

Evolutionary Progress?

BY TIMOTHY SHANAHAN

Progress might have been all right once, but it has gone on too long. (Ogden Nash 1962, p. 11)

That the history of life on Earth manifests some sort of progress has seemed obvious to many biologists. Once there were only the simplest sorts of living things—replicating molecules, perhaps. Now the world contains innumerable species displaying amazing adaptations fitting them for every conceivable niche in the economy of nature. How could anyone who accepts an evolutionary view of life deny that progress has occurred? Yet perhaps no other issue in evolutionary biology has inspired such passionate controversy. According to one prominent critic, Stephen Jay Gould, “Progress is a noxious, culturally embedded, untestable, nonoperational, intractable idea that must be replaced if we wish to understand the patterns of history” (Gould 1988, p. 319). Other critics, such as William Provine, are somewhat less contemptuous but equally dismissive of the idea of evolutionary progress, issuing the common complaint that “the problem is that there is no ultimate basis in the evolutionary process from which to judge true progress” (Provine 1988, p. 63).

Undaunted by these attacks, however, contemporary friends of the concept of evolutionary progress have insisted on its centrality in a Darwinian view of life. According to Richard Dawkins, the most important features of evolution simply cannot be understood correctly without embracing the notion of evolutionary progress: “[A]daptive evolution is not just incidentally progressive, it is deeply, dyed-in-the-wool, indispensably progressive. It is fundamentally necessary that it should be progressive if Darwinian natural selection is to perform the explanatory role in our world view that we require of it, and that it alone can perform” (Dawkins 1997, p. 1017). In Ernst Mayr’s view, progress in evolution is simply as obvious, and as undeniable, as the manifest progress in the development of the automobile (Mayr 1994).

As these divergent viewpoints reveal, the notion of evo-

lutionary progress remains a hotly contested idea in evolutionary biology (Gould 1996, 1997; Ruse 1996). A cursory examination of this issue might tempt one to conclude that it is inherently unresolvable (Ruse 1993). But as I will try to show, the question, “Is evolution progressive?” admits of the same sort of answer as other questions in evolutionary biology. The key lies in spelling out more carefully the meaning of the term evolutionary progress. But although being clear about the meaning(s) of this term is necessary, it is not sufficient for answering this question. Once the meaning(s) of the term evolutionary progress has been clarified, there remains the empirical and interpretive task of determining whether evolution is progressive in one or more of these senses.

There are, then, two basic questions concerning evolutionary progress: First, what is meant by evolutionary progress? Second, is evolution, in fact, progressive? With regard to the first question, I will argue that the notion of evolutionary progress has both a core meaning as well as a set of clearly specifiable alternative interpretations, each of which needs to be carefully identified. In response to the second question, I will argue that if some conceptions of evolutionary progress are exemplified in the history of life, then evolution must be considered progressive, at least insofar as those conceptions are concerned. Indeed, given the range of legitimate interpretations of evolutionary progress, it will almost necessarily be the case that evolution is progressive according to one of these interpretations.

What is evolutionary progress?

The notion of evolutionary progress has accumulated a range of connotations. Consequently, it is worthwhile to return to the core concept of evolutionary progress (i.e., those features of evolutionary progress that virtually everyone, despite their other differences, would agree to) to see what the basic concept requires. This can be done by imagining a hypothetical world in which there is no evolutionary progress and then adding elements to this picture one by one until progress emerges. The result will be the minimum set of ingredients necessary for evolutionary progress.

Evolutionary progress requires change in a population. Imagine a world of entities in which there is no change whatsoever. An observer visiting that world today would observe exactly the same things as she would have seen on a visit a hundred, a thousand, or a million years ago. Clearly, such a world would not be described as

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Evolutionary Progress

K Morrison



Evolutionary Progress:

Unveiling the Magic of Words: A Report on "**Evolutionary Progress**"

In a global defined by information and interconnectivity, the enchanting power of words has acquired unparalleled significance. Their capability to kindle emotions, provoke contemplation, and ignite transformative change is really awe-inspiring. Enter the realm of "**Evolutionary Progress**," a mesmerizing literary masterpiece penned by way of a distinguished author, guiding readers on a profound journey to unravel the secrets and potential hidden within every word. In this critique, we shall delve into the book's central themes, examine its distinctive writing style, and assess its profound impact on the souls of its readers.

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