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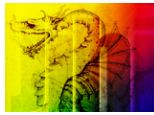
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Review-Interview with Stephen Gaukroger

by  
Charles T. Wolfe



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# Review-Interview with Stephen Gaukroger

Charles T. Wolfe \*

*Stephen Gaukroger's The Natural and the Human: Science and the Shaping of Modernity 1739-1841 (Oxford: Oxford University Press, 2016, 416 p., £30.00, ISBN 9780198757634) has a much more pronounced Germanic flavor than the previous ones, The Emergence of a Scientific Culture (2006) and The Collapse of Mechanism and the Rise of Sensibility (2010). If the earlier books were 'Gaukroger meets the Scientific Revolution' or 'Gaukroger meets the Enlightenment', this one is 'Gaukroger meets the Two Cultures' (or the problem of Natur- and Geisteswissenschaften) and moreover, Gaukroger meets Herder. Of this book and its background we have discussed with the author.*



**O** STEPHEN GAUKROGER has taken his narrative of the emergence of modern science and its crystallization as a source of values into new territory in this volume, the third of a planned five (or six, depending on which Preface to which volume one reads; we'll get back to that). In the first two volumes, *The Emergence of a Scientific Culture* (2006) and *The Collapse of Mechanism and the Rise of Sensibility* (2010), which went from the late Scholastic period and the Scientific Revolution to the Enlightenment, Gaukroger, moving to a 'macro'-level version of his influential analyses of the emergence of the natural philosopher as a *persona*, described how 'science' emerged as a generator of cognitive values or cognitive norms. Now, in the volume under review, he

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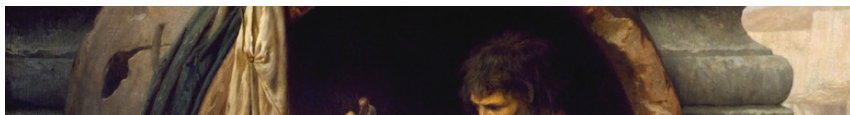
turns to the emergence of the human sciences—in a rather dialectical narrative in which science shifts from requiring legitimation to becoming a source of legitimation. The official ‘signposts’ of *The Natural and the Human* are Hume’s *Treatise of Human Nature* (1739) and Feuerbach’s *Wesen des Christentums* (1841).

Indeed, this volume has a much more pronounced Germanic flavor than the previous ones, including because it tackles topics such as ‘philosophical anthropology’ and the *Popularphilosophen*, although we also get chapters on Condorcet’s social arithmetic and the decidedly more French (indeed, more *montpelliérain*) ‘anthropological medicine’. If the earlier books were ‘Gaukroger meets the Scientific Revolution’ or ‘Gaukroger meets the Enlightenment’, this one is ‘Gaukroger meets the Two Cultures’ (or the problem of *Natur-* and *Geisteswissenschaften*) and moreover, Gaukroger meets Herder.

Some of the material is an extension of analyses found in the previous volume (the shifts in matter theory, the changes wrought upon our ontology but also our picture of science by work on electricity) or even its predecessor (the problem of mechanism as a project and its sometimes grandiose failures). But there is a very new issue here: given the narrative of collapse in the previous volume, “what kept [science] afloat between the middle of the 18<sup>th</sup> and the middle of the 19<sup>th</sup> centuries, when it began to form an intimate link with technology?” (1). The answer lies in the naturalization of the human realm, which, Gaukroger argues, allows for a new legitimation of the role of science. Except that

it was not the natural sciences—which had been regarded as the core of scientific activity not just for mechanists but for all natural philosophers up to the middle decades of the eighteenth century, especially the areas of mechanics and astronomy—but the newly emerging human or moral sciences that now came to the fore, providing the ground on which new scientific conceptions were forged, in the process displacing traditional religious, humanist, and other approaches. (7)

It is important to Gaukroger’s story and to its focus on the social and human sciences that “the natural sciences were not the only forms of naturalizing discourse. They did not provide the only models for naturalization, nor were they the only naturalizing resources drawn upon” (117). Indeed, this enables him to paint a very original and stimulating picture of what naturalization meant, and could mean in the eighteenth century (including a contrast with the 17<sup>th</sup> century’s concern with quantification).



