**The Pragmatist Challenge: Pragmatist Metaphysics for Philosophy of Science**

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1: “Pragmatism for Philosophy of Science”, H.K. Andersen and Sandra D. Mitchell

This chapter introduces the volume. We situate the book as coming out of a years-long discussion surrounding the ways in which pragmatism can serve as an alternative approach to topics at the intersection of philosophy of science and metaphysics. Pragmatist approaches here involve the inextricability of methodological or epistemological commitments with more fundamental or metaphysical questions. Many traditional dichotomies such as realism versus antirealism, truth versus idealization, unification versus disunity, are challenged, and alternatives developed from a more holist and pragmatist perspective.

2: “Sketch of some themes for a pragmatic philosophy of science”, James Woodward

This paper sketches one possible form that a pragmatist philosophy of science might take. It defends general philosophy of science, although not in the form it has traditionally taken, and along with this, a focus on methodology as a legitimate concern for philosophers of science. I emphasize the idea that good methodology depends on specific empirical assumptions about the subject matter to which the methodology is applied but I also argue that common methodological problems arise across different areas of science — the investigation of these forms is an important part of the subject matter of general philosophy of science. Connections are made between some classical pragmatist themes (e.g., rejection of spectator theories of knowledge, scepticism about overly literal understandings of representation) and issues in contemporary philosophy of science. My intention is to be provocative.

3: “Trueing”, H.K. Andersen

Even in areas of philosophy of science that don’t involve formal treatments of truth, one’s background view of truth still centrally shapes views on other issues. I offer an informal way to think about truth as trueing, like trueing a bicycle wheel. This holist approach to truth provides a way to discuss knowledge products like models in terms of how well-trued they are to their target. Trueing emphasizes: the process by which models are brought into true; how the idealizations in models are not false but rather like spokes in appropriate tension to achieve a better-trued fit to target; and that this process is not accomplished once and done forever, but instead requires upkeep and ongoing fine-tuning. I conclude by emphasizing the social importance of being a pragmatist about truth in order to accurately answer questions about science such as, “but do we really know that…”

4: “The Bearable Thinness of Being”, Sandra D. Mitchell

Taking a pragmatist stance toward the practices and products of science shapes our answers to central philosophical questions. In this paper I develop a pragmatist/interactionist defense of realism. I reject the dichotomy on offer between structural (top-down) and causal (bottom-up) defenses of the reality of phenomena. Inspired by the work of J. J. Gibson, an ecological psychologist, I describe how scientists’ conceptual and representational practices work in concert with their observational and experimental ones to stabilize acceptance of a claim of realism. What is real is what is jointly afforded by philosophical presumptions about causation, theoretical representations of the purported phenomena, and inferences from experimental data.

5: “Respectful Deflationism”, Edward Hall

Philosophical inquiry about metaphysically loaded expressions like “law of nature”, “essence”, and “ground” faces a choice point: Do we need the word, and the concept that goes with it, in order to facilitate thought and communication about some distinctive, explanatorily important metaphysical structure? Or does their value for us consist in the way they play some crucial epistemic role, a role that can itself be characterized without reference to any such metaphysical structure? Here I explore the latter option, in the form of “respectful deflationism”: roughly, the position that we can in good conscience take some putatively metaphysical expression to be of central philosophical importance, but for entirely non-metaphysical reasons. I use recent debates between Humeans and anti-Humeans about laws of nature as a case study.

6: “Pragmatism and the challenge of scientific (dis)unification”, David Danks

Pragmatist accounts of science are often thought to necessarily imply pluralism about science. This chapter examines the common belief that a pragmatist approach must lead to the conclusion that scientific theories cannot be unified in substantive ways. I first examine the grounds for this belief, and argue that the prima facie connection between pragmatism and (dis)unification holds only if we adopt a narrow view of the conditions under which scientific theories are actually unifiable. In particular, I contend that this apparent connection presupposes that unification requires intertheoretic reduction, but there are many other intertheoretic relations. If we broaden our understanding to allow for unifications based on mutual satisfaction of intertheoretic constraints, then the connection between pragmatism and disunification no longer holds. As a result, the pragmatist about science can have all of the scientific unification that they need, even if that unification falls short of the realist’s demands.

7: “Pragmatism, Perennialism, and the Physics of Ignorance”, Laura Ruetsche

Investigating the foundations of quantum field theories, I have suggested that theory specification has a pragmatic dimension: strategies for equipping physical theories with content, if sensibly pursued, eventuate in contents indexed not only (or not just) to the way the world is, but also to our aims in using our theories and the circumstances we use them in. Here I assess the “fundamentalist” response, that the apparent appeal of pragmatizing content rests on transient artifacts of the present incomplete state of physics. Fundamental physics, the response continues, can be properly understood if only it's understood as representing the way the world is. Insofar as none of the physics we have now is genuinely fundamental, we can’t directly assess this fundamentalist response. Undertaking an indirect assessment, I develop two reasons to predict that future scientific theories, including theories of ``fundamental physics,'' will continue to be best understood as possessing pragmatized content.