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The Routledge Handbook of Phenomenology and Phenomenological Philosophy

Edited by Daniele De Santis, Burt C. Hopkins and
Claudio Majolino

THE ROUTLEDGE HANDBOOK OF PHENOMENOLOGY AND PHENOMENOLOGICAL PHILOSOPHY

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PHENOMENOLOGY AND PHILOSOPHY OF SCIENCE

Emiliano Trizio

The relation between the *phenomenological tradition* on the one hand, and, on the other, the *philosophical reflection on science* in general, and of the natural sciences in particular, constitutes an important strand in the vicissitudes of contemporary philosophy. Seen through the lens of this relation, what is striking is the radical cleavage separating Edmund Husserl from the other major phenomenological authors. As is well known, within 20th-century continental philosophy, Husserl's thought represents the last attempt to redefine and defend the vocation of philosophy as the universal science of being encompassing all special sciences. His reflection on modern science and on mathematical sciences in particular was a crucial component of such effort. Subsequent phenomenologists, with the exception of some direct disciples such as Oscar Becker (Becker 1923), did not take up and further pursue Husserl's foundational project, and often regarded the reflection on scientific knowledge as a secondary and derivative issue. In this respect, the position of Martin Heidegger and Merleau-Ponty are emblematic. Heidegger believed that the advent of modern technology was a more fundamental phenomenon than the emergence of modern science after the Renaissance, to the point that, reversing Husserl's more traditional judgment on the matter, he claimed that the latter was a consequence of the former. Heidegger acknowledged that mathematical physics arose before what we consider to be modern technology. However, he believed that mathematical physics was only anticipating in its fundamental structure the conception of being and truth characterizing the essence of technology. This is why Heidegger could claim that the rise of modern science heralded the advent of technology (Heidegger 1977, 22). Both technology and science, furthermore, appeared to Heidegger as the last step in the history of metaphysics, a history that, according to him, we must leave behind us for good. While Merleau-Ponty manifested a great interest for the natural sciences,¹ he believed that Husserl's conception of phenomenology as the ultimate theory of science was the hallmark of an objectivistic conception of philosophy, which a genuine interrogation of the phenomenal givenness was meant to overcome. It would be impossible, therefore, to find in Heidegger and Merleau-Ponty a systematic investigation into the foundations of the sciences, in spite of their enduring interest for them.

Furthermore, from the 1950s onward, in the wake of the demise of logical empiricism, first in the English-speaking world and, subsequently, in continental Europe, the philosophical reflection on science has been marked by the emergence and the academic institutionalization of philosophy of science. This discipline, while being largely autonomous, is nevertheless con-

tiguous to the analytic tradition, to its themes, methods, and conceptual vocabulary. These two parallel developments, on the one hand, the marginalization of the reflection on science within continental philosophy, epitomized by the internal evolution of the phenomenological tradition, and, on the other, the establishment of philosophy of science as an autonomous discipline within the analytic tradition, have jointly brought about the situation familiar to students of philosophy from the late 20th century up to a few years ago. Recently, this situation has somehow evolved, due the efforts of a slowly growing number of continental philosophers interested in natural science. However, in spite of these attempts, there still appears to be a persistent divide between phenomenology as currently practiced and the philosophical investigations into the methodological and ontological foundations of natural science.

This fact explains the fate of Husserl's account of natural science over the past seventy years. On the one hand, Husserl's readers belonging to the continental tradition have produced a number of exegetical studies aimed at clarifying the phenomenological account of natural science. Most of these analyses have focused almost exclusively on Husserl's last work, *The Crisis of European Sciences and Transcendental Phenomenology* (henceforth, *Krisis*), and, in particular, on the famous sections devoted to the Galilean mathematization of nature. The reason for this choice is that this theme is of paramount importance for elucidating the notion of life-world and the significance of history and of cultural critique in the last period of Husserl's production. In this sense, the theme of the mathematization of nature and of the emergence of modern mathematical physics have been approached in a somewhat instrumental way, without trying to trace its origin and significance in the overall development of Husserl's philosophy. Notable exceptions in this respect are the works of Roman Ingarden (1964), Aron Gurwitsch (1974), Elizabeth Ströker (1987) and (1988), Bernhard Rank (1973) and (1990), and François De Gandt (2004), who have conducted extensive explorations of the theme of natural science within Husserl's corpus.

