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Coherent programme at last? Review of Seymour Mauskopf and Tad Schmaltz (eds.): Integrating history and philosophy of science: Problems and prospects. *Boston Studies in the Philosophy of Science*, vol. 263. Heidelberg: Springer, 249pp, €99.95

About 40 years ago Giere (1973), in a much noted review, criticized the attempt to combine philosophical with historical methods in the study of science as being “without a conceptually coherent programme”. In particular Giere found it difficult to see how a largely descriptive approach (history) could meaningfully inform a largely normative approach (philosophy) without committing the notorious naturalistic fallacy. Since then much ink has been spilled over the question of how the relationship between history of science (HS) and philosophy of science (PS) could (and should) most reasonably be construed.¹ The present volume constitutes the latest concerted effort in this endeavor. It is one of the strengths of this collection that, contrary to much other work on the topic, it really does try, consistently throughout all of its contributions, to elucidate the HS-PS relationship in one way or another. Whereas some contributions take a largely retrospective approach (Golinski, Miller, Caneva, Giere, Dear), others offer more ‘systematic’ accounts (Chang, Arabatzis, Fagan), and again others put their main focus on detailed case studies (Pietsch, Rickles, Schickore, Maienschain). The present review will focus on those contributions that confront important methodological issues in HPS in the vicinity of Giere’s challenge most directly.

Chang is well-known for his idea of HPS being ‘complementary’ to science: essentially, HPS helps to identify research avenues that main stream science has left to one side and that might nevertheless be deemed worthy of pursuit. HPS is a truly integrated discipline and it is therefore “difficult to see where philosophy ends and history begins or vice versa” (Chang 2004, 240). Yet in his book (233-4), and in slightly more detail in his contribution to the present volume, Chang does hint at how the HS-PS relationship could be disentangled in more detail in epistemological terms. Rather than viewing history as providing the ‘particulars’ and philosophy the ‘general’, whereby the former is supposed to support the latter, Chang suggests that the HS-PS relationship better be conceived of in terms of the ‘concrete’ and the ‘abstract’. For Chang this way of viewing the HS-PS relationship ‘transcends’ the ‘dilemma’ between writing “local histories” without any bearing on our “overall understanding of science” and *overgeneralizing* from a few isolated historical cases to general claims about science. Not surprisingly, the latter concern one finds particularly amongst historians. Yet it has recently been raised also by philosophers (Pitt 2001). With Chang’s proposal, there is no such concern. If one abstracts (rather than generalizes) Y from X one does not go beyond the information contained in X (110). When there are no “ready-made” philosophical concepts for describing a particular set of historical facts in more abstract terms, the HPS practitioner may invent new ones. As an example for the invention of a new philosophical concept Chang cites his related ideas of “epistemic iteration” and “progressive coherentism”, according to which one iteratively improves on previous, imperfect beliefs, and according to which there is no firm foundation for our knowledge, respectively. “History-writing”, Chang

¹ See Schickore (2011) for a comprehensive overview.

concludes, “can be a very effective method of philosophical discovery” (111).² But here the HPS practitioner does not stop. She rather must argue for the *cogency* of the abstracted concept before it can be applied to other historical contexts. “Successful application [of the abstracted concept] functions as confirmation”, Chang continues, “but without the presumption of universality in what is confirmed” (ibid.). The author of this review thinks it is at least questionable whether such views as coherentism and its off-shoots can really be described meaningfully in terms of abstraction. But before even assessing Chang’s resolution of the self-posed dilemma, one may ask whether the problem of overgeneralization in particular is really one worth addressing in as principled a fashion as Chang attempts. First, it is not clear why generalizations *per se* should be particularly problematic in the context of HPS. If it is thought to be problematic that generalizations may turn out wrong then what is being pondered, really, is nothing but the problem of induction. But there is no reason why the problem of induction should stifle HPS more than it does any other empirical discipline. If, on the other hand, it is being criticized that, as a matter of fact, philosophers frequently form generalizations that turn out to be false, then the criticism is a weak one. Chang does not mention any examples to support such a claim. Historians do customarily cite Kuhn’s views as being refuted by historical evidence, but more recent HPS work exhibits much more cautious and more local generalisations.