What does naturalization mean in Gaukroger's vocabulary? Definitely not Quinean naturalization or even its weaker, more pluralistic cousin, Deweyan naturalism, in which philosophical and scientific work are allowed to modify one another. Naturalization *sensu* Gaukroger is more broadly about the promotion of empirical explanations: "the translation of questions that had previously been taken as exclusively conceptual or a priori matters, and had been treated accordingly, into a form in which empirical evidence becomes appropriate to answering these questions" (117). And this allows him to discuss such projects as the natural history of man, philosophical anthropology and anthropological medicine as instances (or instantiations) of naturalization (where the medical variant deals with nervous sensibility, while philosophical anthropology deals with 'cognitive sensibility', in Gaukroger's reconstruction), but also the Feuerbachian naturalization of religion into a kind of emotional / affective sphere, expressed in the famous slogan "The true meaning of theology is anthropology" (cit. 340); "Man was already in God, was already God himself, before God became man, i.e. showed himself as man" (cit. 341). Ultimately, "the most powerful naturalizing resource (...) was history" (351)<sup>1</sup>. Precisely, when naturalization is undertaken in the human and social sciences, it is not in the name of reductive mechanics but of an integration into historical knowledge. Naturalization and historicization come to mean much the same thing (as is observed also of Mandeville, in Chapter 6).

Gaukroger does not leave out some of the problematic cases of 'naturalization of the human' (craniology, racial theory and so on), but he does not explore the direct connection between Enlightenment materialism and 'physical anthropology', which could have further supported some of his criticisms of the former movement.<sup>2</sup> With respect to morality, the analysis of models of collec-

<sup>1</sup> Bohang Chen helped me see this point.

<sup>2</sup> It would be profitable to read *The Natural and the Human* alongside more specialized work such as the volume *The Anthropology of the Enlightenment*, edited by Larry Wolff & Marco Cipolloni (Stanford: Stanford University Press, 2007), Justin E.H. Smith's recent study *Nature, Human Nature*,

tive behavior in Chapter 6 is interesting, although familiar to readers who have previously encountered works such as Hont and Ignatieff's *Wealth and Virtue*.<sup>1</sup> One thought this reviewer had is that it would have been intriguing to contrast some of the analysis of Mandeville, Rousseau, Condorcet et al. with La Mettrie's ethical and social theory in the *Discours sur le Bonheur* (or *Anti-Sénèque*).

*The Natural and the Human* shares an important feature with the influential work of Peter Hanns Reill and John Zammito: it tackles the *Aufklärung* and the *Lumières* together (in addition to a good deal of 'British' material, in Gaukroger's case). Here, we find for instance a stimulating and rather critical discussion of Kant. Gaukroger builds on Zammito's analysis of Kant as an outdated, rearguard figure who actually slowed down developments in certain crucial fields due to his commitment to a picture of science as basically Newtonian rational mechanics: thus chemistry and life science but also anthropology were treated as subaltern or somehow undeserving of the title of science (200-216).<sup>2</sup> If Kant is something of a villain in the story, then the hero (in this part of the book, as he partly is in the discussion of myth as well) is Herder. In the 'anthropology' discussion, Herder is very much a hero, and as such is opposed to a variety of other figures and positions, from Kant to materialists such as La Mettrie, as also noted in the interview.

On the one hand, Herder's understanding of the history of languages as a his-

*& Human Difference: Race in Early Modern Philosophy* (Princeton: Princeton University Press, 2015), and Aaron Garrett's earlier survey piece "Human Nature," in *The Cambridge History of Eighteenth-Century Philosophy*, ed. Knud Haakonssen, vol. 1 (Cambridge: Cambridge University Press, 2006). Similarly, with regard to the emergence of the human sciences, Gaukroger doesn't discuss the classic by Wolf Lepenies, *Die drei Kulturen. Soziologie zwischen Literatur und Wissenschaft*, 1985, translated as *Between literature and science: the rise of sociology*, trans. R.J. Hollingdale (Cambridge: Cambridge University Press; Paris: Editions de la Maison des sciences de l'homme, 1988).

