

Evolutionary theory in philosophical focus

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Abstract

This chapter surveys the philosophical problems raised by the two Darwinian claims of the existence of a Tree of a life, and the explanatory power of natural selection. It explores the specificity of explanations by natural selection, emphasizing the high context-dependency of any process of selection. Some consequences are drawn about the difficulty of those explanations to fit a nomological model of explanation, and the irreducibility of their historic-narrative dimension. The paper introduces to the debates about units of selection, stating the compelling force of genic selectionism but highlighting some critiques. Then it addresses the limits of selectionist explanations : the compared status of selection, drift and phylogenetic inertia are investigated, and the debates over adaptationism are presented, with the aim of defining the varieties of adaptationisms as research programs. In order to assess the scope of natural selection, the chapter addresses weak and strong challenges to the Synthetic theory of evolution, both from paleontology (punctuated equilibria, Gould' s contingency thesis) and evolutionary theory of development. We finally sketch some consequences of evolutionary theory concerning philosophical questions about human nature, on the basis of the hypothesis of the universality of selectionist explanations: this part deals mostly with epistemology and psychology.

Keywords: Natural selection – Tree of life – Units of selection – Adaptationism – Genetic drift – Constraints – Explanation – Laws - Adaptation – Causes of evolution – Negative view of selection

Subjects: [Specific Sciences: Biology: Evolutionary Theory](#)
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