
Patterns of Discordance

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Abstract

”Session: Exploring the evolution of culture and social behavior (Steve Downes, Patrick Forber, Matt Haber, Fiona Jordan, Elisabeth Lloyd, Rory Smead)”

Lineages at different levels of the biological hierarchy will interact with and be embedded within one another. This produces patterns of evolutionary history, the study of which provides insights into the process of evolution. These patterns, though, may also be confounding in a multiplicity of ways. For example, the relatively recent recognition of the prevalence of lateral gene transfer (LGT)—especially among microbes—has some questioning the Tree of Life metaphor and even the phylogenetic project itself. At first pass, the transmission of cultural traits appear to be susceptible to similar complaints; e.g., cultural traits are transmitted horizontally, and the mode of transmission may undermine standard phylogenetic models.

I remain more optimistic, instead seeing a new challenge for systematists: the elucidation of the patterns of genealogical discordance. This acknowledges the genuine challenge LGT (and other sources of genealogical discordance) presents to phylogenetic thinking, yet recognizes the value of the patterns they produce. My levels of lineage theoretical perspective frames research on these patterns, and here I consider how that applies to recent phylogenetic studies of cultural evolution. This carries implications for testing cultural evolution, the relation of biological and material cultural evolution, and, more broadly, suggests a robust response is available to concerns about reconstructing tree-like phylogenies, e.g., singular focus on one source of discordance may distort estimates of how prevalent that source is in a system being studied.

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