On the other hand, given the fundamental role that the scientific worldview ultimately based on physics plays in so many branches of analytic philosophy (from philosophy of science and epistemology to philosophy of mind and metaphysics), it is unsurprising that those seeking to establish relations between phenomenology and the analytic tradition have often turned to Husserl's conception of nature and to his account of modern science. Indeed, there is a growing literature trying to situate Husserl's account of natural science within the conceptual framework and the debates of contemporary philosophy of science, and to understand whether and to what extent it can provide the key to solve some of its central issues. Unsurprisingly, the problem of *scientific realism* has completely dominated the scene, for it concerns the ontological status of that "physical reality" that plays such a fundamental role in many areas of analytic philosophy. Within mainstream philosophy of science, scientific realism expresses an optimistic epistemic attitude *vis-à-vis* successful and mature scientific disciplines, according to which the latter can legitimately aspire to provide true or partially true descriptions of the observable and unobservable aspects of the world, and, to an extent, have already achieved such aim. Scientific antirealism of empiricist inspiration typically limits such epistemic ambitions to the observable aspects of the world. It is noteworthy that, over the past forty years, the attempts to find the right way to interpret Husserl's work in light of such conceptual vocabulary has produced no stable consensus. Scholars have focused mainly on §§40 and 52 of *Ideas I* and the famous §9 of the *Krisis* containing a detailed discussion of Galileo's mathematization of nature and of the life-world as its forgotten sense-fundament. To a lesser extent, they have addressed Husserl's analysis of the constitution of material nature as developed in the first part of *Ideas II*. Different antirealist interpretations and developments of Husserl's theory of science have been proposed by Gutting (1978), Harvey (1986) and (1989), Heelan (1987), and Wiltche (2012), while realist-inclined approaches of various kinds have been developed by Rouse (1987), Soffer (1990), Hardy (2013),

and Reynolds (2018). The efforts to find within contemporary philosophy of science suitable counterparts of Husserl's own position have led Wiltsche to draw a parallel between phenomenology and Bas Van Fraassen's constructive empiricism (Van Fraassen 1980), and Rouse and Hardy to suggest its affinity with Nancy Cartwright's entity realism (Cartwright 1983).

Such predicament directly stems from the radical incompatibility between transcendental phenomenology and the implicit presuppositions on which philosophy of science as an autonomous "philosophical" discipline rests. In other words, there is no way to situate the transcendental phenomenological elucidation of physical reality within the array of positions characterizing the contemporary debate on scientific realism, and this for principled reasons.² On the one hand, no form of scientific realism implying metaphysical realism is compatible with transcendental idealism, according to which nature cannot be conceived as a being existing in itself independently from consciousness (Hua XXXVI, 71–72). On the other, no form of scientific antirealism is compatible with the transcendental idealist identification between being and knowability.³ Unquestionably, the aim of a science, according to Husserl, is to become the *episteme* of its domain of investigation: science arises precisely with the emergence of the correlative ideas of objective knowledge and being in itself. However, the domain of investigation of a science, as such, exists only as the correlate of the constituting intentional operations of transcendental intersubjectivity (Hua XVII, 15). Furthermore, all the forms of "social constructivism" that, at least since the 1960s, have widened the traditional stock of options available to the philosophers of science are ruled out by transcendental phenomenology, due to the fact that they imply the relativization of knowledge (and often even of the being of the world itself) to communities of empirical (historical and social) subjects, whose own sense of being and whose relation with the world remain unclarified. Finally, also the broadly construed (and often dimly understood) "Kantianism" that, in various ghostly guises, recurrently haunts today's epistemological debates is wholly incompatible with transcendental phenomenology, for the latter rejects any notion of an unknowable "thing in itself" as well as any belief in a hidden side of the world lying for essential reasons beyond our cognitive grasp. This radical heterogeneity between transcendental phenomenology and the landscape of contemporary philosophy of science is not a contingent state of affairs that could be overcome by merely transplanting the former into the latter, or by grafting its central insights onto some of the more or less common flora that can be found in that landscape. In other words, neither can transcendental phenomenology be recruited by contemporary philosophy of science in view of fostering its own goals, nor is it conceivable to combine the two disciplines into a chimeric "phenomenological philosophy of science".⁴ In order to convince ourselves of this fact, it is necessary to appreciate that *these intellectual endeavors are rooted in two radically incompatible conceptions of the very nature of philosophy*.

