

Relative science, absolute consciousness

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Kant drew a crucial, and still valid, lesson from his reflection about Newtonian mechanics : in the empirical world, we can only know *relations between phenomena*. Matter itself should be construed as a bundle of relations, since the only characteristics by which it manifests itself are the (attractive or repulsive) *forces*. According to the later neo-Kantian tradition, even the extensive use of differential calculus by classical physics shows that only (infinitesimal) relations are accessible, and that no monadic foundation of these relations, no absolutized *relata*, can ever be grasped by physics. As for objectivity (a crucial value of physics and science in general), it was understood by Kant as *universal validity*, for any subject, of a certain mode of *relational organization* of phenomena, rather than as intrinsic existence. To summarize, one could say that, according to Kant, we have access only to phenomenal relations which are in turn constituted by a basic epistemic relation. No access to a (putative) reality as it exists in itself, independently of this epistemic relation, is even conceivable.

The subsequent history of physics has more than substantiated this Kantian view. In quantum mechanics, the relational structure of knowledge is further enhanced. As Grete Hermann pointed out : "(Quantum mechanics) exaggerates the relative character of the description of nature. It abandons the representation according to which the structures of relations are univocally determined by certain connections of things in space and time, and shows their being dependent on the way an observer takes cognizance of the system". This means that in quantum mechanics we can no longer content ourselves with describing relations between spatio-temporal objects, thus behaving as *if* the cognitive relations did not exist or were irrelevant. We have to take fully into account the multiple cognitive relations between the microphysical domain and the measuring apparatuses. One of the consequences of this twice-relational character of quantum knowledge is the appearance of non-supervenient relations, namely relations that do not depend on hypothetical monadic properties of the *relata*. This non-trivial kind of relation is well-known, with the catchword "non-separability". Another important consequence is the possibility of a relational solution to the measurement problem of quantum mechanics (illustrated by Schrödinger's cat paradox).

What are the consequences of this understanding of physics and science for the problem of consciousness ? According to it, science was born from the decision to *objectify*, namely to select those elements of experience that are invariant across persons and situations. Its aim is to formulate *universal* truths, namely truths that can be accepted by anyone irrespective of one's situation. Therefrom, the kind of truths science can reach is quite peculiar : they take the form of universal and necessary *connections* between phenomena (the so-called scientific *laws*). This epistemological remark has devastating consequences for the scientific understanding of consciousness. It means that *in virtue of the very methodological presupposition on which it is based*, science has and *can have nothing* to say about the mere (and *absolute*) fact that *there are* phenomena (namely appearances) for anybody, let alone on the *qualitative* content of these phenomena. In other terms, it has nothing to say on "phenomenal consciousness", despite its many interesting (and medically useful) findings about the functional aspects of consciousness (Ned Block's "access consciousness"). This paradox will be explored in depth, and we'll be led to advocate : (i) an extension of knowledge to the first-person standpoint of phenomenology beyond the so-called third-person approach, and (ii) an existential dissolution of the "hard problem" of the physical origin of phenomenal consciousness.