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# Why and How Biological Practice Matters to a Philosophical Analysis of Epistemic Reduction

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## Abstract

In contemporary philosophy of biology most authors agree that a philosophical analysis of biology must take seriously actual biological practice. However, it remains unclear which *role* empirical information about biological practice should play in a philosophical analysis and which *kind* of empirical information should be considered as particularly relevant. In this talk I draw on the debate about epistemic reduction in biology to explore these methodological issues. I argue that, on the one hand, an analysis of the concept of epistemic reduction must be based on a careful study of actual cases of reductive explanations, of biology's reductive investigative practices, and of the discussions about the "limits of reductionism" that take place in biology itself (most notably, in cancer research and in systems biology). On the other hand, developing a philosophical account should amount to a *critical reconstruction* of biological practice, and thus should involve normative assumptions as well. I illustrate this claim by revealing three respects in which my own approach to analyzing epistemic reduction in biology transcends a mere description of biological practice: first, it is based on a choice of *paradigmatic and important examples* of reductive explanations; second, it *makes explicit* assumptions that are only implicitly present in biological practice; and finally, in order to establish *coherence* it rejects some of the conflicting claims of scientists as too vague or incorrect.

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