# **Patterns of Evolution**

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# **Evolution:**



Evolution takes many paths. Species may evolve separately or they may have similar structure in appearance or evolve together. <u>Species</u> evolve over time, and this was discovered by evolutionary biologists. Their relationships evolve in different forms like divergent, convolution and convergent evolutions.

# **Divergent Evolution:**

<u>Divergent evolution</u> occurs when some species take pathways in different forms due to selective pressures and adaptive traits. They have a different function in addition to the original function they possess. This occurs when some members of a species take a different evolutionary pathway than others of that species.

### Why divergences occur?

Due to the change in surrounding and the environment this divergence may occur. For example, the limb of vertebra is the best example of divergent evolution. Different species have different limbs but have organs in common. As result of environmental adaptation, the limb diverged in its functions and structure.

## **Convergent Evolution:**



Convergent evolution evolves from two distinct species which have some biological traits

with similar structures due to <u>selective pressures</u>. For example wings of insects, birds, bats have similar structure and function. They have evolved independently from different species and not from the common ancestors

## **Coevolution:**

<u>Coevolution</u> is when two or more species reciprocally affect each other then co evolution occurs. For example, <u>angraecoid orchids'</u> <u>pollination</u> by African moths is a good example for this type of evolution. These moths were dependent on the nectar of the flowers and in turn they use to reproduce with the help of these moths. As the evolution continued this led to the change in the structures of the moth such as a long proboscis as the flowers were deep.

The various patterns of evolution are very vital to the evolutionary process as the show the tree of life very clearly.

## What is the difference between patterns of evolution and speciation:

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#### **Reference Links:**

- http://en.wikipedia.org/wiki/Evolution
- http://en.wikipedia.org/wiki/Adaptation
- http://en.wikipedia.org/wiki/Genetic\_drift
- http://en.wikipedia.org/wiki/Evidence\_of\_common\_descent
- http://en.wikipedia.org/wiki/Modern\_evolutionary\_synthesis
- <u>http://www.youtube.com/watch?v=m7K2ZTGy7oE&feature=related</u>

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