

## ***How do we distinguish between biological and cultural evolution?***

Biological and cultural evolution have certain similarities but also many dissimilarities. Both are based on variation, heredity and selection, but how these appear and work differs. Biological evolution is unconscious, opportunistic and not goal-directed, while cultural evolution is conscious, at best planned, and can have a goal. In the biological world, the sources of variation are mutations and genetic recombination. Heredity is connected with reproduction and is mediated to subsequent generations via genetic material. Selection operates in two ways, natural selection and sexual selection. Biological evolution is a population-level process guided by the selection, leading to an increase in the population's adaptation to the environmental circumstances in which the population lives. Culture can be defined as the wholeness of a society's mental and material achievements or mankind's whole. The theory of cultural evolution provides an explanation for how cultures and societies change over time.

In the regime of human culture, the sources of variation are certain acts based on human creativity, such as innovations. In cultural evolution, imitation and more advanced forms of learning constitute the equivalent of heredity of biological evolution. An important difference between biological and cultural evolution is that the inheritance of acquired characteristics is denied in the former. At the same time, in the latter, it is an integral part of the theory. Moreover, in biological evolution, the transfer of genetic information is unidirectional and vertical, occurring from the parental generation to the offspring only, and occurs only once in each case. In cultural evolution on its part, the transfer of information is mainly based on immaterial spoken or written concepts, is bidirectional, and can also be horizontal or oblique, i.e. network-like. Cultural information can also be stored, and the transfer of it can be repeated at will. These differences between biological and cultural evolution make the latter far more rapid than the former.

In cultural evolution, a third form of selection is effective. This form of selection, termed social selection, involves competition for other social resources than the

members of the opposite sex. In social selection, an important role is played by the feedback given by the social group members in which the individual in question lives. Therefore, in practice, in the social selection, the act of selection is performed by individuals other than the one whose fitness will be affected by the selection. Cultural fitness deals with cultural characteristics such as thoughts and ideas and is defined as a function of time. The longer a cultural characteristic is preserved in the population, the better its cultural fitness.

The importance of language as a necessary condition for cultural evolution should be stressed, language being the cultural replicator corresponding to the gene in biological evolution. Human creativity and mind reading, the specific human capacity of being aware of what other people have in mind, are motors specific for cultural evolution. (Portin, 2015)