
Darwin's Theory Of Human Evolution

The theory of evolution by natural selection was first formulated in Darwin's book 'On the Origin of Species' in 1859. This is the process that changes a species over time due to changes in heritable physical or behavioral traits. These changes allow an organism to better adapt to its environment which helps it survive and have more offspring. (than, 2018)

Evolution by natural selection is one of the best substantiated theories in the history of science, supported by evidence from a wide variety of scientific disciplines, including paleontology, geology, genetics and developmental biology. (than, 2018)

Evidence Supporting Darwin's Theory

The theory has one main point which is: 'All life on Earth is connected and related to each other,' and this diversity of life is a product of 'modifications of populations by natural selection, where some traits were favored in an environment over others.' Which can also be known as "survival of the fittest". Next, we will look at three pieces that support Darwin's theory. (than, 2018)

Common Traits. Common Ancestor.

The patterning of the similarities has a large affect in evolution, these "similarities" are known as "synapomorphies." They are characteristics that are present in ancestral species and are shared exclusively (in a more or less modified form) by the species evolutionary descendants. Synapomorphies come in groups and are related to the variety and intensity of the similarities.

Why is this true? The similarities have been inherited from common ancestors, and the further back in time two species shared a common ancestor, the more faded or distant the similarities become. Similarities have an even larger affect when the related species had close habitats or living areas, for example penguin species only live in the Southern Hemisphere and marsupials live almost only in Australia. If evolution was not true, this geographic patterning would make almost no sense. Furthermore, these similarities often seem to be completely arbitrary, rather than having some selective advantage. (unknown, 2014)

Illustrative example

We See Species Changing Over Time

One of the most important discoveries that lead to Darwin's Theory of Evolution was extinct animals found as fossils. Early paleontologists found a very simple fact: Species that lived in the past were often extremely different from anything alive today. Suggesting that life has changed quite a lot over the course of its existence.

To add to this, the further back you go, the more different the species seemed when compared to today's species. These trends can also be seen on an individual level, as lineages can be

seen changing over time.

This is backed up they share some similarities as well as the continuous trend or progression of change. For example a trait goes from low expression to intermediate to high expression as the species evolves through time.

Lastly, the fossils are dated and organized by direct means (like radiometric dating) or indirect means (like relative dating using unique marker layers, fossils, or other techniques).

Fossils aren't the only way that we can see species changing. We can see it in a laboratory, across geographic distribution as a species spreads, or through artificial selection performed by humans. (unknown, 2014)

The Remnants of Past Generations

Species also have traits that can be related to their place of origin. These traits can come in the form of repurposed traits, but these traits could have a bad impact on a certain animal if it affects the animal's ability to survive or reproduce. (unknown, 2014)

Examples: Societal Impacts of Gene Therapy in Humans

Ethical Issues

The first main topic when looking at ethical issues revolves around the reason for therapy, is the therapy being used to treat diseases or used to "treat" traits and what is considered to even be a trait or a disease. For example, would it be considered ethical to treat someone with dwarfism and on the other hand how ethical would it be to treat someone with gene therapy just to simply change height genes when they have no disorder. This is the first ethical issue and this will come even more important as the line between trait and disease becomes fainter.

Designer Babies

gene therapy could be used to genetically enhance or change babies before they are even born. Imagine if gene therapy is used to 'cure' short height, appearance, sexuality, and other 'unwanted traits'. If these 'cures' could be made using gene therapy, then how would the world look and what might people think as these changes are made, on the other hand is it right to stop developing a technology that could have such a good impact for the human species.

Total Equality

If gene therapy makes everyone "perfect" how will this effect the population and out comes for jobs if everyone is equally qualified smart and athletic. Will it be worth living as a human if everyone is the exact same.

Nature and God

Some people believe gene therapy is similar to playing god but more importantly when we change our DNA we are changing what makes us human which could have massive effects on

our evolution as we move forward as a species. (unknown2, 2017)

Economical issues

Gene therapy could have massive results regarding economic issues, as the technology progresses new companies will come and with new jobs and stock market opportunities helping with the economy on the other hand there is a possibility of loss of work in some areas. This could also lead to an even bigger divide between the poor and the rich if only the rich have the money to access this new technology. Insurance, companies might also start allowing their services to cover for the costs of gene therapy. (unknown2, 2017)

Environmental Issues

The release of a new genetically engineered species could have the possibility of causing an imbalance in the ecology of a region. An accident or an unknown result could cause several problems. This could be fatal in human genetic engineering creating problems ranging from minor medical problems, to death. Underlying all of this is the huge issue relating to overpopulation if gene therapy is a success humanity could be looking at a huge risk of over population. (unknown2, 2017)

Social Issues

The greatest impact associated with gene therapy will no doubt be presented in our society. The idea of enhancements and 'designer babies' will greatly influence our culture and ideals. Unlike economic or political impacts, social impacts are much harder to see as they will change as the technology advances. Firstly, the therapy might be considered to be normal among society or it could become the norm creating a division between two sides which could also even be accentuated by money. To add to this the health benefits presented by gene therapy might also change society's perception on sickness and life. For example, if gene therapy can cure diseases and increase the average life span tremendously, this could change their view of the issue making it seem as a very good thing. Gene therapy can potentially eliminate all genetic diseases. Will our values change if we live in a world where there are no diseases and no problems? How will we think of life, a senseless and boring setting, or a perfect heaven? (unknown2, 2017)