

Nowak, Models, and the Lessons of Neo-Kantianism

Stephen Turner*


Received: 12 December 2021 / Accepted: 10 January 2022


Abstract: Models are the coin of the realm in current philosophy of science, as they are in science itself, having replaced laws and theories as the primary strategy. Logical Positivism tried to erase the older neo-Kantian distinction between ideal constructions and reality. It returns in the case of models. Nowak's concept of idealization provided an alternative account of this issue. It construed model application as concretizations of hypotheses which improve by accounting for exceptions. This appears to account for physical law. But it raises the problem of uniqueness: is the result unique, as physical law should be? Neo-Kantianism failed this test. Its solutions were circular justifications for claims of uniqueness. Nowak inherited the problem without resolving it.

Keywords: Ideal-types; idealization; Leszek Nowak; models; neo-Kantianism; Poznań School of Methodology; underdetermination.

Over forty years ago, in 1979, I was in a seminar with Richard Rorty, who rather startlingly described (and dismissed) Logical Positivism as “late neo-Kantianism.” He had previously published a collection of these writings under the title “The Linguistic Turn,” and I, and the other members of the

* University of South Florida

 <https://orcid.org/0000-0002-7538-0533>

 Department of Philosophy, University of South Florida, 4202 E Fowler Ave, Tampa, FL 33620, United States

 turner@usf.edu



seminar, assumed that the change from “ideas” to “language” was revolutionary and definitive: that the muddles of neo-Kantianism over concepts and their relation to the world had been replaced by considerations involving the syntax, semantics, and pragmatics of assertions. This transformation gave rise to its own issues, but they were, it seemed, quite different issues than those of neo-Kantianism, with its odd Kantian view of logic as conceptual dependence rather than formal logic, and its very different view of the relations of concepts to reality and of concepts to one another.

I needn't bother to show that the problem with this transformation was that it didn't work, and that from the start elements left over from neo-Kantianism crept back in under different guises. There were issues that other thinkers, such as Karl Pearson: particularly the issue of whether the laws of physics, or any such laws, were anything more than approximations of relations which were, at the level of data, variable, so that all scientific laws were idealizations. Other elements proved to be more relevant to actual problems in science. The problem of conceptual change, for which Logical Positivism had no space—by design—was what eventually killed it, or transformed it into conventional analytic philosophy, which brought metaphysics back and ignored science. Writers like Hanson argued that perception was theory-impregnated. The idea of conceptual schemes was used to make sense of radical historical changes: this was the constitutive side. Toulmin introduced the notion of ideals of natural order: the regulative side.

Where does Nowak fit into all of this? What does idealization mean? In my crude way, I will try to make sense of it, as an approximation. I take it that Nowak was pursuing a variant on, and solution to, the issues left behind by neo-Kantianism, which was novel and sensitive to several of these issues, but worked in a different way. The core problems with neo-Kantianism were the problem of underdetermination and the secondary problem that resulted from attempts to solve this problem, circularity. This takes some explanation, which will be cryptic. But I take it that idealization is a variant of what Cassirer's teacher Hermann Cohen invented as the transcendental method. The “method” was to take a body of intellectually organized material and to identify the necessary presuppositions of the concepts and conceptual relations in this body, whether it was law or physics,

or something else. The problem with the method was underdetermination: it produced too many results, meaning “necessary presuppositions” that differed, and therefore could not each be “necessary.” One could thus not permit underdetermination without abandoning the transcendental method itself.

The fatal problem of underdetermination was solved in a backhanded way in particular cases by redefining the subject matter in such a way that only one result fit. This produced a new problem of circularity, because now one had, for example, multiple accounts of what law was, each with its own necessary presuppositions. The only grounds for accepting one account over another was the fact of law corresponding to the definition of law that had been invented to identify the content that was supposed to have necessary presuppositions. The result of the procedure thus was multiple conflicting accounts of law, or history, or whatever subject one was subjecting to this method. There was a solution to this problem: to identify a non-circular fixed point to define the subject to be analyzed. This is what Hans Kelsen did in identifying “positive law,” i.e. the actual law, as the subject, rather than an essence of law intuited by the analyst.

As Borbone presents him, Nowak is instead concerned with a different circle: one in which a hypothesis of a simple law is idealized (and not inductively derived or abstracted) from a limited set of facts, and then concretized by successive additions which allow the exceptions to be accounted for in less general terms, to the point that it is closer to reality, meaning without exceptions. Rather than transcendently necessary presuppositions, an idealization is a simplification of a complex domain which allows the step of concretization. The notion of idealization is different from induction or from a conjecture of a true theory in the Logical Positivist or Popperian sense, because it is known not to be “true,” but merely to be a good approximation to a more complex truth, which is not going to be a true theory but a version of the idealization which is modified through a process of concretization or specification with conditions which make it fit particular domains. This is presented as a general model of scientific reasoning, in conflict with falsificationism or with Hempel-like accounts of law and confirmation, which do not allow exceptions from general principles.

