

Essay on dawkins and the principle of gradualism

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Since the introduction of the idea of natural selection, scientist Charles Darwin has had a profound impact on the understanding of the origin of species. However, opponents have contested this idea fiercely since its introduction due to spiritual beliefs and apparently contradictory evidence. Through his book *River Out of Eden*, author Richard Dawkins contests these challenges through new information and evidence. The principle of gradualism becomes central to Dawkins' argument by not only providing proof of intermediate stages in order to refute the argument from personal incredulity but also by explaining the river of DNA.

The principle of gradualism ultimately applies then to both speciation and the development of favorable traits within species. In the third chapter of his book, Dawkins proposes that gradualism is a principle explaining evolution due to the inability to explicitly document the improvement of traits (83). Understandably, if changes in genes produce only small, unnoticeable improvements in each generation, it would be difficult to track such improvements, particularly across an entire species. This becomes even harder to determine when the changes occur in such internal body parts, such as eyes, skin tissue, or internal tissue. Eventually, these small changes, in combination with geographic separation, lead to speciation or the development of new species and even major classifications (Dawkins 6). The differences could ultimately be so small and internal as in the class of the grey squirrel and the red squirrel, but they still constitute a new species. Such a small example also serves as more recent proof for gradualism in evolution concerning major organism groups, who theoretically developed the same way.

More importantly, Dawkins uses the principle of gradualism to refute what he refers to as the argument of personal incredulity. In chapter three, Dawkins defines it as the inability to believe that seemingly perfect traits could develop over time, typically due to a human worldview (70). Instead of looking at the process of gradualism in action through examples of change over time, these people see the final result through human eyes. This egocentric view removes the impact of the very traits under discussion which help to form a seemingly perfect individual. By viewing the situation through gradualism, Dawkins notes that many seemingly perfect situations, such as the relationship between wasps and orchids, could easily occur without every element present. For example, the wiggle dance performed by bees to communicate the location of food exists in many forms across many species of bees and yet seems perfect in each situation. Additionally, while the particulars and workings of the dance may seem foreign to a human observer, it serves its function for bees, who understand the information provided.

Finally, the principle of gradualism helps the reader to understand Dawkins' metaphor about the river of DNA. In the first chapter, the author describes the continuation of a species as the flow of DNA through generations (Dawkins 4). This vividly describes the chain of DNA from parent to offspring through the process of regeneration. Even more important, the choice of the word river also depicts the large number of individuals who exist in this chain simultaneously. However, gradualism then steps in when describing the branching out of species into new rivers, which happens with little disruption (Dawkins 10). Even as the species are evolving, the process of speciation

occurs just as smoothly as the rest of the process of reproduction. In fact, the distinction of a new species does not become obvious until a few generations later, when the differences become more pronounced. At this point, the evolution may appear to be a sudden improvement when viewed in hindsight.

The topic of the evolution of species has been a highly debated, discussed and developed topic since expressed by Darwin in the nineteenth century. Dawkins takes the topic to a different place by depicting the evolution and advancement of species as the flow of a river of DNA through time. Central to this idea is the idea of gradualism as demonstrated by the development of traits. If one did not look closely at species for their change over time, this principle could be easily overlooked through the argument of personal incredulity. However, Dawkins easily refutes this argument and simultaneously offers hope about the future of species' evolution.

Works Cited

Dawkins, Richard. *River Out of Eden*. New York; Basic Books, 1995. Print.