



The silence of the norms: The missing historiography of *The Structure of Scientific Revolutions*



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ABSTRACT

History has been disparaged since the late 19th century for not conforming to norms of scientific explanation. Nonetheless, as a matter of fact a work of history upends the regnant philosophical conception of science in the second part of the 20th century. Yet despite its impact, Kuhn's *Structure* has failed to motivate philosophers to ponder why works of history should be capable of exerting rational influence on an understanding of philosophy of science. But all this constitutes a great irony and a mystery. The mystery consists of the persistence of a complete lack of interest in efforts to theorize historical explanation. Fundamental questions regarding why an historical account could have *any* rational influence remain not merely unanswered, but unasked. The irony arises from the fact that analytic philosophy of history went into an eclipse where it remains until this day just around the time that the influence of Kuhn's great work began to make itself felt. This paper highlights puzzles long ignored regarding the challenges a work of history managed to pose to the epistemic authority of science, and what this might imply generally for the place of philosophy of history vis-à-vis the problems of philosophy.

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In history...expectations are far less precise, and there is correspondingly less agreement than in science about whether expectations 'fit the facts' and about the sorts of data relevant to their evaluation...The historian's problem is not simply that the facts do not speak for themselves but that, unlike the scientist's data, they speak exceedingly softly. Quiet is required if they are to be heard at all. (Kuhn, 1980, p. 183)

1. Introduction

A philosophical mystery, one cloaked by a methodological irony, shrouds a key development in contemporary philosophy of science. The mystery? How to account for the logic of explanation that underwrites the influence and status of Kuhn's widely celebrated and extensively studied *The Structure of Scientific Revolutions* (hereafter cited as SSR). What makes this a mystery? Consider the following irony: despite SSR's status, there exists no generally

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accepted specification of those features that an historical explanation ought to possess.¹ In this key respect, fifty years of debate regarding the merits of SSR has proceeded virtually without mention of the philosophical void regarding the topic of historical explanation. Almost all readers of SSR have started this mystery in the face for 50 years now without taking notice of or commenting on it.²

Indeed, the fact that the entire topic of historical explanation fell off the map of (analytic) philosophy decades ago compounds the mystery of how SSR could have been influential and the irony of its enduring impact. Just at a moment when philosophy of history arguably should have “taken off” as a core philosophical discipline, riding a wave of professional concern one might have expected Kuhn’s work to generate, discussion instead effectively ceases and the topic disappears. And even those reporting “the naturalists return” record no sightings or mentions of philosophy of history.

In this sense, the mystery runs deep. For it has managed (or so it seems) to elude detection even by those supposedly highly sensitized and trained to identify, analyze, and evaluate standards of explanation and argument. But why pursue this philosophical cold case—the unsolved and allegedly worrisome mystery of a philosophical topic gone missing? Why worry about the silence that surrounds questions regarding the norms of historical explanation? I suggest the following answer: breaking the silence should prove key to exposing still existing and important questions about the relation of history and philosophy, ones that presently go unasked and ignored in polite philosophical company. In order to reanimate interest in this mystery, I assemble reminders of its connection to a basic task of philosophy—to clarify for ourselves the grounds for what we take to be true, and so apparently shared but still implicit standards for rationally warranting beliefs.

2. The rise of SSR and the disappearance of analytic philosophy of history

Towards this end, it helps to recall how analytic philosophy of history comes to exist as a subfield. If one were to construct a type of genealogical chart, it would show analytic philosophy of history as the runt of a litter of topics that sprung from philosophy of science in its youth. Birth could plausibly be dated to coincide with

the publication of Hempel’s classic article, “The Function of General Laws in History.” (Hempel, 1942; see also Nagel, 1979[1961], especially the chapter “Problems in the logic of historical inquiry.”) Hempel there stipulates as a condition for the scientific/logical adequacy of an historical explanation that it contain a covering law. This effectively mandates the *de facto* exile of academic history from the realm of the legitimate sciences.³ Analytic philosophy of history, for the 25 years following Hempel’s article, by and large consists in critiques or defenses of the applicability of this model to historical explanation.⁴

Regarding the historical/philosophical context at the point when SSR first appears requires situating Kuhn’s work relative to Hempel and to Quine. Reading Hempel’s classic 1950 article, “Problems and Changes in the Empiricist Criterion of Meaning” alongside of Quine’s (1951) “Two Dogmas of Empiricism,” a striking feature emerges. One finds in Hempel’s article (see especially §5) not merely a recognition of the type of the holism that Quine so (in)famously promotes, but actually an embrace. Both acknowledge that holism radically broadens what counts as the unit of empirical significance with regard to explanation and testing in science as then philosophically conceived. Ironies abound here. On the one hand, Hempel betrays no anxiety that holism ultimately represents any principled problem for his favored analysis of the logic of science. On the other hand, Quine hypothesizes that holism makes it impossible to philosophically vindicate the verification criterion of meaning at the philosophical heart of positivism.

