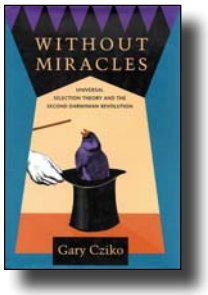
Without Miracles

Universal Selection Theory and the Second Darwinian Revolution



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By Gary Cziko

Review from
The inside flap of *Without Miracles*

"A truly admirable work that should prove extremely valuable. There's really nothing to compete with it for its broad scope and lively, easy style."

John Ziman, Professor Emeritus at the University of Bristol, England

In this sweeping account of the emergence of fit, Gary Cziko integrates numerous scientific disciplines within the perspective of a universal selection theory that attempts to account for all cases of fit involving living organisms, including those that might appear miraculous. Cziko's bold assertion is that all novel forms of adapted complexity—whether single-celled organisms or scientific theories—emerge from an evolutionary process involving cumulative blind variation and selection.

Without Miracles describes many remarkable examples of the fit of various structures, behaviors, and products of living organisms to their environments in a broad synthesis of humankind's attempt to understand the emergence of complex, adapted entities. These explanations range from the providential accounts of the early philosophers and "natural theologians," through instructionist theories of the type proposed by Lamarck, to an ongoing "second Darwinian revolution" in which natural and artificial selection are being applied to many fields of science to both explain the emergence of naturally occurring adapted complexity and facilitate the design of useful products ranging from microbes to computer programs.

The evolution of explanations of fit from providential through instructionist to selectionist theories, Cziko argues, has occurred repeatedly in many different fields of knowledge along with a growing realization that the Darwinian mechanism of cumulative blind variation and selection is the only tenable nonmiraculous explanation for the emergence of any kind of functional complexity.

Cziko applies this provocative selectionist thesis to a stunning range of domains including biology, immunology, neuroscience, ethology, psychology, anthropology, philosophy, education, linguistics, and computer science. The result is an up-to-date, clearly summarized collection of selectionist arguments that shows how our knowledge of the emergence of fit has itself evolved and continues to do so.

Gary Cziko is Associate Professor in the Department of Educational Psychology at the University of Illinois at Urbana-Champaign.