<sup>1</sup> I. Hont and M. Ignatieff, eds, *Wealth and Virtue: The Shaping of Political Economy in the Scottish Enlightenment* (Cambridge: Cambridge University Press, 1983); see also Hont's final collection, *Jealousy of Trade: International Competition and the Nation-State in Historical Perspective* (Cambridge, Mass.: Harvard University Press, 2005).

<sup>2</sup> An interesting contrast case for Gaukroger's position regarding Kant is what has come to be known as the 'Lenoir thesis', regarding Kant's influence on Blumenbach and other major German naturalists / biologists in the late 18<sup>th</sup> and early 19<sup>th</sup> centuries (see Timothy Lenoir, *The Strategy of Life. Teleology and Mechanism in Nineteenth Century German Biology*, Chicago: University of Chicago Press, 1982). However, Lenoir's idea has come under major criticism in the past decades, including from Zammito.

tory of thought, which in turn is a history of reason, is presented by Gaukroger as both “far more subtle” than the “‘triumph of the present’ type history of thought offered, for example, by Diderot and D’Alembert in the preliminary ‘Discours’ to the *Encyclopédie*, or by Condorcet in his *Esquisse*,” and “far more plausible and fruitful than the materialist reductions of the mind offered by La Mettrie and Helvétius” (171). And with respect to the naturalization theme running through the book, Herder’s model is described as “successful naturalization,” because “reductionist strategies play a far less significant role” in it (172). Herder’s way of describing but also defending the autonomy of thought is seen as more successful here than the rejection of reason in favour of sensibility, along Rousseauian lines, or La Mettrie’s reduction of thought to a form of physiological activity (183). Clearly, the naturalization theme is a major one in the book, and the extent to which it can be distinguished from reductive strategies.

On the other hand, Gaukroger contrasts Herder with Kant with respect to their different projects, indeed, different “strategies of explanation” (208). Kant’s attack on what he calls Herder’s hylozoism reveals, in Gaukroger’s view (and here Zammito’s work is influential) an awkward attitude towards developments in the life sciences. For Kant, “naturalization as a programme of explaining human behaviour is simply misconceived” (*ibid.*), although he does not rule out “piecemeal and very limited forms of naturalistic explanation in the case of race and physical geography” (*ibid.*). But these must be speculative ideas for Kant, not scientific ones. In contrast, naturalization *sensu* Herder is “a fruitful strategy”: “one can see how it might be part of a more general programme, how it might be able to draw on a wide range of new resources, and how it might be connected with other developments” (*ibid.*). Ultimately, Kant is either too aprioristic dealing with the sciences (“For his argument to work, [Kant] needs to align the kind of certainty that he believes derives from a priori demonstration with the kind of fundamental standing due to a discipline that explains the behaviour of a body in terms of its material constituents. But no such alignment is possible,” 204) or is caught in the peculiar, perhaps never well-defined status of his anthropology (“it is remarkable not only how poorly integrated his anthropology is into his critical philosophy, but how little he is able to do with it, when compared to Locke’s use of the travel literature in the first Book of the *Essay*, for example, where an analogous purely practical and descriptive



literature is used to open up deep problems for moral theory and, ultimately, for epistemology,” 214).

The absence of Foucault—whether Gaukroger would agree or disagree with him is another matter—is sometimes surprising, including when the book turns to the way in which philosophical anthropology can ‘morph’ into the aesthetization of life, in the final chapter. A topic that came to mind to this reviewer but that does not seem to be discussed as such here, is ‘psychologism’, that is to say, the articulation of naturalism and psychology. For the 19<sup>th</sup> century is also the century of psychophysics and ‘naturalism’ in the form in which Husserl denounced (as more or less synonymous with ‘psychologism’). That seems an important episode in ‘naturalizing the human’<sup>1</sup>—granted, this is not really a work on the 19<sup>th</sup> century but it seems like a topic that could have been even briefly discussed.

