Philosophers and historians of philosophy have come to recognize that at the core of logical positivism was an attachment to prediction as the necessary condition for scientific knowledge.¹ The inheritors of their tradition, especially the Bayesians among us, continue to seek a theory of confirmation that reflects this epistemic commitment. The importance of prediction in the growth of scientific knowledge is a commitment I share with the positivists, so I do not blanch at that designation, much less employ it as a term of abuse.

Precisely expressing and conclusively establishing the claims of prediction as a necessary condition for certifying claims as increments of knowledge is a goal that has so far eluded us post-positivists. Philosophers know the problems well: defining a positive instance, distinguishing projectible from nonprojectible predicates, deciding whether retrodiction is as epistemically probative as prediction.² But I can’t help thinking that these problems are technicalities—important and arresting, but not impediments to embracing the positivist demand that increments in scientific knowledge withstand tests of predictive success.

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I have argued that, at a minimum, a science should show long-term improvements in the range of its confirmed predictions and in the precision of these predictions. Such improvement is not sufficient for a disciplines’ theories to count as scientific, but it is necessary. It is a constant source of amazement to me that this minimal claim is not only regularly challenged, but that it seems very much a minority view, within the philosophy of natural and the social sciences, and among other disciplines devoted to the study of science. The argument for the epistemic role of prediction is disarmingly simple, and can be found in Hempel’s general criterion of adequacy for explanations: “Any rationally acceptable answer to the question ‘why did X occur?’ must offer...

information which shows that X was to be expected – if not definitely... then at least with reasonable probability". 3

The reason explanations need to offer information that enables us to predict is that only such tests will enable us to discriminate explanations, and the theories that underwrite them with cognitive warrant, from explanations and theories we find appealing for merely noncognitive causes. For example, it is hard to deny the force of an explanation that trades on our common-sense conception of action as caused by desires and beliefs. The subjectively felt intelligibility that such explanations accord their explananda are undeniable, and the temptation to endorse them and the theories to which they advert is equally irresistible. But why suppose that allaying the psychological state of curiosity or providing the feeling of intelligibility is a criterion of adequacy for the warrant of an explanation or a theory? What is so special about the intellectual repose provided by an explanation of action that trades on a theory that we introspectively find attractive in our own cases? Surely the psychological fact that some explanations allay curiosity more completely than others is no more reason to endorse them as having cognitive merit than the claim that reduction to the familiar sets a relevant test of an explanation's merits.

Of course, if we simply deny that there is any such thing as cognitive merit, then we don't have to answer the question of what makes a psychologically satisfying explanation a warrantable one. We can be satisfied with the undeniable fact that some explanations are just better stories than others. This is in fact a view widely endorsed among proponents of post-modern theories of rhetoric, who reject the existence of normative epistemology and the claims of methodology. 4 Its intellectual origins are to be found in the works of Kuhn and Feyerabend, and its current philosophical spokesperson is Richard Rorty. 5 These sophistical views are difficult to argue against, since they recognize only the persuasive effects of explanations and not their cognitive force.

The requirement that the explanation, or the theory it embodies, be at least part of an intellectual enterprise whose predictive power is growing, or at least part of an enterprise that seriously honors the goal of such improvements, may seem a very weak and easily satisfied criterion for a theory that purports to be a contribution to human knowledge. It is far less demanding than the requirement that scientific knowledge requires the discovery of laws. For reliable prediction may