According to Husserl, philosophy must strive to establish itself as the universal science of being. Thus, the existing special sciences, the so-called positive sciences, are not reducible to cultural realities that a sub-discipline of philosophy could try to understand, and whose methodology it would be enough to codify and, eventually, turn into an explicit norm. Rather, they are partially developed attempts to realize in their respective domain the ideal of genuine knowledge of what ultimately exists (Hua XVII, 14). In other words, they are not activities *essentially other* than philosophy and that philosophy takes as objects of investigation. In the present cultural context, one marked by the demise of the modern rival of universal philosophy inaugurated by Descartes, they are incomplete and only "unilaterally" rational fragments of the kind of science that philosophy was destined to be. Even when their method is fairly developed and successfully applied (as is the case for physics, and not for psychology), these sciences lack clarity about the sense of being of their respective domain, i.e., about what it means for it to exist. Such sense of being is the correlate of the anonymous intentional accomplishments of transcendental inter-

subjectivity. Without this clarification, also their method, which draws its legitimacy solely from the essence and sense of being of their objective domain, remains obscure and questionable. In order to “philosophize” the sciences, to turn them into philosophy, or more specifically, into metaphysics as the ultimate science of reality, it is, thus, necessary to clarify the sense of being of the world and of its fundamental layers (i.e., nature and spirit). For such an endeavor, the method of the transcendental reduction is required, which is unique to the philosophical fundamental discipline, transcendental phenomenology, a method on which the unity and scientificity of all philosophy rests. By virtue of the transcendental reduction, the sense of being of the world is elucidated independently of the methods and results of the special sciences, and as a precondition for their rationality. In other words, the notion of “world” is rescued from all forms of objectivism that derive the sense of the world from the method and results of the special sciences: all variants of naturalism imply such objectivism. This illuminates the sense of Husserl’s late systematic use of the term “life-world”. There is, of course, only one world, and it is the correlate of the unitary nexus of our lives. The contrast between the life-world and the world of science is not the contrast between “two worlds”, but between the world as originally disclosed, as unfolding the sense of its being in intuitive givenness, i.e., the only real world (Hua VI, 48–49), and *the scientific determination of it* as the ideal *telos* of an infinite epistemic accomplishment. Husserl’s analysis of Galileo’s mathematization of nature becomes, then, transparent. A science is characterized by a task and a method. The task is the theoretical determination of an objective domain and the method is the set of rational procedures appropriate for such determination. The rise of modern physics coincides with the emergence of a method apt to bring to theoretical determination its objective domain, i.e., *material nature*. Crucial to such method is the mathematization of material nature, which consists in replacing its sensible determinations (whether spatial, temporal, or causal) with geometrical and mathematical properties only. Galileo, to whom the life-worldly origin of geometrical idealizations was no longer accessible due to the technization that the science of geometry had undergone after its emergence in Ancient Greece, misunderstood the sense of the method he had devised. Instead of correctly framing it as a way of determining material nature as an aspect of the life-world, as an aspect of the world whose sense is fixed in intuitive givenness before any scientific investigation, he came to conceive of it as the key unlocking a nature mathematical in itself, existing “beyond” and independently from subjectivity. Such misunderstanding crippled modern metaphysical rationalism from the outset and condemned it to its inevitable collapse. It is the task of transcendental phenomenology to unveil the true sense of the world, and turn all positive sciences into branches of the universal cognition of the world, which transcendental subjectivity carries “within” itself.