This book also has any number of useful, clear, synthetic side discussions, which belong to the general narrative but are somehow synthetic to themselves, like the nice discussions of Mesmerism; of the fortunes of anthropology as a discipline (including its peculiar standing in Kant’s work); of topics from the history of science such as Buffon on the cooling of the earth, and from ‘philosophy’, such as the notion of sympathy (this is one of the rare works which seems to explicitly tackle the relation between moral sensibility and physiological sensitivity in the 18<sup>th</sup> century).



One quibble a Wolffian scholar might have is the overly general discussion of Wolffianism: “Whereas in the Wolffian tradition—and that of the German Enlightenment, the *Aufklärung*—reason is embodied in metaphysics, in the French *philosophe* tradition reason or rationality is embodied in science” (24). Wolff also had other systems, including a system of mathematics and current Wolffian scholarship seems to treat his metaphysics as less aprioristic than the common

<sup>1</sup> See Martin Kusch, *Psychologism* (Routledge, 1995).

view. Another concerns materialism, which Gaukroger describes quite strongly as “intrinsically implausible” (6) in its projects (why? after all, the natural history of man which he discusses favorably later on in the book was not exactly a project foreign to Diderot). He also emphasizes that “Materialism and reduction to the natural sciences play a very small and inessential role in the forms of naturalization that shaped the transformation of the study of human psychology and conduct into empirical disciplines in the second half of the 18<sup>th</sup> century” (351), and this may be less debatable—indeed, I’m reminded of a nice comment by Gary Hatfield about the emergence of psychology as a science, to the effect that

In the standard narrative, the heroes of the Enlightenment are materialists. If psychology is to be made a science, the story goes, mind must be equated with matter and thereby rendered subject to empirical investigation. *The problem is that no one bothered to tell the early practitioners of natural scientific psychology that they had to be materialists in order to be natural scientific psychologists.* In point of fact, of all the major 18<sup>th</sup> century authors who made contributions to the development of psychology, only Erasmus Darwin allowed that mind might be material; 19<sup>th</sup> century founders of psychology, including Wundt, Helmholtz, Lotze, Ebbinghaus, James, Munsterberg, and Binet, banished the very question from scientific psychology.<sup>1</sup>

But then one might ask Gaukroger if he is providing a narrative of scientific development. That is, it may be tricky to judge La Mettrie or Kant strictly in terms of their belonging or not to an ‘onwards march of science’. Another, minor quibble with regards to materialism concerns Gaukroger’s insistence that anthropological medicine was never a form of materialism (295): Cabanis, for whom “le moral n’est que le physique considéré sous certains points de vue plus particuliers,”<sup>2</sup> and who tried to differentiate between his, medically informed materialism and a more naïve mechanistic materialism of the previous century, would have disagreed.

Regardless, this is again an impressive work, which perhaps is best read with its predecessor *The Collapse of Mechanism and the Rise of Sensibility* (together,

<sup>1</sup> G. Hatfield, “Psychology as a Natural Science in the Eighteenth Century,” *Revue de Synthèse*, 115 (1994), 375-391, here, 390 (emphasis mine).

<sup>2</sup> P.-J.-G. Cabanis, *Rapports du moral et du physique de l’homme* (1802), XII<sup>e</sup> Mémoire, “Des tempéraments acquis”, 38.

they would produce a volume as thick as Hans Blumenberg's best, to which they can in a sense be compared, although they lack the heavy phraseology and are rather more sharply argued).

Perhaps due to too much exposure to the Frankfurt School in the early years of my studies, I was surprised that some of the dangers inherent in a 'science of man' are not discussed here: not so much the obvious cases such as the racism in physical anthropology, as the sort of mood or situation so well captured by La Mettrie when he wrote, "He who chooses man as an object of study must expect to have man as an enemy."<sup>1</sup> I'll raise this again in my questions to the author.



**1** IN THE *Acknowledgments*, I was struck by the following statement: "In continuing this project into the late 18<sup>th</sup> and early 19<sup>th</sup> centuries, my attention has turned to the human sciences, and I have been taken back to the political and intellectual interests of my student days in the 1970s, (...) Although I haven't exactly returned to these interests here—the nature of politics has changed so radically since then as to make that inconceivable—they have helped over the years to shape my sense of what the point and value of intellectual enquiry is" (v). Could you expand on this a bit? I found it compelling and it gives a sense of background quite different from what readers who are always arguing about either your microanalyses (as compared to some other current scholar) or the big picture in your project. Also, it hints at a sociopolitical dimension which isn't really present in your type of analysis, as far as I can tell. I have a similarly general (or non-historical) question at the end, as you'll see.

