Contributions To Phenomenology 76

Ľubica Učník Ivan Chvatík Anita Williams *Editors* 

### The Phenomenological Critique of Mathematisation and the Question of Responsibility

Formalisation and the Life-World



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# The Phenomenological Critique of Mathematisation and the Question of Responsibility

Formalisation and the Life-World



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For Dr. Steve Schofield (1978–2008), in memory of our many, often heated, but always enjoyable, conversations. You will always have a seat at our table.

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## The Phenomenological Critique of Formalism: Responsibility and the Life-World

### Ľubica Učník, Anita Williams, and Ivan Chvatík

Abstract Self-responsibility and self-critique have been themes in philosophy since Plato's Socrates endorsed the demand to 'know thyself' [ $\gamma v \omega \theta t \sigma \alpha v \tau o v$ ]. In the modern philosophical tradition, self-critical reason, a reason that gives the law to itself, has been at the very centre of the practice of both epistemology and ethics. In the twentieth century, the European phenomenological philosophers Edmund Husserl and Jan Patočka brought new clarity and a sense of urgency to the critical thinking surrounding the need for responsibility. Using Husserl's and Patočka's thinking as the starting point for a critical reflection, this volume proposes different approaches to reflect upon the increasing formalisation of all aspects of our lives, which is particularly relevant for the present age.

### Keywords Formalisation • Mathematisation • Life-world • Responsibility

Husserlian theory of modern science is nothing other than a reflection on the perils of fruitfulness, on the ruses of genius, on the irrationality which rationality itself endangers – not, to be sure, necessarily, yet not wholly accidentally, either. (Might not this shadowy side of rationality, this negative aspect of science, lie at the roots of certain specific evils that not only occasioned the catastrophe that Husserl sought to prevent with his reflections but that, unfortunately, are also still very much with us?) (Patočka 1989 [1971]: 226).

Our aim is to contribute to debates surrounding the prevalence of the formalisation of knowledge leading to an instrumentalisation of the world that is oblivious to human lives, with their everyday needs, hopes and aims. Contributors concentrate on the issues of formalisation and the ethics of responsibility, founded

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in careful study of Husserl, Patočka and Martin Heidegger. The contributors' approaches are critical and interpretative, but also textual and historical. Papers in this volume address topics of contemporary concern, in ways that also illuminate the relevance of previous thinking to the issues at hand. The authors aim to offer phenomenological accounts of the nature of self-responsibility as a critical, self-reflective and ethical practice, which is required in order to correct the increasingly value-free formalism of scientific knowledge.

### Husserl

As Husserl showed in The Crisis of European Sciences and Transcendental Phenomenology: An Introduction to Phenomenological Philosophy,<sup>1</sup> the Galilean conversion of nature into geometrical relations is the beginning of modern science, which leaves the world of our experience far behind (Husserl 1970: 23 ff). It starts with describing nature in terms of mass and energy in geometrical space and time. It is well known that the crisis of classical physics brought the problem of the mechanistic conception of nature to the forefront; yet modern science continues with its ever-increasing mathematical formulations (see Burtt 1925; Sullivan 1933; Whitehead 1925). As a result, the everyday world is explained in terms of scientific models that were originally constructed in order to formalise our life-world but now become the measure of it. We live in a double world: the world of epistemically secure objective knowledge, generated by the sciences; and the subjective, changeable world of our human experience, which science relegates to irrelevance (Husserl 1970; Patočka 2008 [1936]). Severed from the everyday world, formal knowledge leads to objective knowledge bereft of everything human, which is now considered subjective. The place of humans and their responsibility for the world they live in becomes problematic. Certainly, this process has brought to us for better and for worse – significant technical improvements to our environment, enhancing our living; but it has also brought about threats to our world and to human life. The knowledge of the physical world is expressed in formulas, creating elaborate models, which we have forgotten are only models, originally derived from, but not equivalent to, the natural world.

Already at the beginning of the modern scientific re-conceptualisation of nature, Blaise Pascal expressed his horror at the "eternal silence of these infinite spaces" (Pascal 1960: no. 392). This type of formalised knowledge now extends to every sphere of our living. In 1891, in his book *Philosophy of Arithmetic: Psychological and Logical Investigations* (Husserl 2003),<sup>2</sup> Husserl preoccupied himself with the problematic nature of scientific formalism, which became the defining motif in his phenomenology. According to Husserl, science became a technique, forgetting its own starting point – that is, the life-world, as he explicitly argues in his last work,

<sup>&</sup>lt;sup>1</sup> From now on abbreviated to Crisis.

<sup>&</sup>lt;sup>2</sup> From now on abbreviated to *Philosophy of Arithmetic*.

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the *Crisis*. From *Philosophy of Arithmetic* onwards, Husserl endeavored to trace and explicate "the nature of the abstraction process" (Husserl 2003: 125) which has become a defining feature of modern science and which scientists – at their higher level of formalisation – forget, thereby turning science into "a theoretically and practically successful *technē*" (Patočka 1989 [1971]: 225). This turn towards technique, instead of genuine engagement with theoretical insight, leads to "the considerable difficulties that accrue to [scientific] understanding". In the process, scientists overlook many "dangerous errors and subtle controversies" (Husserl 2003: 14).

In 1922, Max Weber also developed a critique of science (Weber 1978 [1922]). However, as Aron Gurwitsch reminds us, "whereas Weber is prepared to resign himself to the given state of affairs, Husserl holds out the prospect of a regeneration of western man under the very idea of philosophy, into the unity of which the sciences have to be reintegrated" (Gurwitsch 1956: 383, note 388).<sup>3</sup> In other words, Husserl's task is to defend the idea of Western reason, which is, according to him, a defining feature of European humanity. To defend reason means to reflect on the positive sciences, which have forgotten their own initial impulse: scientists became technicians, manipulating formal symbols without understanding where those formulas came from. According to Husserl, science creates "a well-fitting *garb of ideas*, that of the so-called objectively scientific truths" that obscures the world of our living, taking "for *true being* what is actually a *method*" (Husserl 1970: §9h, 51, emphasis in original).

Recalling Galileo's role in Western culture's shift in the understanding of nature, Husserl points out that Galileo's mathematisation leads to the formalisation of Descartes and Leibniz. Galileo's mathematisation is still tied to geometry: in other words, to shapes which are idealised from the world. The *mathesis universalis* of Descartes and Leibniz severs this connection of geometry to the life-world. By transposing geometry into algebra, numbers, not shapes, come to define nature. The *mathesis universalis* eliminates meaningful relations to the world, which is still – however obscurely – reflected in geometry. The purging of the life-world from formal knowledge is Husserl's central concern in his critique of formalisation.

Husserl's conceptualisation of the 'life-world' is central to the analysis of the nature of formal knowledge and the manner in which formalised knowledge, tied to technological advances, has shaped modern culture. Husserl claims that in order to understand our responsibility for knowledge, formalised or everyday, we must acknowledge that all our claims to knowledge have their starting point in the life-world. Hence, Husserl's stress on responsibility is intimately tied to his discovery of the importance of the life-world. However, the life-world and responsibility are only of interest to Husserl in so far as they are connected to this problem of knowledge; and while he clearly sees the relevance of his critique of knowledge for contemporary society more generally, the problem of knowledge remains his main focus. From the beginning of his work, Patočka is influenced by Husserl's

<sup>&</sup>lt;sup>3</sup> See also Gurwitsch 1974.