In contrast, philosophy of science does not see itself as an integral part of an all-encompassing philosophy conceived in turn as a science. By the same token, philosophers of science do not even dream of turning the sciences into branches of their own philosophical activity.⁵ More or less implicitly, philosophy is taken to amount to a set of disciplines loosely related to one another and lacking a unitary method. Each such discipline is defined by an object, while its debates are nourished by a stock of traditional positions about it. In some cases, the reference to a specific object is less explicit: ethics, political philosophy, metaphysics ... In most cases, however, it is completely explicit: philosophy of language, philosophy of mind, philosophy of art, philosophy of religion, philosophy of sport ... philosophy of science. The disunity of these disciplines has nothing to do with our failure to master their countless intellectual products and bestow upon them the form of an encyclopedic synthesis, because it is due to the lack of their principled grounding by means of a unitary method. *Deprived of such methodological awareness, philosophy of science is unable even to thematize, let alone to overcome, the natural attitude.* Thus, it is bound to misinterpret the sense of being of the world (the being of the life-world) on the basis of objectivistic conceptions of

being, or on the basis of relativistic forms of constructionism. We can in this way appreciate that all the ontological positions advocated by philosophers of science are based on the surreptitious “construction” of the world itself out of the results, the methods or the conceptual frameworks of the special sciences. Physicalism is an obvious example, but it would take little effort to show that intermediate positions in the spectrum between scientific realism and empiricism can be subjected to the same critique. All such positions are forms of naturalism; they all understand the being of the world based on a self-sufficient natural objectivity. The opposite upshot of this process is the mirror image of naturalism: historicism. All forms of social constructivism are more or less conscious attempts to understand the nature of knowledge and even the sense of the world in relation to the social interactions occurring within communities of *empirical* subjects. Thus, even these apparently so “unnatural” forms of world-interpretation are unable to break free completely from the shackles of the natural attitude. Husserl’s warning against naturalism and historicism as the Scylla and the Charybdis of modernity has not lost its significance in our present situation.

These considerations highlight the in-principle opposition between phenomenology and philosophy of science. Within the unity of phenomenological philosophy, there is a place for a “philosophized” form of the different a priori and a posteriori objective sciences, and for the different chapters of transcendental phenomenology, but there is no place for different “philosophies of”. The very term “philosophy of science” appears misleading at best to those who discern through the medium of the word “science” the light emitted thousands of years ago by the Greek star of *episteme*. A more fitting title for this entry would be “phenomenology *versus* philosophy of science”.

Notes

- 1 See, for instance, his famous lectures on the concept of nature (Merleau-Ponty 2003).
- 2 This thesis is developed in detail in Trizio 2020.
- 3 A correct reading of §§40–52 of *Ideas I* confirms that Husserl rejected any form of “anti-realism” underplaying the ontological value of physical theory (see Trizio 2020)
- 4 Similar conclusions hold concerning the relation transcendental phenomenology entertains with the cognitive sciences and with philosophy of mind. In some form, they can be extended to any specialized area of contemporary philosophy, from ethics to metaphysics.
- 5 Indeed, radical methodological naturalists believe that the discourse on natural science must be ultimately reduced to natural science itself. Their aim is, thus, to broaden the scope of natural science as to include what traditionally is called philosophy (or, at any rate, epistemology). In this way, they surely manifest a certain sensitivity to the methodological drama unfolding at the heart of any philosophical understanding of science, although they seek a wrongheaded solution to it. However, also for them, science remains a fact, rather than a *telos*.

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