In the early to mid-1970s, I was in a reading group with others sympathetic to Althusser. We read Bachelard, Koyré, Duhem, Foucault, Saussure, Jakobson, Levi-Strauss, and Lacan. One distinctive thing about Althusser's reading

<sup>1</sup> J.O. de La Mettrie, *Discours sur le bonheur*, in La Mettrie, *Œuvres philosophiques*, ed. F. Markovits, 2 vols. (Paris: Fayard, coll. "Corpus", 1987), II, 269.

of Marx was its structuralism, which meant reading history was out as the core of Marxism: the study of society was synchronic rather than diachronic. When I subsequently came to think about these questions in the context of the history and philosophy of science, starting a PhD on Bachelard in 1974, it seemed that what I had read offered an obvious way out of the prevalent internalist/externalist debate in the history of science. To think there was one preferred way of pursuing the history of science (or intellectual history more generally) was ridiculous. What resources one drew on, whether social or technical, whether long-term or short-term considerations, etc., was determined by the kinds of questions that one was asking and what kinds of answers one was seeking. This extends to the question of micro versus macro. One doesn't do the history of science per se, one uses the history of science to answer particular well-formed questions. Without that one is just doing antiquarianism.

**2** AS REGARDS *this volume in relation to the series, could you situate it briefly in the series and perhaps say a word on what happens next? I believe in one of the volumes it is described as a 5-volume series and now as a 6-volume series?*

I thought of the volumes as chronological account of the emergence of a scientific culture, but this has taken as more focused theme in the volumes, and they are now on a temporally located theme. The fourth will be on science and civilization between the *Encyclopédie* and WWI. It may be the last volume, but it's too early to say at the moment: I don't have a manageable issue for post WWI.

**3** THE BIRTH *of the human / social / moral sciences. How does your story fit with the emergence of the Geistes- versus Naturwissenschaften distinction (or with the two cultures distinction, which may not be synonymous with the former)?*

*In your discussion of Feuerbach et al. as a kind of naturalization through history, would you agree that naturalization and historicization come to mean much the same thing (my formulation)?*

Historicization is a form of naturalization on my definition because it takes questions that would otherwise have been formulated in purely conceptual or

doctrinal terms and poses them in a way that makes empirical evidence relevant to/crucial to answering them.

I haven't thought about the *Geistes-/Naturwissenschaften* distinction yet. It needs to be placed in the context of attempts to make use of/rescue a Kantian conception of intellectual inquiry. I might deal with this in vol 4, but I'm not sure yet.

**4** REGARDING *some of the potential dangers in a science of man, I couldn't help but think of this great line by La Mettrie (in his work on moral philosophy): "He who chooses man as an object of study must expect to have man as an enemy." Does this fit at all with your story? Any comment on it?*

On the dangers of a science of man, one question I want to deal with in the present volume concerns the shaping of the population into the kinds of person who can occupy a scientifically-modelled form of civilization. The 1933 *Science of Man* prospectus of the Rockefeller Foundation, one of the largest sources of funding for the sciences in the U.S. at the time, sets out one explicit version of such a programme:

Can man gain an intelligent control of his own powers? Can we develop so sound and extensive a genetics that we can hope to breed, in the future, superior men? Can we obtain enough knowledge of the physiology and psychobiology of sex that man can bring this pervasive, highly important, and dangerous aspect of life under rational control? Can we unravel the tangled problem of the endocrine glands, and develop, before it is too late, a therapy for the whole range of mental and physical disorders which result from glandular disturbances? Can we resolve the mysteries of the various vitamins so that we can nurture a race sufficiently healthy and resistant? Can we release psychology from its present confusion and ineffectiveness and shape it into a tool which every man can use every day? Can man acquire enough knowledge of his own vital processes so that we can hope to rationalize human behaviour? Can we, in short, create a new science of man?

