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THE CONSTITUTION OF BIOLOGICAL OBJECTS OF INQUIRY FROM THE VIEWPOINT OF HERMENEUTIC PHENOMENOLOGY

1. BEING IN A WORLD OF OBJECTS OF INQUIRY

The idea that the constitution of the objects of inquiry in biology is lying between the poles of naturalist objectivism and hermeneutic phenomenology (as the most radical kind of antinaturalism) was suggested by Gunther Stent, a prominent figure in molecular biology.[1] He raises the claim that the more complex a research object, the more "hermeneutic preunderstanding" is required and the less likely that the research process will have the aura of objectifying thematization. Stent holds that the research work in biological disciplines often (e.g., in reading experimental results) faces the need of transforming a vicious circle into a hermeneutic circle. The transformation requires – so Stent's argument goes – the use of hermeneutic preunderstanding. His line of reasoning is ambiguous. On the one hand, the talk of hermeneutic preunderstanding is *à la* Michael Polanyi's tacit knowledge. Stent is insisting on the involvement of intuitive knowledge in the constitution of complex research objects. On the other hand, however, his considerations display a tendency of moving from cognitive hermeneutics to hermeneutic phenomenology. He is inclined to admit that the research process requires from an interpretative scientific community an "activation" of a preunderstanding that resides in the community's practical experience.

Despite this ambiguity, Stent's conception is highly inventive in suggesting a hermeneutic approach to the non-reductionist unity of biology. On this conception, one can identify a peaceful coexistence of types of biological objects of inquiry (and types of research processes) even in one and the same research domain. Stent cites the example of neurobiology, which at the objective pole is represented by cellular electrophysiology, and at its opposite pole by a kind of "cerebral hermeneutics". Hermeneutic preunderstanding and objective validation are correlative parameters that define the "balance" between involving past experience and actual thematization (subjected to

A-T. Tymieniecka (ed.), Analecta Husserliana XCIV, 151–163.

epistemological criteria of objectivity) in the constitution of research objects. In fact, this balance is resulting from the ongoing juxtaposition of two kinds of reflection in each type of scientific research: A self-reflection upon the entanglement of research practices in the production of cognitive content, and an objectifying reflection aiming at a radical decontextualization in the construction of theoretical models representing empirical research objects.

More recently, the idea that the constitution of biological objects of inquiry takes place between naturalist objectivism and the hermeneutic reading of one's being-in-the-complexity-of-doing-research was further developed by Hans-Jörg Rheinberger's approach to the diversity of experimental systems. Rheinberger is preoccupied in the first place with the constitution of biological objects of inquiry and (in his words) biological "epistemic things" within the laboratory work's practices. By taking a microscopic look at Paul Charles Zamechnik's laboratory at Massachusetts General Hospital, Rheinberger outlines a nice picture of scientific research in genetics and molecular biology. He describes important experimental events that set the stage for deciphering the genetic code and for protein synthesis research in the first half of the 1960s. Rheinberger manages to demonstrate that *sine qua non* for a successful work of an experimental system is its ability to produce differences. The generation of differences becomes the reproductive driving force of the whole system. At the same time, the differences being produced provide a fore-structure of the epistemic constructions. Scientists think within the spaces in which the differences display their meaning.[2]

Rheinberger's elaborations invite a phenomenological approach to the constitution of biological objects of inquiry. In what follows, I will argue that such an approach can be built upon an extended version of Heidegger's "existential conception of science". On this conception, scientific research is a being-in-the-world that is predicated on an interrelatedness of routine practices. This interrelatedness projects possibilities of doing research, which become (to use Heidegger's term) "appropriated" through carrying out the practices. The very appropriation of possibilities is guided by a "mathematical projection" that determines a domain of objects under inquiry. The possibilities projected by the interrelatedness of routine research practices takes place "always already" within a mathematical projection. Here is the principal difference between pre-scientific everydayness' concernful deliberation and science's objectifying thematization, a difference of prime importance for Heidegger's existential analytic. In the former case, the horizon