
Evolutionary Developmental Biology's Relative Significance Controversy

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Abstract

The question of the possibility of a theoretical synthesis of so-called neo-Darwinian theory and evolutionary developmental biology (evo-devo) has led to a controversy over the relationship between the two different explanatory frameworks (e.g., Amundson 2005, Laubichler 2010, Minelli 2010, Pigliucci and M'uller 2010). Through analysis of the terms of the debate and the arguments employed in it, I argue that there is a relative significance issue (Beatty 1995, 1997) that is missed by the current debate. Indeed, the heterogeneous domain of biological evolution requires both neo-Darwinian theory and evo-devo to account for its different phenomena because the two explanatory frameworks do not and cannot explain the same phenomena. It is my view that the relative significance issue serves as further indication that a theoretical synthesis of neo-Darwinian theory and evo-devo is highly unlikely at best; instead, both are needed to explain different phenomena within the domain of evolutionary biology.

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