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# Robustness Redux

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## Abstract

Recently, I have offered an analysis of robustness analysis in modeling. Suppose an evolutionary or ecological model implies a prediction, but we note that our model contains a worrisome idealization. One can demonstrate the prediction is robust if one can replace the worrisome idealization with another assumption and show the result is still implied. Robustness analysis thus shows how to remove worries about idealizations. Additionally, I have also raised a concern regarding robustness analysis; namely, the replacing assumption must be either strictly speaking true or idealized itself. If the former is correct, then robustness was not needed, and if the latter is correct, then robustness analysis cannot alleviate our worry regarding the idealization. In this paper, I attempt to accomplish two things by considering examples from evolutionary biology and ecology. First, I respond to the dilemma by using strategies offered by epistemological contextualists (i.e. Keith DeRose, Fred Dretske, and Michael Williams). Model skeptics might worry about either a specific idealization, a specific set of idealizations, or idealizations per se. If one is a skeptic regarding idealization per se, then one must forgo scientific investigation into complex systems and not just modeling. Absent this model skepticism, the dilemma is epistemically manageable. Second, I urge, following William Wimsatt, pseudo-robustness – a result that follows from a set of models that are thought to be independent in the relevant sense but are not – can be as important as robust predictions.

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