Kuhn for his part explicitly acknowledges Quine’s critique in “Two Dogmas” as a key influence, particularly the holism it ushers into philosophical prominence. (Kuhn, 2012, p. vi; see also Zammito, 2004) Kuhn’s particular narrative of a history of science powerfully illustrates how this shift in a conceptualization of the unit of empirical significance effectively upends all prevailing accounts of what supposedly explains the rationality of theory change in science. And one might then imagine that precisely this turn of events—the emergence of a narrative of the history of science that profoundly alters and constrains any philosophical account of how rational evaluation of scientific reasoning could proceed—would galvanize philosophical concerns about and research into the nature of historical knowledge and historical explanation. Yet, as Arthur Danto wryly notes, nothing of the sort happens.

¹ The University of Chicago Press now has on offer a 50th anniversary edition of *Structure* (Kuhn, 2012), featuring an introduction by Ian Hacking, who himself has been justly celebrated for his historical studies. Yet Hacking nowhere mentions issues of historical explanation in his generally laudatory discussion of Kuhn’s work and influence and despite his explicit acknowledgment of SSR as a work of history. (E.g., Hacking, 2012, p. x) A hint of why Hacking displays no interest in questions of specifically historical explanation emerges in the following remark by Hacking. “Thus I claim that Kuhn leads us into a ‘revolutionary nominalism’ which makes nominalism less mysterious by describing the historical processes whereby new categories come in to being. But I assert that a seemingly more radical step, literal belief in the creation of phenomena, shows why the objects of the sciences, although brought into being at moments of time, are not historically constituted. They are phenomena thereafter, regardless of what happens.” (Hacking, 1985, p. 119) Hacking’s focus on styles of scientific reasoning and processes of categorization suggests (and here I speculate) that, at least with regard to the natural sciences, historical inquiry represents nothing more than a rough analogue to a context of discovery. Styles of reasoning and processes of categorization of natural phenomena play the role for him analogous to a context of justification. On this view, there would then be nothing requiring anything that might be termed a ‘historical explanation’, or even anything (in Hacking’s terminology) characterizable as a “style” of historical reasoning, at least in the sense found in the natural sciences. Regarding the human sciences (however one draws that line), Hacking takes a different view. That is, with respect to categories for human kinds, a history of how these emerge and stabilize *does* constitute a key part of their explanation, unlike laboratory phenomena. Hacking’s scattered remarks on Foucault hint strongly of this view. “I think that we shall lose ourselves in confusion and obscurity for some time yet, in the so-called social and human sciences, because in those domains the distinction between word and thing is constantly blurred.... Here Foucault’s ‘archaeology’ may yet prove useful, ... at least to grasp the interrelations of ‘power’ and ‘knowledge’ that literally constitute us as human beings.” (Hacking, 1985, p. 124)

² Work by Alasdair MacIntyre constitutes the sole exception of which I am aware. I discuss his view below. In a review of the 50th anniversary edition that nicely emphasizes Kuhn’s naturalism, Bird (2012) offers in some respects a nice description of Kuhn’s philosophical targets and how SSR addresses them. However, Bird contents himself with observing that Kuhn’s approach to the topics was “multifaceted, involving history, psychology, philosophy, and sociology,” a combination that he acknowledges stood as “unusual” given the then prevailing norms for evaluating arguments in the empirical sciences. As Bird summarizes matters in this regard, “Kuhn’s arguments, especially as regards philosophical consequence, are often more implied than stated explicitly.” (Bird, 2012, p. 865) What Bird nowhere acknowledges, despite his recognition of key portions of Kuhn’s argument as historical, concerns how Kuhn succeeded in challenging and overthrowing other extant narratives of the history of science. For it is not as if SSR brought new facts to light; its novelty lies in its narrative structure regarding historical episodes already known and much studied. Bird’s article might lead an uninformed reader to imagine that no one prior to Kuhn has written a history of science.

³ The story adumbrated here simplifies the picture by excluding Popper’s influential intervention—*The Poverty of Historicism*. But Popper certainly never promoted history as a science. I address below questions of how debates about historical explanation sit within readings of Wittgenstein propagated so influentially from the late 1950s forward by philosophers such as Peter Winch.

⁴ Richard Vann, who served as executive editor of *History and Theory* for many years, uses as the epigraph for (Vann, 1995) the following statement by noted literary critic Frank Kermode: “It seems ... that philosophy of history is the business of those who teach novels.” Vann then observes, “Kermode’s view would have been considered bizarre indeed in 1950 [the hey-day of positivist debate]. In 1968 it was still avant-garde; by 1975 the problems that such a comment raises had moved to the forefront of debate in the philosophy of history in the English-speaking world. I shall try to show how, and in what institutional settings, this happened.” (Vann, 1995, p. 40)

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