Studies in History and Philosophy of Science 58 (2016) 85–97

Contents lists available at ScienceDirect

Studies in History and Philosophy of Science

journal homepage: www.elsevier.com/locate/shpsa

Epigenesis in Kant: Recent reconsiderations

John H. Zammito

Department of History, Rice University, Houston, USA

ARTICLE INFO

Article history:
Available online 14 April 2016

Keywords:
Jennifer Mensch;
Immanuel Kant;
Caspar Friedrich Wolff;
Epigenesis;
Preformation;
Origins of pure reason

ABSTRACT

Epigenesis has become a far more exciting issue in Kant studies recently, especially with the publication of Jennifer Mensch's *Kant' Organicism*. In my commentary, I propose to clarify my own position on epigenesis relative to that of Mensch and others by once again considering the discourse of epigenesis in the wider eighteenth century. Historically, I maintain that Kant was never fully an epigenesist because he feared its materialist implications. This makes it highly unlikely that he drew heavily, as other interpreters like Dupont and Huneman have suggested, on Caspar Friedrich Wolff for his ultimate theory of "generic preformation." In order to situate more precisely what Kant made of epigenesis, I distinguish his metaphysical use, as elaborated by Mensch, from his view of it as a theory for life science. In that light, I raise questions about the scope and authority of philosophy vis a vis natural science.

It is problematic to leave the life sciences out of the account of the development of Kant's thought. Notwithstanding the eminence of his reconstructions, Michael Friedman's focus upon "exact sciences"—that is, those that could be formulated mathematically—has left some essential issues unexamined by excluding the life sciences (Friedman, 1992). My own investigations have centered on the *external* relation of Kant to the life sciences of his time, that is, issues in the history of science (Zammito, 1998). But there are *internal* issues, as well, especially with reference to "empirical laws" and the "unity of the order of nature" in Kant's critical philosophy (Buchdahl, 1971). Taking Kant's consideration of life science into account in construing the development and the warrant of his philosophical system can bring these important issues to the fore (Zammito, 2003).

A new generation has added enormous brio to the endeavor to bring biology back in to Kant studies.[1] They are represented in an important anthology, *Understanding Purpose: Kant and the Philosophy of Biology*, edited by Philippe Huneman and published notably under the auspices of the North American Kant Society (Huneman, ed., 2007b). His own monograph, *Métaphysique et biologie*, is a major contribution (Huneman, 2008). Rachel Zuckert's *Kant on Beauty and Biology* has offered rich new insight (Zuckert, 2007). Ina Goy and Eric Watkins have published a very important recent anthology, *Kant's Theory of Biology*, and Hein van den Berg has added an extended monograph: *Kant on Proper Science: Biology in the Critical Philosophy and the* Opus Postumum (van den Berg, 2014; Goy & Watkins, 2014). Two other anthologies provide considerable material along these lines: Otfried Höffe, ed., *Immanuel Kant: Kritik der Urteilskraft*, and Ernst-Otto Onnasch, ed., *Kants Philosophie der Natur* (Höffe, 2008; Onnasch, 2000). In addition, of course, there have been many penetrating article contributions on aspects of the problem (Beisbart, 2009; Breitenbach, 2008, 2009; Duchesneau, 2000; Fisher, 2014; Flasch, 1997; Fricke, 1990; Ginsborg, 1987, 2006; Ingensiep, 2006; Kreines, 2005; Steigerwald, 2010; Teufel, 2014; White, 1987). Jennifer Mensch has added a particularly provocative new study, *Kant's Organicism*, which will be a primary focus of my considerations, here (Mensch, 2013).

In the wake of all this new work, the life sciences have now retrieved a prominent place in understanding Kant and his philosophical system. The problem is how to incorporate all this without stumbling upon serious incongruities. In my view, Kant thought a lot about the life sciences, but this was not always salutary—for the coherence of his own system or for the pursuit of those sciences themselves (Zammito, 2009, 2010, 2011a, 2011b). To situate this at a

E-mail address: zammito@rice.edu.

[1] Many decades ago, Phillip Sloan and Timothy Lenoir made pioneering efforts. See: Sloan (1979) and Lenoir (1980, 1989).

http://dx.doi.org/10.1016/j.shpsa.2016.03.003
0039-3681/

more general theoretical level, it has been no easy matter to establish what the proper relations between natural science and philosophy should be in the modern intellectual world (Buchdahl, 1969). We face a central question about the warrant and scope of philosophy of science. Is its task to *prescribe* or to *elucidate* scientific practice? (Zammito, 2004) Locke famously but perhaps rather disingenuously claimed that philosophy should serve strictly as "underlabourer" to the natural sciences (Locke, 1996, 3). Kant, I believe, intended philosophy to be *law-giver* for them. That tradition has carried forward through Neo-Kantianism to Mach, Carnap, Hempel and Popper in more recent times. Still more recently, this view came to be challenged flamboyantly by Kuhn and Feyerabend, and more subtly by Quine and Sellars (Zammito, 2004). The core of contemporary philosophical naturalism lies, in my view, in deflating the claims of philosophy to epistemic sovereignty over natural science (Callebaut, 1993; Rouse, 1996a, 1996b, 2002; Zammito, 2008).