The idealizations we arrive at are in Nowak's account highly general. So were those that interested the Logical Positivists and Cohen's initial work in neo-Kantianism. We are transfixed in these cases by general laws of physics. This may be a bad model of science in general, and even of physics. But the idealization account closely resembles later accounts of *models*.

In these later accounts, it is fine to have a general predictive principle which one knows to be "false" in the strict sense, or "artificial," and to use this principle in a model which includes various corrections. These models do not purport to be "general" in the sense of general laws, but are predictive devices which have an "apply where they apply" character. They hold under conditions that are unknown or not specifiable. These models typically involve a scientific law or principle, or at least a known causal relation, which is grounded outside of the model, normally taken from existing science. The model is more complex, and includes other variables.

Oftentimes, the interest of the modeler is in the deviation of reality from simple forms of the model, and the additions that need to be made in order to make the model predictive for a particular domain. The process of refining the models is parallel to concretization. The modeler is also concerned to identify as much as possible where it fails to apply and what corrections or additions need to be made to make it apply in different settings. But a model can be useful for prediction in its original domain, without this knowledge, which is hard to get and normally not relevant for the purposes of the modeler.

By the concept of idealization, however, Nowak, wants to account for the laws themselves, i.e., something universally valid, not mere models. So what are idealizations? His answer is that idealization is a procedure in which we "put in parentheses" aspects of phenomenal reality that are considered secondary, ... instead operationalizing functionally those facts that are considered essential.'

Borbone calls idealizations "hypotheses," which allows us to at least focus the issue. Concretization is a procedure that does not test, but rather refines the idealization and makes it empirically relevant and more adequate. In some sense this resembles improving hypotheses. But in another sense it does not. The issue is with the truth claims, or the uniqueness claims, of the idealization. With the neo-Kantians, the issue is clear: the

transcendental method, to identify something “necessary,” needed a unique result. That at least gives us a surrogate for “essential.” And there is an analogue to this in Marxian talk about laws of history and their validity in “the last instance,” which makes other apparent laws into merely historical or ideological constructions. In another sense they resemble laws with *ceteris paribus* clauses, in which concretization fills out the list of things that have to be equal. These laws are usually assumed to have some unique validity apart from their instances. But it is not clear that Nowak’s idealizations need to be, or can be, unique.

Does this matter? If we abandon the quest for uniqueness, what do we have? Something familiar: an ideal-type in Weber’s sense. These apply where they apply, are not unique representations of reality and only fit approximately, and allow for explanations of why they deviate from reality. Weber says, similarly to what Nowak says about caricature, that the elements are intentionally accented in these models. Nowak’s model of the cycles of repression and liberalization under Communism fits this nicely. His comments on the explanation of action could have come from Weber himself. Similarly for the idea that knowing where an idealization applies is an inductive matter. The difference, as Borbone notes, is that Weber’s conception is instrumental rather than essentialist or realist. So it does seem that Nowak’s idealizations need to be unique in order to differ from ideal-types. And this returns us to the neo-Kantian problem: is there are way of arriving at a unique essence without circularity?

Borbone puts the issue differently when he says that

Thanks to the idealizational approach, science abandons the dogma of objectivity and reductionism typical of the positivist image of science, since we are aware that the scientist does not aim to give us a perfectly faithful representation of what the world is, but rather an image as approximate as possible to it. (Borbone 2021, 167)

But one can get as close to faithful representation as possible from multiple directions, and from different starting points. That is the lesson of modeling. So there is something missing here: essentialism. I am skeptical about the idea of essences here. I would put things differently. Nowak gives us a rational reconstruction of the task not of discovery but of theorizing, a task

which goes beyond and to some extent against the data to produce a clearer result, which is then corrected by empirically grounded revisions.

The term essential, however, raises questions. What appears to us as essential in a model, or a neo-Kantian transcendental inquiry, seems to depend on us, on our purposes and tacit preferences as much as on the thing itself. If we are concerned with understanding, it is one thing, if we are seeking validation for our ethical or religious opinions, another, intervention, prediction, operations research yet other things, and other essences. The logical positivists, phenomenologists, and other thinkers in the fall-out from the demise of neo-Kantianism all tried to escape from this kind of relativity and undetermination. So, I suspect, did Nowak. But none of them did.

References

- Borbone, Giacomo. 2021. *The Relevance of Models. Idealization and Concretization in Leszek Nowak*. München: Grin Verlag.