I think this brings out at least one set of dangers very strikingly: it is so unself-conscious.



**5** CONCERNING HERDER: *he seems to be something of a hero of the story, opposed or at least contrasted to both the crude reductionists like La Mettrie, and to figures whose 'apriorism' leads them to adopt an eccentric or marginal attitude to scientific practice, like Kant. Would you agree with this, and either way, might you comment on the issue? (Similarly, I found interesting what you say about Kant's anthropology: could you expand on it and/or comment: you hint that it has a never very well-defined status in his work; any thoughts also on how it relates to the anthropology of the time?)*

I see this question as one of the relation between science and the *Kultur/Bildung* tradition. Allow me to draw on material from my forthcoming book in answering your question.

Although the idea of *Bildung* finds its paradigm application in the realm of the arts, this idea that it is the search for truth, not the truth itself, that is of greatest value, fits the work of the scientist perfectly well. It offers a very different understanding of the value of scientific enquiry from what is in effect the results-orientated conception of science that accompanies the 18<sup>th</sup>- and 19<sup>th</sup>-century notions of civilization with which we have been concerned, and which Weimar intellectuals rejected.

In short, the *Bildung-Kultur* conception, by focusing on the practice of science rather than its results, allows for the elevation of science to the highest level of cultural achievement: the practice of science becomes a way of giving one's life a direction. But the situation is complex. In one respect, this conception can enhance the prospects of science as a worthwhile form of activity. The idea of *Bildung* was a response to a set of older values, which contemporaries characterized in terms of the idea of the *Gelehrten*, academic scholars.

R. Steven Turner has argued that there is a fundamental shift in German intellectual culture with the concentration of scientific enquiry in the state-funded universities from the beginning of the 19<sup>th</sup> century onwards. This shift, which he terms the 'Great Transition', is one of the demise of traditional ideals

of learnedness: erudition, eloquence, Latinity, and a polymathic command of a common tradition of learning. The shift was consolidated in the early decades of the 19<sup>th</sup> century, moving German intellectual culture from erudition, now considered introverted and pointless, to functional expertise. Functional expertise is of course supportive of a scientific culture, and there can be little doubt that between the middle of the century and the outbreak of the First World War it was Germany, rather than Britain, that was at the forefront of scientific and technological research.

But the same conception of *Bildung* also suggests a diametrically opposed path, for the idea of *Kultur* undeniably also promotes an association of science with politics and other ‘second-rank’ pursuits. In this case, any link between science and civilization would not necessarily be to the benefit of either. Which of the routes was followed depended on complex contextual circumstances, and these questions become of particular significance in the wake of the First World War, where the context in which enquiry was pursued was very different from that of the second half of the 19<sup>th</sup> century.

The complexity of the post-war situation as it affected the standing of science was shaped by the boycott of German and Austrian scientists from international conferences (where much of science was conducted in this period) from 1919 to 1931, accompanied by the concomitant collapse of German as the ‘language of science’. In the circumstances, we might expect any association between science and civilization in the Germanophone world in the interwar years to be far from straightforward, and somewhat different from that in other European countries. But in the period up to 1914 there is, by comparison, more common ground with British and French notions of civilization, and, on the part of the many British and French intellectuals, a sympathy with a cosmopolitan understanding of *Kultur*, by contrast with the triumphalist and parochial understandings of civilization that had become prevalent in imperial powers such as Britain.

**6** How DOES *your perspective on science fit with the Stanford School’s emphasis on disunity? It seems related, or perhaps complementary to it.*  
I don’t know who Stanford School are, but I don’t believe there are any internally-motivated reasons to accept the unity of the sciences. (I’m work-

ing on the ideological origins of the unity of the sciences in the 19<sup>th</sup> century at the moment). No one believes in unity in the context of explanation (evident in the doctrine of ‘emergent properties’), and I don’t believe there are any other issues. Ontological questions about ‘ultimate stuff’ is an absolute dead end and its proponents should be forced to read Carnap until they get it out of their systems.



*Jean-Léon Gérôme, Diogène, 1860. The Walters Art Museum, Baltimore  
(<http://art.thewalters.org/detail/31957/diogenes/>).*