I would like to bring this perspective to the appraisal of Kant's vexed relation with the life sciences of his time, drawing on the in-itself quite vexed notion of *epigenesis* in the eighteenth century. Before turning explicitly to the notion of epigenesis, let me elaborate on Kant's relation with the life sciences of his time in terms of three entanglements in the web between philosophy and science. First, Kant was of course principally a philosopher, indeed one of the most important founders of philosophy of science in the technical sense. Thus he offered philosophical prescriptions for what life science should become. Historically *and* philosophically, I suggest, we must distinguish the self-constitution of a research community and its operating principles from any meta-level consideration of the ultimate warrant or definitiveness of its claims articulated by philosophy of science. Second, while clearly concerned with the latter questions, Kant also took himself to be a participant empirical scientist. To be sure, the very term "scientist" had not yet been invented, but the German term *Naturforscher* was in common use and carried most of the relevant features (Adickes, 1924). I take it that what a *Naturforscher* of the eighteenth century proposed to offer to the research community for appraisal were specific, empirical knowledge-claims about the natural world, and this Kant did, offering concrete hypotheses about the natural world, and more specifically, about the life world.

Thanks to the work especially of Jennifer Mensch, we need to add a third, rather remarkable thread to this skein of relations between natural science and philosophy in Kant, namely his appropriation of concepts from empirical science for use in the construction of the system of his critical philosophy. The preeminent instance of this is at B167 of the *Critique of Pure Reason* which evokes an "epigenesis of pure reason."[2] Epigenesis is the crucial concept for Mensch, as it is for my own considerations, hence it will be central to what follows. But equally salient, as Mensch uses to considerable effect, is the sustained analogy Kant offered, in the closing sections of the Transcendental Dialectic of the first *Critique,* between the systematicity of reason and the organismic holism of life forms (Kant, *KrV*, A853/B862). Epigenesis and organicism are somewhat distinct, conceptually, but they proved equally central to the emergent life sciences of the eighteenth century and, as Mensch now alerts us, to Kant's metaphysical adventures with pure reason.

In *Kant's Organicism*, Mensch argues that Kant was attracted by the crucial importance of *self-formation* in embryology, yet "the epigenesis of reason … was far more radical than the one Kant was willing to accord natural organisms." (Mensch, 2013, 15) Indeed, while Kant *never* believed that epigenesis could succeed as empirical life science, paradoxically he thought it *could* be used to explain the self-constitution of reason and the warrant for knowledge. That is the essential argument of Mensch's work: "Kant embraced epigenesis as the model for understanding the *metaphysical* generation of reason and the categories alike." (Mensch, 2013, 214 fn 283) "The very basis of Kant's long-standing attraction to epigenesis was its ability to position the mind's independence from both sense and God as suppliers of mental form." (Mensch, 2013, 214-15 fn 283) But what about the life sciences themselves? Mensch writes: "Kant was consistent … in rejecting positive discussions of epigenesis as a phenomenon of nature." That is, while Kant seems to have thought it was "reasonable to choose from organic models of generation when describing the epigenesis of reason, he would never have suggested that such a model was definitively at work in the actual generation of natural organisms." (Mensch, 2013, 141) He "did not believe we could make anything like an identical claim regarding the laws by which an actual organic being might work." (Mensch, 2013, 141) Kant took that to be an impossible endeavor. "He was pessimistic regarding any possibility of progress in generation theory … [E]mbryogenesis … simply exceeded the limits of our claims to knowledge of such things." (Mensch, 2013, 53) That is, "the operating principles of the organism would simply never be revealed in an empirical investigation." (Mensch, 2013, 144)

In my terms, what Mensch demonstrates is that Kant arrogated a biological theory from its own precinct as empirical science, in which he declared it theoretically unjustified, for a *metaphysical* theory of pure reason, where he took it to be not only justified but indispensable. Indeed, he came to allege that the very biological formulation he annexed had all along been parasitic on reason's own self-conception, thus working by illicit analogy, or, in his terms, "subreption." (Kant, *KrV* A643/B671; Mensch, 2013, 70, 75-76, 87, etc.) As Mensch puts it, "when reason saw organic activity in nature, according to Kant, what it was really looking at was itself." (Mensch, 2013, 144) This is subreption, all right, but, I suggest, in the inverse direction from what Mensch and Kant privilege. More to my purpose, it *obviates in principle* central concerns of life science.[3] Thus, I confess, I part company sharply with Mensch about the fruitfulness of Kant's approach for the life sciences (Mensch, 2013, 151; 216 fn 287), and I will return to that in my concluding remarks. I will suggest it does violence to the proper exigencies of the relationship between science and philosophy. Before I get to that undoubtedly heretical claim, I wish to begin by suggesting that this "analogy" from mind to organic life looks rather like a misrepresentation, on Kant's part, of the historical course of his own process of thinking. To grasp this more concretely, let us reconsider the notion of epigenesis in the scientific world of the eighteenth century from which Mensch and I concur that Kant annexed it.

[2] "There are only two ways in which we can account for a *necessary* agreement of experience with the concepts of its objects: either experience makes these concepts possible or these concepts make experience possible. The former supposition does not hold … There remains, therefore, only the second supposition—a system, as it were, of the *epigenesis* of pure reason—namely, that the categories contain, on the side of the understanding, the grounds of the possibility of all experience in general." (Kant, *KrV*, B167 [1787]).

[3] I have been criticized for taking so negative a view of Kant's philosophy of biology by Thomas Teufel and Hein van den Berg. Their sturdy efforts to reconstruct a legitimate Kantian position in biology have earned my serious attention and I have learned a great deal from their arguments. I remain unconvinced, however, that Kant offered a coherent program for the life sciences either of his time or *a fortiori* for our own.