

On the Rationality of Metaphysical Commitments in Immature Science

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Kuhn famously claimed that like jigsaw puzzles, paradigms include rules “that limit both the nature of acceptable solutions and the steps by which they are to be obtained” (Kuhn 1962/1996, 38). Some such rules are “quasi-metaphysical” in the sense that they are premised on ontological assumptions about the most basic constituents of reality (Kuhn 1962/1996, 41). For instance, after about 1630 many natural scientists accepted the view that the universe was composed of minute corpuscles, and they accepted as a guiding rule of inquiry that natural phenomena should be explained in terms of the size, shape, motion, and interaction of these elementary entities.

But such metaphysical commitments (and the rules they issue) are difficult to justify rationally. After all, the commitments are *presuppositions* of normal-scientific inquiry and so cannot themselves be established by normal science. How, if at all, can such metaphysical commitments be justified?

One potential answer can be drawn from Michael Friedman’s recent work. He holds that philosophy has historically operated as a meta-framework for deliberation about presuppositional elements of normal science. For instance, to make coordinating principles in relativity theory intelligible to those working inside rival frameworks, Einstein drew on a philosophical debate about absolute versus relative motion, a debate stretching back to the seventeenth century (Friedman 2001, 101-106). Perhaps a paradigm’s metaphysical commitments can also be justified—or at least made intelligible to those outside the paradigm—through such philosophical (i.e., meta-scientific) deliberation.

Friedman’s account can help make sense of metaphysical commitments in mature sciences (e.g., 20th-century physics). But I will argue that his account is less useful for analyzing the dynamics of immature sciences. Young sciences are often hatched out of philosophy through a kind of disciplinary mitosis. In the struggle to draw a stable boundary between philosophy and the young science, the science’s

metaphysical commitments are often designed not to draw on, but rather strenuously to *avoid* making contact with philosophical discussion. Or so I shall argue.

Specifically, my aim is to show how metaphysical commitments can emerge during the *mitotic phase* (as I call it) of scientific development. I will show how such commitments can indeed be rational even though their justification comes from *neither* normal-scientific demonstration nor meta-scientific, philosophical deliberation. They can be rational to the extent that they stand to help establish a stable boundary between philosophy and the emerging science.

To support my position, I offer a case study of empirical psychology's emergence from philosophy in the late 19th century. I focus on William James's *Principles of Psychology*, the field's first blockbuster textbook to be written in English. Among the more controversial aspects of that book was the way it defined psychology's proper object, "the mental state."¹ The definition was controversial precisely for the forthright way that it incorporated metaphysical assumptions about the mind.²

James argued that at the outset of inquiry, psychologists must "assume certain data uncritically." They must assume the existence of "(1) *thoughts and feelings*" inside "(2) *a physical world* in time and space with which they coexist and which (3) *they know*" (James 1890/1981, 6-7). He then claimed that those "thoughts and feelings" the psychologist studies—i.e., "mental states"—must be construed as having five basic properties that the scientist is to "decline to be responsible" for explaining (James 1892/1983, 271). For instance, the first basic property of the mental state is that "every thought tends to be part of a personal consciousness" (James 1890/1981, 220). I argue that each of these basic properties is *metaphysically loaded* in a special sense that becomes clear only when we place James's work into an appropriate historical context.

¹ This was a technical phrase for James; see (James 1890/1981, 6, 186; James 1892/1983, 275). He used "thought," "feeling," and "mental state" interchangeably.

² Three reviews that attacked the notion that psychology must begin with metaphysical assumptions—or at any rate, with James's particular metaphysical assumptions—were (Fullerton 1894; Ladd 1892; Peirce 1891).

Neo-Kantian idealists like Edward Caird, Francis Herbert Bradley, and especially Thomas Hill Green had developed pointed criticisms of psychology during the 1870s and 80s. They argued that minds are not appropriate objects of scientific investigation.³ They especially rejected the notion that a would-be science of mind could provide any results relevant to philosophy.⁴ These critics often argued that there were certain, basic features of the mind that were intractable to scientific investigation. They portrayed this alleged intractability as evidence that there was something flawed about the very idea of a natural science of mind.

I show that those five features James chose as basic properties of the mental state are *metaphysically loaded* in the following sense, then. They are *metaphysical* in that they identify mental properties that were hotly contested in the fight between idealists and mental scientists;⁵ and they are *loaded* in the sense that the scientist is to “decline to be responsible” for explaining them. James consigns the job of explaining such basic features of the mind to philosophy.

Thus, James’s basic definition of the mental state contains metaphysical presuppositions about the mind; Kuhn’s claim that sciences contain metaphysical presuppositions squares with the results of our case study. But the presuppositions are rational to adopt, I argue, because they stand to help *divide labor* between philosophy and the emerging science of psychology. They accomplish this task by specifying which specific questions are to be the province of philosophy and which

³ Bradley was more moderate, arguing that psychology *could* be a science, though like other sciences, it could provide only an incomplete account of its subject matter. Green, Caird, and their ally Andrew Seth Pringle-Pattison categorically rejected psychology on the grounds that the mind is just not the sort of thing that can be studied using empirical methods. Recently, Fred Wilson has contrasted Bradley’s more nuanced position to that of Green and Pringle-Pattison, correctly noting that “...the point of idealism for Green ... was to establish that a natural science of human being is impossible,” in (Wilson 1999, 10). *Also see* (Wilson 1998, 9).

⁴ In the next generation, leading British philosophers like Russell would take their cue from the anti-psychologism not just of Frege, but perhaps as importantly of idealists like Green and Bradley (see Griffin 1996; Keen 1971) who participated in the debate I discuss in the paper. Note that the British debate is a counterpart to the better-known, *German* arguments over psychology’s scientific status. On the German debates, see (Kusch 1995).

⁵ Prominent mental scientists who participated in this debate included James, Alexander Bain, and a host of allies who often published in the British journal *Mind*.

the province of psychology. If I am right, notice that these presuppositions are not rational because they can be justified through any theoretical argument (whether intra- or extra-paradigmatic). They are rational in the manner of an ingenious invention.

The compliment I am paying James is much like the compliment one might pay an engineer who figures out how to build a better bicycle. For instance, in the 1890s bicycles began being mass produced with pneumatic tires—an invention (by John Boyd Dunlop) that made for greater traction and a smoother ride. Dunlop's new design was rational not because it revealed some fundamental truth about nature. It was rational because it provided an ingenious solution to problems inherent in older bicycle designs. Similarly, I want to claim that James's metaphysical postulates were rational in that they were an ingenious invention for solving a design problem—how to structure intellectual communities so as to quell the incessant squabbling between philosophers and early empirical psychologists.

In other words, James's metaphysical postulates provided the emerging science of mind with, as it were, greater traction and a smoother ride.

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