

Winning KS4 essay in the University of Exeter's History Essay Competition

Are humans still evolving?

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The Oxford dictionary definition for evolution is 'the slow steady development of plants, animals, etc. during the history of the earth, as they adapt to changes in their environment'. In this essay I will set out to explain how humans are still evolving.

One main argument against human's continuation of evolution is that as a result of modern medicine it is harder for natural selection to take place. The average lifespan today is 66.26 years, whereas between 1500 and 1800 hundred the average lifespan 'hovered between 30 and 40'. This means that previously, those with genetic mutations such as phenylketonuria would have usually not been able to live well and/or long enough to procreate, so they would not pass down their DNA containing the mutation. However, with the evolution of science, people with these conditions can live longer, more normal lives and can procreate, thereby passing down the mutation to future generations. We also have medicines and treatments for infections and many diseases so the rate of infant mortality has decreased as those with weaker immune systems can now receive treatment. While this does mean that the Darwinist ideas of 'survival of the fittest' and 'natural selection' have been impacted by changes to our lifestyle, this does not mean that humans have stopped evolving because while 'Natural selection' is a mechanism by which evolution can occur, 'Evolution' simply means the gradual change of a population over time and can occur by other methods, so this argument does not prove that humans are no longer evolving.

Over the past hundred years, our habitat and environment has changed and humans have adapted, showing that humans are evolving. Cities have been developed and transport has evolved so we can travel to other countries and communities much faster and easier. Living in cities has led to the spread of a genetic variant of our DNA that allows us to be more resistant to diseases such as tuberculosis and leprosy. This is a clear example of evolution as in this example the humans created and moved into a new environment and led to a mutation becoming more prevalent in this environment to increase chance of survival, and this highlights the importance of the development of self-imposed selective forces such as cities on our evolution.

Another aspect of our lives which has changed is our diet. Before humans domesticated cows and other milk producing animals we stopped consuming milk once we left infancy, and so we stopped producing lactase to break down lactose, which is proven through ancient samples of DNA. Since then, we have evolved to continue to produce lactase beyond infancy, achieving 'lactase persistence' so we can break down lactose in milk. We first began domesticating cows approximately 10,500 years ago which is equivalent to approximately 376 generations. This is an example of humans creating their own selection pressure as we

as a species began to drink milk and so we evolved to be able to digest it. This proves that in less than 376 generations we have evolved, and therefore humans are still evolving.

Our society has developed and changed over the past thousands of years. While 20-30,000 years ago humans had to rely on themselves much more for survival, so they had significantly larger brains compared to modern day humans. As populations increased, concentration increased and when this happens in the same region, trade is set up between communities which are grew larger, there became a greater division of labour as gathering food became more efficient through the development of farming among other developments and interactions between humans became more varied and richer. As the labour division became greater, some humans did not need as much brain capacity as they could rely on others for survival as humans had created a 'society safety net' and so they did not need to be as smart to survive so they lived to recreate and pass down their less intelligent genetic code, which has led to brain size decreasing. Our brains are still decreasing in size as we do not rely on ourselves for food now that we have supermarkets and farms, and we have health services and militaries so we do not need to worry about health or attacks from animals or outsiders. This example shows how our evolving society has led us to evolve to become more dependent on each other and society to survive.

Another argument for why our brains are shrinking is because we have evolved to become tamer. As society has evolved so has our linguistic capabilities. This increase in communication has led to more aggressive and violent humans being outcast or killed by the rest of the group, thereby removing them from the gene pool. Those whose brains develop slower are typically less aggressive as they still have a juvenile brain when they are young adults. As they are less aggressive they were less likely to be outcast and so they passed down their genetic code for slower developing brains so humans evolved to have brains that develop slower. This is also is linked to the size of our brains, as out of 30 species that have been tamed, they have all had a decrease in brain size of approximately 10-15%, similar to humans. Our society is still evolving and this evolution of communication and ideals leads to different types of characteristics becoming less desirable and as a result we have edited our own gene pool and therefore influencing our future evolution. As society is constantly changing, how we are evolving is constantly changing and so we will never stop evolving as a species.

To summarise, as a society we are constantly changing, which will continue to influence how we evolve as a species and so we will always continue to evolve. The way we evolve may change as society changes however this will not prevent evolution occurring, instead it will simply change how we evolve and how we develop as a species.

