

# Editors' Introduction

## Phenomenology and the Sciences: Foundations, Clarifications, and Material Contributions

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From its very beginning, phenomenology has shown a strong connection with scientific thought and the sciences. Husserl, for instance, began his intellectual career not as a philosopher, but as a student of physics, astronomy, and especially mathematics under the guidance of Karl Weierstrass and Leopold Kronecker. He then shifted to descriptive psychology as a follower of Franz Brentano and his school. From this perspective, one can say that phenomenology arose as an attempt to integrate discussions on the foundations of mathematics with the results of descriptive psychology.

Husserl's followers, both orthodox and otherwise, and scientists and philosophers inspired by Husserl's phenomenological project, have tried to implement the idea that phenomenology should prepare the ground for, clarify basic concepts and practices of, and explore the relationships between scientific disciplines. For instance, Alfred Schutz applied phenomenology to sociology, Hermann Weyl to physics, Oskar Becker to mathematics and geometry, Ludwig Binswanger and Erwin Straus to psychopathology, Roman Jakobson to linguistics, and Aron Gurwitsch to psychology.

In recent decades, phenomenological research has often been conducted in collaboration with cognitive sciences, psy-sciences, and neurosciences. However, the foundational task of phenomenology has seldom been the focus of these collaborations. More recently, phenomenology has been seen as offering important insights and contributions to questions and investigations pertaining to physics. It has also emerged as a potentially powerful tool for addressing classical epistemological questions and problems in the philosophy of science. This development opens a new bridge between phenomenology and analytic philosophy beyond the restricted field of philosophy of mind, while,

at the same time, recovering and reshaping its connection with the philosophical tradition in general, from Plato to German Idealism, and beyond.

This thematic issue of *Studia Phaenomenologica* has collected papers that grapple with the following questions: What can phenomenology say nowadays concerning the sciences? Is phenomenology able to provide the foundational stone Husserl envisioned, or, as he himself asserts in the *Crisis*, “*der Traum ist ausgeträumt*”? If this is the case, what position can phenomenology still assume towards the sciences? Can phenomenology itself be considered a specific science? Can phenomenology offer any contributions to scientific research, both basic and applied? Should phenomenology be understood as a form of epistemology, or is there a specific field of research unique to phenomenology that is distinct from epistemological reflection?

The issue opens with a contribution by **Emiliano Trizio**, who tackles the relationship between Husserlian transcendental phenomenology and the philosophy of science. Trizio believes that the Husserlian phenomenological-transcendental project is capable, as Husserl himself clearly stated, of overcoming the fragmentation of the scientific horizon and, consequently, of offering a contribution to a unitary and rational vision of scientific research, its various objects, and its results. In this way, Trizio ultimately sets out to show that the dream of the ideal of scientific humanity long pursued by Husserl is not really *ausgeträumt*. Trizio's idea finds support in the subsequent contribution by **Harald Wiltsche**, who intends to show that a rigorous execution of phenomenological research makes a fundamental contribution to understanding and developing one of the most complex and controversial theories of contemporary science, namely quantum physics. According to Wiltsche, phenomenology can indeed make a positive contribution to this theory, not only by helping to understand it but also by developing it further.

The foundational value of phenomenology is also asserted by **Bruno Frère and Sébastien Laoureux** for a science seemingly far removed from physics: sociology. Leaning on the work of Alfred Schutz and Max Scheler, the authors show that a sociology with a phenomenological foundation still has much to offer, not only in terms of clarifying the basic concepts of sociological research but also in terms of developing current research in ways that appropriately address the socio-ecological and economic crises we face today, offering glimmers of hope for overcoming them. This, too, demonstrates that the Husserlian dream is perhaps not completely exhausted and that keeping it alive is fundamentally important—not for science understood in an abstract sense, but as the actual “soul” of our being-in-the-world. Along similar lines, **Jesse Lopes** reminds us that, according to Hume, the idea of a fundamental science underlying all other sciences should be the science of man, not physics, and argues in favor of Husserl's recovery of this Humean idea. In fact, Husserl's enterprise should be read as able to overcome the tendency towards “anthropologism”—which for Husserl would mean relativism—of the Humean position, while respecting its genuine spirit: a more authentic empiricism than

the mathematical-idealizing science of the Galilean tradition. Although it is debatable whether this "Husserlian" view of the Galilean scientific spirit is correct, we can certainly assert that the need to overcome the ontological divide between natural science, the science of man, and the concrete life of humans-in-nature can no longer be regarded merely as an heirloom of the late 19th and early 20th century discussion of the relationship between *Naturwissenschaften* and *Geisteswissenschaften*.

