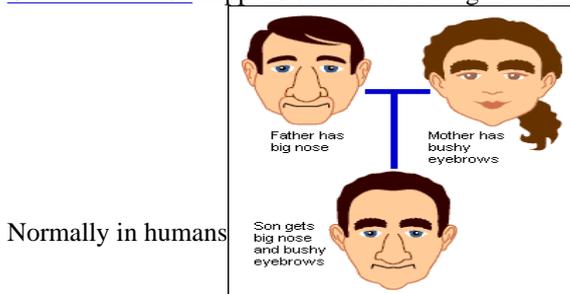
Sex can introduce new gene combinations into a population and is an important source of genetic variation.

A sexual cycle is maintained because it improves the quality of progeny.

Advantage of Gene Shuffling

- Sexual reproduction can bring together [mutations](#)
- Can be beneficial into the same individual
- Unfit individuals that are then eliminated from the population
- Sex creates new gene combinations that may be more fit than previously existing ones

[Genetic variation](#) happens because of new gene combinations occurred due to sex. It is an important source of population.



except identical twins siblings show variations among each other.

Children are not genetically identical to their parents. They show variations and show the combination of characters of their parents. Why? Because after the sexual reproduction of the parents, the genes underwent shuffling and new combinations would arise in the next generation.

The children must have both characters from parents like eye color, eyebrow shape, hair color, nose shape, body color, voice, height, etc... After this shuffling the result may be great, normal, or worst.

This [shuffling](#) is important for evolution because it introduces new gene combinations in each generation. But it may reduce the good combinations and increase the normal or bad combinations. It is totally based on the chance of gene combinations.

Development

After the fertilization, once the embryo developed in to adult organisms its [genotype](#) is expressed as a [phenotype](#). These external appearances of the organism help us to understand the new combinations easily. It is the basis of evolutionary biology.

Shuffling Genes Without Sex

[Asexually](#) reproducing organisms maintain variation in their DNA. Female whiptail lizards can actually double their own chromosomes during meiosis, according to a study published in Nature.



Parthenogenesis, a form of asexual reproduction that occurs without the contribution of male genetic material, has been well described in many invertebrates species and a few vertebrates.

But since gametes in these species only receive one set of chromosomes, researchers have wondered how offspring maintain genetic diversity, especially in more complex vertebrate species.

Change in Morphology

Gene shuffling may result with major effects in the morphology of the organism. Because of gene shuffling fruit flies evolved with two pairs of wings instead of one. Developmental processes may prevent certain characters from evolving in certain lineages.

Want to know more about gene shuffling? [Click here](#) to schedule live online session with e Tutor!

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Reference Links:

- <http://www.gompalhasaapso.com/Resources/Articles/Genetics%20and%20Evolution%20101.htm>
- <http://evolution.berkeley.edu/evo101/III5Shuffling.shtml>
- <http://www.the-scientist.com/blog/display/57153/>
- http://en.wikipedia.org/wiki/Evolution_of_sexual_reproduction#Speed_of_evolution

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