A much more interesting problem for the HPS approach is the abovementioned one highlighted by Giere in 1973. In subsequent years Giere made himself a name for defending naturalism in the philosophy of science (Giere 1985). In his short contribution to the present volume Giere reminisces on the trajectory that took him from his early critique to an embracement of descriptive methods in philosophy. Very much like in Laudan’s normative naturalism (Laudan 1977, 1986), rationality in Giere’s naturalism is construed conditionally, not categorically: *if* one’s goal is G, it is rational for one to pursue certain means M to achieve G. Accordingly, one *ought* to pursue M in order to achieve G. The task of the philosopher is it to extract these goals from scientific practice; hence naturalism. Fagan’s contribution to this volume—undoubtedly the one with the most philosophical oomph—can be read in continuation of this literature, whereby Fagan takes instrumental rationality to the arena of social epistemology.

Fagan adopts an instrumentalist account of rationality as a minimal condition for rational social action: social groups “share goals” which the participants try to achieve by “coordinated means” (226). Although Fagan does not state this premise explicitly, presumably, group actions that contribute to achieving the shared goals, in accord with the above-mentioned naturalistic accounts, are to be deemed rational. With this “minimal consensus framework”, Fagan hopes to escape the self-posed problem of “epistemic relevance” of historical case studies to philosophical theorizing: “Ideal epistemic standards” that preclude in an *a priori* fashion any social concerns, according to her, are “arbitrary and *ad hoc*” (224). “*A priori* arguments in support of one partition over another”, Fagan continues, “cannot settle the matter since what is at issue is the *application* of epistemic ideals to our practices, not the cogency of those ideals as such” (224; added emphasis). Further, “case studies in normative epistemology show (at best) that an epistemic ideal applies to our scientific practices relative to a partition of those practices

² In fact Chang goes even further than that and claims that HS is even necessary for PS (and vice versa). But this claim is way too strong. Of course good PS is perfectly possible without HS: one may very well study *current* scientific practices instead (cf. Giere 1973).

into epistemically relevant and irrelevant aspects”, which she deems question-begging (223). Another extreme, according to Fagan, would be to pick out certain historical cases as “exemplary” to which our norms would have to be wielded. For Fagan, this would “concede [too much] to descriptivism” (224). Fagan portrays her own abovementioned approach as avoiding either extreme.

Although normative naturalism ‘social group-style’ is a viable option as far as I can see (although one may wonder what it really adds to e.g. Laudan’s normative naturalism), Fagan’s arguments against standard approaches do not succeed. Suppose we’re interested in theory-choice in science. Suppose further that the theory of interest were to be accepted by practitioners *only* because it, say, “helped them to ply their trade more profitably” (Pickering 1984). Our ‘epistemic ideals’ tell us that the theory *ought not* to have been accepted; the only good reasons for accepting a scientific theory (epistemologically speaking) pertain to the theory-evidence relationship. That particular case would therefore be irrelevant to our epistemic accounts of theory choice in science. But this is neither arbitrary nor ad hoc. The relevance criteria follow directly from sound normative considerations. If social concerns ought to inform our epistemological views, then we need to be told a good story as to *why* this should be so. But also Fagan fails to do that. With regard to the ‘epistemic relevance’ problem Fagan, ironically enough, herself picks her case study of blood stem cell research because it is “well suited” from the point of view of her minimal consensus framework. In other words, the “relevance relation” of historical facts, just like in standard historical case studies, is determined by Fagan’s philosophical account. But as long as the historical information being used is genuine and not feigned à la Lakatos, there is nothing bad about that (cf. Franklin et al. 1989): deeming parts of scientific practice relevant to philosophical questions about science rather than others does not affect in any way whether or not the facts support certain philosophical claims (for this is an entirely contingent matter).

Overall, then, although the present volume does contain attempts to address concerns about the HPS method that are often aired, it fails to convince that some of the considered problems, such as overgeneralization or lack of contextualization, really do deserve the attention that they receive. Yet the present volume does have other virtues. It does contain two quite substantial (although partially overlapping and at times debatable) histories of the scholarly discipline of HPS (Golinski, Miller). It is also contains the interesting information that (whatever the respective reasons) the integration of HPS is very much driven by philosophers rather than by historians, that intellectual (rather than social) HS nowadays is being marginalized into HPS departments (Miller), and that even the early pioneers of intellectual HS, such as Alexander Koyré were educated philosophers (Mauskopf and Schmaltz). A number of contributions take a rather personal tone, thereby giving the reader an interesting insight into the mindsets of HPS practitioners which one wouldn’t find in standard scholarly publications.

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