In this regard, **Stanford Howdyshell**, by taking up the Heideggerian reflection on logic, allows us to see how this is in good continuity with the Husserlian project of transcendental foundation of the sciences, and how it can effectively contribute to elucidating the concrete way of being of that entity that engages in scientific inquiry, i.e., that thinks "scientifically." Contrary to what has often been said and written, and to what the protagonists of the debate themselves have stated and understood, there is at least the possibility of developing the Heideggerian reflection on logic in a way that does not necessarily lead toward some form of mysticism of *Brot und Boden*, but rather can offer an effective and important contribution to our understanding of scientific thought as such. If Howdyshell focuses on Heidegger's phenomenological position, **Prisca Amoroso** calls forth another leading personality of what Herbert Spiegelberg has called "the phenomenological movement": Maurice Merleau-Ponty. In her contribution, Amoroso first extensively analyses Merleau-Ponty's phenomenology of movement and then demonstrates how many of the challenges posed to mirror neuron theory could be addressed through a dialogue with Merleau-Ponty's reflections and phenomenology in general. Amoroso argues that neuroscientists should accept the "necessity of phenomenology" and assume the "phenomenologization of the field" as one of the main challenges for neuroscience today.

Phenomenology seems to be of great importance also for another scientific field, namely "the unconventional field of computer science known as natural computing." **Martina Properzi** points out the relevance of phenomenology for natural computing by analysing a case study, specifically the implantation of biomimetic corneas, using Scheler's genetic phenomenological concept of dissociation. Properzi aims to present an innovative way to apply phenomenology to natural computing and to problems concerning body supplementation. This approach differs both from the post-phenomenological analysis of human-machine hybrid intentionality and from the phenomenology of human-robot interaction, offering what she calls a "genetic phenomenology of body augmentation." As a third way, genetic phenomenology emphasizes dynamic, time-sensitive features of user experience in human-machine hybrid settings. The relationship between science and technology is also the topic of **Renxiang Liu's** paper, "Prescience and Patience: A Reassessment of Technoscience in Light of Heidegger," which interacts with contemporary debates on technoscience. Moving from Heidegger's critique of calculative thinking in modern technology and science, Liu aims to transform the phenomenological

account of temporality into a thing-centric account of the unfolding of things at their own rhythms.

Another contribution towards a general phenomenological foundation of science is offered by **Benjamin Stuck**, whose aim is to build on and delve into Richard Grathoff's conceptual differentiation between "lifeworld" (*Lebenswelt*), "everyday world" (*Alltagswelt*), and "daily life" (*alltägliches Leben*). According to Stuck, the clarification of these fundamental distinctions should contribute to defining a phenomenological epistemology, namely a phenomenological description of the scientific province of meaning in terms both of the scientific "daily life" of routine and familiarity and of a realm of the new and "extraordinary." The Dossier ends with a more historical contribution, "Notes on the Dialogue between Phenomenology and Mathematics: Husserl and Becker." Here, **Jassen Andreev** retraces the main stages of the complex dialogue between meta-mathematics and phenomenological philosophy. Andreev reconstructs Husserl's early foundational reflections on mathematics and logic and then moves to the quite underrated theoretical contribution of phenomenologist-mathematician Oskar Becker, which Andreev describes in terms of a Quasi-Anthropological Foundation of Mathematics.

All in all, the articles collected in this volume show that phenomenology is active in two ways towards the sciences, somehow confirming its hybrid position: on the one hand, phenomenology has a clarificatory task, which is concurrently a foundational one; on the other hand, phenomenology is practiced to offer insights and, more generally, contributions that enlarge knowledge within specific sciences. Husserl's dream is perhaps indeed dreamed up, but phenomenological work with and on the sciences, as well as on the idea of science itself, is far from being exhausted or meaningless.