

Process of natural and sexual selection



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Explain, with examples, how the process of natural selection and sexual selection are thought to have contributed to modern-day behaviour.”

Evolution: The gradual process by which species develop from earlier forms” (Clegg, 2007, p 107). For thousands of years lay people have argued about how the world has evolved. For example, did it evolve from god or some other supernatural source? Evolution is a miraculous process and refers to the fabrication and development of life on earth and establishes the formation of modern man. The two major processes of evolution will be explained in this essay: natural selection and sexual selection. Furthermore, examining how and why these processes have contributed to modern-day human behaviour.

In 1858, British naturalist Charles R. Darwin finished his theory of evolution, also known as Darwin’s theory. Darwin’s’ theory states that all species evolved from either many or few common ancestors or descendants under circumstances of natural selection. A species is a population of organisms that reproduce and have offspring that have modifications from the species that lived before them.

Natural selection is a process that is based on three assumptions. Firstly, organisms, “ physical and behavioural characteristics which enable survival (and the genes which code for these) are passed onto descendants” (Clegg, 2007, p 121). Secondly, the modification is then acquired through the genes. Furthermore, thirdly the limitation of food for each species, competition is formed in which all living beings must compete for the supply of food, water, space, and other resources. Individual plants and animals whose adaptations are suited best for a certain environment tend to have an

advantage in the competition for survival. Species with this advantage tend to leave a larger number of offspring than the less fortunate species. As a result, the species that is best adapted to its environment increases from generation to generation. Organisms struggle for the necessities of life if there is competition for resources. The species that is best adapted to survive will succeed and others become extinct.

The term “ fitness” (Clegg, 2007, p 121) refers to certain characteristics being successful within their environment and being passed down to each generation, but the conditions for the reproduction must be correct. It is measured by reproductive success.

Adaption is the result of the process of natural selection. Adaptions are the behaviours that have been acquired through evolutionary processes to ensure their survival in this generation and to every generation after them. Inherited characteristics of an organism also occur through adaption.

Individual human behaviour is genetically predisposed or influenced by environmental factors such as personal experiences and culture. Adaption has contributed to many modern day behaviours. For example, in western society humans, “ have pleasure in eating sweet and fatty foods” (Clegg, 2007, p 123). These types of food are often high in calories and often undigested sugar turns to fat when not exercising. In the generations before the behaviour of modern society, these types of food would enable the fittest to survive.

Hereditary traits cause some people to behave and respond differently from one another. For example, and individual who has high temperament. This

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trait of being high tempered is very difficult to remove from a person's behaviour since this is already incorporated in the genes from conception. A person who has a high and fast learning ability could respond immediately to situations and instructions, hence attainment of the goal is made easy.

Baron-Cohen argued that, " Theory of mind, is of central importance of modern human behaviour" (as cited in Clegg, 2007, p 133). It involves the ability to understand the thoughts and intentions of others. Theory of mind is innate, something that has evolved in humans. In children with autism, they lack theory of mind empirical investigations such as the Maxi test prove this (Clegg, 2007, p 136). Autism is a quite recent discovery. It is argued that genetic mutations are responsible for this (Rudy, 2009) although mutations serve no purpose in evolution. However, if it were to be advantageous to modern day human behaviour and the evolution of mankind more cases will be discovered and autism will evolve.

Sexual Selection is a theory proposed by Charles Darwin. Darwin felt natural selection alone was unable to explain the non-competitive adaptations, for example the tail of a peacock (Wikipedia, 2007).

The mechanism attempts to explain that certain evolutionary traits can be explained by inherited behavioural and psychical characteristics. There are two contests known as intrasexual and intersexual selection. Intrasexual selection involves males passing on competitiveness through their genes, for example large antlers. Whereas, intersexual selection involves either sex choosing a partner that has an inherited characteristic for example intelligence. The beard of the modern day male is a result of sexual

selection. Other differences in the modern day man include different races. Sexual selection would account for these because natural selection could not account for this (Wikipedia, 2007).

Parental investment is a term that was originated by Trivers (Clegg, 2007). It means that the male or female that invests the most in their offspring to ensure their survival. Trivers argued that the sex that invests the most in their offspring will be more selective when choosing their partner. Males tend to be with many females whereas females look for quality when choosing a partner. Buss argues that this theory has contributed to modern day behaviour today. For example, women who prefer rich men and have a good job and career can provide excellent investment for their offspring. On the other hand men prefer beautiful young women who are the best investment for their offspring (Dubuc, 2007).

The brain, is an important factor in sexual selection. The social brain hypothesis argues that in order to solve difficult social problems the brain gets bigger (Clegg, 2007). The modern day human brain is bigger than that of the prehistoric ape, 3 times bigger, suggesting that there are advantages to having a bigger brain (Clegg, 2007). Evolutionary adaptation suggests that humans have evolved the way they have and, humans' brains have evolved to be bigger than their ancestors because of the need to deal with more complex social situations and complex societies.

In conclusion, natural selection tends to focus on the degree of adaptation and mutation for survival. Whereas sexual selection is more concerned with the mate choice and how sexually desired traits have in fact speeded up the

process of how humans have evolved. Both processes have contributed to modern day behaviour and both processes prove Darwin's phrase that "only the fittest survive".

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