

Descent with Modification

Darwin did not use the word "evolution" in the original edition of his published work, but preferred "descent with modification". Evolution, at the time, already had other meanings in biology, that were not well matched to his ideas. In general, evolution initially indicated an unraveling of sorts, where each generation is more-or-less pre-configured long before, and just emerges when its time comes, in a long line of unravelling operations. In addition, or perhaps somewhat alternatively, evolution was also coming to be understood to imply a progression from simple to complex. These meanings for evolution did not suit Darwin's ideas at the time, though interestingly, the meaning of the word evolution itself eventually evolved to become synonymous with his ideas.

Descent with modification is Darwin's way of saying that subsequent generations show increasing adaptation to their local environment. There is no intended implication that each generation is inherently more complex, nor better in a global sense. This modification takes place because of two main drivers; the first is natural variation, and the second is natural selection, which together now form the basis of what we call Evolution. Each new generation is modified from the previous by (usually) small random variations (or mutations), which are not guided by any specific supernatural forces nor pre-ordained order. Each new and slightly different generation will now survive, either better or worse than the previous generation. Over a large population, the random changes are amplified by successful lives and the resulting survival and increased procreation. The characteristics resulting from random variations that are poorly adapted to the local environment will generally be suppressed. Nature allows the better adaptations to persist; in other words they are naturally selected.

Imperfect Natural Selection

In "Ontological and Theological Perfection", by W. Tatarkiewicz, the Roman Catholic church had previously considered that "God permitted imperfections in creation when they were necessary for the good of the whole. And for man it was natural to go by degrees from imperfection to perfection."

In Darwin's time and place, where Christian world-view prevailed, the idea that subsequent generations succeeded only because nature favoured those that could procreate more was not in keeping with religious teachings, which admittedly were changing quickly at the time. Sex aside, natural selection, where only the local external environment guided the betterment of man and other animals, was too atheistic; it removed a creator and any possible on-going supernatural guidance from the picture. Religious leaders at the time were apparently even somewhat accepting of other contemporary biological progression theories, where evolutionary changes were supposedly making things more perfect, which a higher power would surely encourage, if not guide. Notionally, however, natural selection could result in a species that is locally optimised, but globally "less perfect" and possibly completely unable to survive, and therefore surely not something that a perfect overseer would have encouraged.

Persistence of Resistance

Perhaps the most famous formal resistance to the theory of evolution is represented by the Scopes Trial, which took place in 1925 in the United States. The result of the trial was that John Scopes was found guilty of violating the Butler Act, which was a law prohibiting teachers from denying the Biblical account of man's origin, and furthermore prohibited the teaching of the evolution of man. The Butler Act was not repealed until the late 1960s, and there was little appetite for teaching evolution in the mid-century, at least in the United States. However, there has indeed been a gradual increase in the teaching of evolution throughout the States and much of the Western world, to the point where today it is now taught as a matter of fact in many American, Canadian and other schools.

To be sure, the resistance to the theory of evolution has not waned, but in fact has become more strident and perhaps formalized. More fundamentally religious countries, or sects within those countries, especially the United States, have begun to circumvent the direct battle between Creationism and Evolution, in the movement for Intelligent Design. Adherents purport that there is an intelligent creator, and that they are able to show this using evidence-based science (though the wider science community generally does not support this proposition). Nevertheless, a very recent example of the traction Intelligent Design has in society is the 2005 legal case of *Kitzmiller versus Dover Area School District*. The school board had required the presentation of Intelligent Design as an alternative to Evolution in science classrooms. The court found Intelligent Design was essentially Creationism, and was therefore promoting a religion-based ideology, which is against the American Constitution.