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## The Controversial Debates Around Uranus And Evolution Theory

To everyone's surprise, the Harvard paleontologist, Stephen Jay Gould went against a theory that has been accepted and studied for over one hundred and fifty years. Charles Darwin had found a conclusion to the theory of evolution after years of research and voyages. Only for Gould to try and debunk his theory after a mere twenty years of research on the topic. Even though Gould had a valid and compelling argument for his reasoning the scientific community rejected his theory mainly due to the fact that everyone considered him a Marxist and believed that these theories did not deserve any consideration. Another issue that Gould faced was that the scientific community has been researching and writing articles about Darwin's theory before Gould even came into the picture with Darwin's theory of evolution being taught in high schools around the world. Showing how certain scientific discoveries have not been considered when talking about certain discoveries that have been made even though there may have been significant evidence to support them.

Charles Robert Darwin was a British naturalist who was the first person to go against religious beliefs by proposing his theory of evolution based on natural selection. Darwin thought of this first theory of evolution as a gradual change. He believed that evolution was a slow and natural process with different species attaining small changes in genetic and physical characteristics over long periods of time. Darwin wrote about this newfound theory after the expedition he went on around the world in a ship called the HMS Beagle and he described evolution as, "descent with modification". He published the theory in a very controversial book at the time called 'On The Origin of Species' in the 1850s. Darwin had spent five years on board the Beagle which stopped in areas including South America, Australia and Southern Africa. The OpenStax College had reported that, "Over the course of his travels, Darwin began to see intriguing patterns in the distribution and features of organisms". Darwin had mainly been drawn to the similarities in the finches on the Galapagos Islands where he noticed all of the species of finch had similar but different characteristics from the others in separate areas. "For instance, species that ate large seeds tended to have large, tough beaks, while those that ate insects had thin, sharp beaks," this can also be seen on some of the many diagrams he had drawn in order to observe them later. Twenty years after the Beagle's exploration he had come to the conclusion that, "new species come from preexisting species, and that all species share a common ancestor," which he also had mentioned in his book.

Stephen Jay Gould had another idea about the cause of evolution. The American paleontologist had thought of evolution as a punctuated equilibrium. An article from the University of Vermont describes this process by saying, "species are generally morphologically stable, changing little for millions of years". In Gould's point of view species in isolated areas are the main ones that undergo this process due to them having more genetic variety that resulted from the different environments they had been in. Instead of believing that natural selection is the main process of evolution, Gould had believed that the driving force of evolution is mass extinction. Gould did not come up with this theory alone but made it with a colleague by the name of Niles Eldredge. During this period of time most experts in the subject had believed in Darwin's original theory. Both Gould and Eldredge were not entirely convinced by the idea of gradual change due to evidence from fossils. They observed that fossils could not be seen to have any gradual

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changes when organised from the oldest to most recent fossils. Elizabeth Barnes had said that, "They believed that isolated events, such as major geological catastrophes, or the formation of new geological barriers, could contribute to the evolution of species".

Gould faced many challenges after releasing his theory to the public. As David Prindle had put it, "the most important of those issues arose from the persistent contention that the basis of his work was Marxism". Gould was known to be a person who fought for human equality and wrote a popular article with his friend Richard Lewontin who was known to be a Marxist. He had worked with two organisations, Science for the People and Sociobiological Study Group, which were also known for having Marxist views. A comment he had made in 1977 from a paper he wrote with Eldredge stated, "I learnt my Marxism at my daddy's knee," this officially ruled him as a Marxist after the theory was described as, "Marxist theory with a biological face," by many people in the scientific community. Even though he was not a Marxist he was ruled as one for the rest of his career, leading to his theories being ignored by some of the scientific community. After Gould and Eldredge had told the public about their theory of evolution, most biologists thought of the lack of evidence for Darwin's theory as data that had not been found yet.

