# Trading Fiction for Performance: How to Understand Computer Simulations of Ecological Systems

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**Abstract**

Session: Issues in Biological Modeling–Mechanisms, Simulations and Target Systems (Bert Baumgaertner, Alkistis Elliott-Graves, Shawn A. Miller)
Biologist Steven L. Peck has recently argued that computer simulation models of ecological systems present philosophers of biology with "deep interpretive problems" owing to their complexity ("Agent-based Models as Fictive Instantiations of Ecological Processes," *Philosophy and Theory in Biology*, March 2012). He proposes analyzing such models as fictive instantiations, employing the hermeneutics of Hans-Georg Gadamer. I advance a critique of fictionalism about ecological simulation models, arguing that (1) deflationary views, i.e., claims that models are *mere* fictions, are uninformative, and (2) non-deflationary views that rely on particular theories of fiction break down when applied to ecological simulation models, i.e., generate disanalogies that thwart the interpretive understanding that Peck seeks.
I propose an alternative conceptualization of these models drawing on notions of performativity developed in the medical ethnography of Annemarie Mol. On this view, models are constructed, historical entities with genealogies that are best understood by attending to their particular parts and manner of their making. So conceived, ecological simulation models are not postulated fictions, but rather things that scientists *do*. A case study of an invasive species model serves to illustrate.

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