

Sexual selection

The general view of Darwin's idea on evolution has been discussed in the previous sections. That there are concerns about the idea of natural selection is clear from the discussion. However, Darwin ran into insurmountable problems when he tried to align the natural world with his idea of natural selection. Immediately upon encountering the birds, Darwin ran into difficulty explaining their appearance and behaviour in line with his theory of natural selection.

This is because birds have brightly coloured feathers, make loud noises we call songs, and even have feathers that hinder flight. Because Darwin had first introduced the reader to his natural selection idea, which states that 'any variation in the least degree injurious would be rigidly destroyed', Darwin faced a choice to either abandon his natural selection idea or invent a new selection idea to explain the way birds look and behave.

Darwin explained that, in his view, male birds look extraordinary because "female birds, by selecting, during thousands of generations, the most melodious or beautiful males, according to their standard of beauty, might produce a marked effect". (Darwin, 1869, 5th ed., p. 102). One is right to ask, 'What happened to natural selection and its stringent processes?'

Considering that birds appeared approximately 300 million years after the first insects emerged, and if Darwin was right, that a stringent process ruled in which any injurious variation would be rigidly destroyed, it is difficult to imagine how birds with their loud songs, brightly coloured feathers, and even feathers that hinder flight emerged through such a stringent process.

Instead of calling the process the selection of 'melody and beauty', which he claimed the female birds selected for, Darwin called it 'sexual selection'. Although Darwin later extended sexual selection across the animal kingdom, his discussion in *On the Origin of Species* was primarily on birds.

It is noteworthy that Darwin did not believe his own explanations of evolution, as he wrote five months after he had published *On the Origin of Species* on 24 November 1859, in a letter dated 3 April 1860, to Asa Gray, a prominent botanist in his time: "...now small trifling particulars of structure often make me very uncomfortable. The sight of a feather in a peacock's tail, whenever I gaze at it, makes me sick!" I have disregarded sexual selection in this book because addressing competing explanations of evolution would only complicate an investigation of the evolutionary process with fresh eyes.

Darwin's grief

Considering Darwin's idea of natural selection, it is important to note the historical timeline of its development. Approximately twenty-four years elapsed between Darwin's visit to the Galápagos Islands in 1835 and the publication of *On the Origin of Species* in 1859. This extended interval indicates that the idea of natural selection did not arise directly or immediately from field observations. It is also noteworthy that eight years prior to publication, Darwin experienced a profound personal loss with the death of his daughter Annie. While it is impossible to determine precisely how this event influenced his thinking, several

biographers have suggested that Annie's death shaped aspects of Darwin's later beliefs and outlook. In my view, Darwin's grief influenced how he interpreted life and nature. From this period emerged one of the most quoted passages in biology:

"...that individuals having any advantage, however slight, over others, would have the best chance of surviving and of procreating their kind... any variation in the least degree injurious would be rigidly destroyed."

(Darwin, 1859, *On the Origin of Species*, Chapter IV, pages 77 and 78). To me, this reflects not a biological observation but a profoundly harsh interpretation of life—a perspective born out of grief and the belief that a slight injurious variation led to Annie's rigid destruction—which has shaped modern evolutionary thinking for more than 150 years. Evolutionary models, like all human constructs, arise through an internal process of interpretation. Recognising this distinction is essential because it underscores the need to remain open to alternative models of evolutionary change—models that may offer greater explanatory power than those currently dominant.

I did it for Annie

Darwin and his wife Emma had ten children, three of whom died young. Mary Eleanor Darwin was born in 1842 and died only a few weeks later. Charles Waring Darwin was born in 1856 and died in 1858, aged one. It was the death of Anne Elizabeth Darwin—Annie—who was born in 1841 and died in 1851 at the age of ten, that caused Darwin his deepest grief. Several biographers have suggested that Annie's death may have influenced Darwin's later thinking, his loss of religious belief, and the emotional lens through which he viewed the natural world. Janet Browne, in *Voyaging and The Power of Place*, presents Annie's death as one of the major emotional events in Darwin's life. Annie was "the apple of her proud father's eye."

James Moore, co-author with Adrian Desmond of *Darwin's Sacred Cause*, has also written about the significance of Annie's death in Darwin's life and beliefs. John van Wyhe and Mark J. Pallen record Darwin's grief in the following passage:

"That Annie's death caused great distress to her parents and family is beyond dispute... Darwin closed the memoir with a cry from the heart: 'We have lost the joy of the household, and the solace of our old age...'"

It is with great empathy and deep sympathy that I read the words of a grieving father. Nonetheless, unlike Lamarck and other evolution theorists before him, Darwin could not abandon natural selection when he encountered serious obstacles, such as the presentation of birds and the fossil record, which did not fit with a slow, gradual model of change, in which any slight injurious variation would be rigidly destroyed. I strongly suspect that Darwin remained committed to his idea because, in his eyes, discarding it would have meant abandoning Annie, since through her death, he derived the idea of natural selection.