

Comments on Borbone's *The Relevance of Models*

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Abstract: After a brief comment on the historical importance of the Polish School of Logic, actually the cradle of structuralist philosophy of science, I discuss a problem in the notion of idealization, which usually is seen as a mere dropping of nullifying assumptions in order to obtain a more general theory-element.

Keywords: Idealization; Leszek Nowak; polish school of logic; Poznań School of Methodology.

Let me start by regarding what has been done by the Polish supposedly “minor” national culture in the field of philosophy of science (Borbone 2021, 63). If we consider only the work of Alfred Tarski, they did set the foundations of the modelistic branch of the philosophy of science started at Stanford University by John Charles Chenoweth McKinsey, Patrick Suppes and Kenneth Arrow. The structuralist view of theories finds its origin in what Muller (2011) has called “the Stanford Revolution.” Hence, it is not exaggerated to say that Polish logic and philosophy is the cradle of the most important developments in the philosophy of science, and many of us consider ourselves to be children (or grandchildren) of the Polish Lvov-Warsaw school. Nowak’s views in the philosophy of science also have their origin in

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that great school indeed. Tarski's notion of set-theoretical structure gave us the tools to express mathematically the idealizational conception of science.

Borbone's book provides us with a rich view of the work of the Polish logicians and philosophers of science and explains quite well, in my view, the doctrine elaborated by Nowak on idealization. I would like to comment especially upon his work on Marxian economics, on his view of concretization.

Borbone distinguishes strict from approximate concretization, "since it will not be possible to determine exactly the type of modification to be applied to the law to be made concrete, but it will only be possible to establish the admissible field of deviations from their real values of the theoretical values of the numerical functions examined" (Borbone 2021, 66).

What I want to stress now is that the tilde hides a very complex relationship. Wade Hands has pointed out that

Often theoretical progress occurs just in the reverse manner; the theory is made not more specific, but more general. Much of the history of general equilibrium theory can be characterized as a search for increasingly more general conditions which preserve the basic properties of the theory. This type of 'generalizing' theoretical progress is outside the standard structuralist view of theoretical progress and thus represents one more way in which the fit seems less than perfect. (Hands 1985, 330)

Nevertheless, the structuralist view is particularly suited to explain this process. It consists of postulating a theory-element T_0 of which the given, more idealized theory-element T_1 would be a specialization (in the usual structuralist sense). I claim, by the way, that this is the most important sense of concretization. Nowak's view can be seen as a case of concretization in which the special conditions defining T_1 are isolations. But sometimes concretization is not merely de-isolation: it must also figure out the form of the fundamental law defining the theory (and hence also T_0). All my effort in (García de la Sienna 1992) was devoted precisely to a task of this type, namely to find a more general form of the law of value in order to generalize the (then) standard model systems of the labor theory of value, taking into

account very general productive structures with heterogeneous labor (for a more recent version of this, see García de la Sienra 2019).

De Donato proposes understanding idealization “basically as a relation between theory-elements just as any other intertheoretical relation” (De Donato 2011, 83). I think he is right, but his explication only accounts for the case in which idealized theory-elements are obtained by means of nullifying assumptions. Thus, it would seem that concretization consists simply of dropping the nullifying assumptions in order to obtain a more general theory-element. But, as I have been trying to stress, finding more general versions of the fundamental law implicitly involved in the definition of the idealized theory-element can be harder than what such a description suggests, as it may involve unsuspected conceptual transformations of the given notions. Finally, Marx’s idea of raising from the abstract to the concrete cannot be explained by means of Nowak’s idea of concretization, as it is not an intra or inter-theoretical relation. Rather, it consists of describing a real-concrete economic system out of abstract determinations (*Bestimmungen*) yielding a non-idealized description of the same. The construction of idealized models of the system starts after this description has been given; this description is a way of fixing the reference for further investigation on the system.

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