Both theories have arguments to show their validity but a conclusion still has not been made yet. Darwin's main argument had come from the observations he had made during the voyage of the HMS Beagle. Darwin's theory had been studied for over one hundred and fifty years before Gould had made his claim and no definite proof of the theory was found. As David Perlman reported, "But Darwin, ever the uniformitarian, conceded that huge gaps in the fossil record of his time posed the most crucial threat to his gradualist picture of natural selection". Even though Darwin's theory has been studied and taught about in schools for years, the theory with the most evidence to support it in my opinion is Gould's. The main piece of evidence supporting Gould's theory is from fossil remains that have been excavated. David Perlman also reported about fossils found in Michigan to show how certain clamlike brachiopods had not shown any evidence of changing at all even after thousand of years. Also that, "no intermediate fossil forms at all lay between those species and the new and very different brachiopod species that succeeded them after a major 'mass extinction' killed off 90 percent of all living species some 367 million years ago". This shows how there is more proof supporting Gould's theory rather than Darwin's theory. However, Darwin's theory is still more well known and supported by the scientific community due to it being around longer and a large factor being that Gould everyone thought of Gould as a Marxist which automatically ruled whatever he said as Marxist views.

Gould's theory has been something that has not been talked about much since around the period of time when he first made it with Eldredge. When researching for this report I had found it much harder to find information about Gould's theory rather than Darwin's theory. Gould's theory could only be read about on certain pages where Stephen Jay Gould was either the topic or author of the of the article or report. Whenever I would look at links featuring Darwin's original theory, only his theory or the Beagle is mentioned with his theory also being taught in most high schools around the world. On the other hand, information about Darwin and his theory could be found on almost all of the articles featuring Gould in anyway. It seems that on most pages about Darwin, information about the lack of proof for Darwin's theory or there being more proof of Gould's theory or that Gould's theory even existing. In his essay 'The Historical Structure of Scientific Discovery', Thomas Kuhn discussed different theories and discoveries in the past. Kuhn had described the start of a scientific discovery as, "the individual skill, wit, or genius to recognise that something has gone wrong in ways that may prove consequential".

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This can be used to show how Darwin was the first person to go against religion with the theory of evolution when stating his claim. However, Kuhn also spoke about how anomalies are not considered anomalies until everyone is sure the theory is right and the instruments did not make any errors, describing them as, "a violation of expectation". In the case of the Gould and Darwin controversy many modern day scientists and Darwin himself jumped to the conclusion that the lack of evidence for gradual evolution is due to anomalies or not finding enough remains. Gould on the other hand thought of this lack of evidence of Darwin's theory as a mistake due to the evidence proving his theory of punctuated equilibrium.

When talking about the discovery of Uranus a similar trend can be seen. An astronomer by the name of William Herschel had owned a journal and during the month of March 1781 he made an entry saying, "in the quartile near Zeta Tauri... is a curious either nebulous star or perhaps a comet". This is said to be the comment proving that he had discovered Uranus. What many sources forget to mention is that the same observation had been made by at least seventeen people before him who thought it was a star. Only for the astronomer Lexell to suggest that it may be a planet only a few months after word of the 'comet' had come out to the public. From this information we should be able to confirm that it is not a sure bet that Herschel had discovered Uranus or deserved to be remembered as the person who discovered Uranus. He was just the first person to claim it was anything other than the star with the actual confirmation coming from Lexell even Thomas Kuhn had asked the question, "Are we entirely and unequivocally clear that it was Herschel rather than Lexell who discovered it?" in his essay called 'The Historical Structure of Scientific Discovery'. Whether it was Lexell or not, Herschel is still considered to be the person who discovered Uranus and this can be seen from a simple google search stating that he was the one who discovered Uranus.

Overall, both of these examples have shown how a lot of information is left off the internet. Where layers of other, preferred or generally more accepted information is put ahead of and given priority over other sources. This brings up the question of is this due to the more common google searches or an attempt to cover up certain information? This proof of this can easily be seen with Darwin's theory where Gould is not brought up in any articles about Darwin but Darwin is almost always brought up in articles about Gould. Or how Lexell is not considered to be the person who discovered Uranus even though he was the first person who suggested it was a planet. How certain pages lack important information that could sway someone's opinion completely dependent upon the situation and what is being argued. Before researching for this essay I was definite that Darwin's theory was correct as that was all I was taught in my high school. I had not even heard of Stephen Jay Gould before and now I believe that his argument may have a more valid point.