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COMPTE RENDU:
J. SYMONS, O. POMBO
& J.M. TORRES (EDS.)
OTTO NEURATH AND
THE UNITY OF SCIENCE



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 JOHN SYMONS, OLGA POMBO, AND
 JUAN MANUEL TORRES (EDS.) 2011.
 OTTO NEURATH AND THE UNITY OF
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Otto Neurath has become a key figure in the historical reconsideration of logical empiricism. Neurath's work clearly departs from textbook presentations of positivism and is characterized by a strict anti-foundationalism, focus on the special sciences, and political activism. A closer consideration of Neurath's philosophy and his campaign for the "Unity of Science" is highly relevant for contemporary philosophy of science. On the one hand, Neurath's ideals of unification and physicalism provide clear links to postwar analytic philosophy. On the other hand, Neurath's non-reductive and anti-metaphysical account challenges orthodox models of ontological and theoretical unification. The edited volume *Otto Neurath and the Unity of Science* not only aims at setting historical records straight but also at evaluating the relevance of Neurath's project for contemporary controversies about unification. Part I is concerned with historical aspects and includes a previously unpublished essay by Neurath as well seven articles on Neurath in his historical context. Part II focuses on current debates and includes nine essays on the prospects of unification in science.

The first part begins with Neurath's essay "Unity of Science and Logical Empiricism", that was written as a response to Horkheimer's attack on positivism in the *Zeitschrift für Sozialforschung* (1937). Neurath sent the manuscript to Horkheimer in New York but the latter refused to publish it in the *Zeitschrift*. This previously unpublished essay and Karlheinz Barck's helpful commentary provide an excellent starting point for the discussion of Neurath's ideal of unification. Jan Sebestik's and Olga Pombo's articles show that Neurath's unity has little to do with the reductive physicalism of postwar analytic philosophy. Neurath does not understand unification in terms of reduction to a fundamental physical theory but in terms of an encyclopedic model. As Sebestik puts it: "Although the Encyclopedia is written in the unified language, it is pluralist [because] it sets out partial and local systematizations, sometimes even in competition with each other" (55).

The first part of the book not only develops a nuanced picture of Neurath's work but also of its relation to other logical empiricists. Ahri-Veikko Pietarinen's contribution focuses on the differences between Carnap's and Neurath's accounts of language while Thomas Bonk discusses three different accounts of "reality" in the philosophy of Schlick, Carnap and Neurath. Finally, Gideon Freudenthal and Tatiana Karachentsev offer a detailed account of the almost forgotten Gregorius Itelson, who influenced Neurath during his time in Berlin. Taken together, the articles constitute a fascinating mosaic of the historical Neurath and challenge common philosophical alliances and differences. The clearest example of this is the article "Keeping track of Neurath's Bill" by Sheldon Steed, Gabriele Contessa and Nancy Cartwright. The authors defend Cartwright's pluralist and anti-reductionist account of a "dappled world" in classical physics. However, Neurath's unity of science does not appear as an opponent but rather as a potential ally in this pluralist framework. Cartwright et al. argue that Neurath's "view of unity [...] resonates with the focus of this paper, a view that attempts to make sense of the domain of scientific inquiry while doing justice to the ambiguities and uncertainties that science necessarily leaves untreated" (97).

The collection of historical articles continues a trend of re-describing Neurath as a politically engaged encyclopedist who has little in common with caricatures of positivism (cf. Cartwright et al 1996). While this historical reconsideration is well-justified, there is also a risk of presenting Neurath's philosophy as far more moderate and conciliatory than it was intended to be. The editors introduce Neurath's unity program by arguing that his "goal with regard to the encyclopedia was relatively simple: to build a useful tool for reciprocal cooperation and understanding among scientists" (5). One may worry that this presentation smoothes the edges of Neurath's philosophy too much and leaves too little of Neurath's self-described "radical standpoint" (1983, 51) and "scientism [that] knows no 'philosophy', 'no epistemology' with special propositions" (1983, 115).

In fact, Neurath's disagreements with Horkheimer would provide an excellent starting point for a consideration of Neurath's more radical claims that go beyond mere praise of interdisciplinarity and will still raise philosophical eyebrows. For example, in his response to Horkheimer, Neurath not only requires that "all scientific theories are testable on the basis of sentences which contain only space-time related expressions" (25) but also questions the intelligibility of many projects in traditional and critical theory (24). Unfortunately, only Sebestik's contribution engages with the controversial elements of Neurath's philosophy and none of the articles attempts to extend the nuanced historical perspective to Neurath's critics. Instead, non-positivist contemporaries only make an appearance as "anti-modernist and romantic thinkers" who promoted "misology and obscurantism" (1). Of course, this does not do justice to a philosopher like Horkheimer whose early materialism overlapped with Neurath's positivism (cf. Korthals 1985) and who combined his attack on the Vienna Circle with a critique of an "anti-scientific perspective" that "escapes in metaphysical dreams". "The trivialization of science acts as an opiate in private life and as a fraud in society" (Horkheimer 1937, 8-9). It also doesn't do justice to the broader debates about the relation of science and society in interwar Germany (e.g. Harrington 1999).

Neurath's philosophy proposed a controversial "scientific world-conception, which absorbs everything that can be experienced" (Neurath 1983, 32). He did not *only* endorse a moderate ideal of interdisciplinarity and he did not *only* reject overt spiritualism and romanticism. The collection of historical essays continues important work in developing an alternative to old caricatures of positivism and stresses similarities with contemporary philosophy of scientific practice. However, it does not grasp the opportunity of using the Horkheimer-response to advance current debates (e.g. O'Neill and Ueberl 2004, Richardson 2009) through a closer look at the controversial aspects of Neurath's unification campaign.

The second part of *Otto Neurath and the Unity of Science* discusses the prospects of unification in contemporary philosophy of science. Postwar philosophy moved away from the Neurathian version of unity by focusing on theory reduction and ontological physicalism. Given that the mainstream of philosophy of science has grown increasingly skeptical of reductionist and ontological formulations of scientific unity, a reconsideration of Neurath is well-deserved.

The articles of the second part provide a range of competing perspectives on unification. Daniel Andler's proposal of a "federalist conception" of unity strongly overlaps with Neurath while Robert Causey insists on a reductive picture "even if an ultimate 'super science' may not be achievable" (170). Mario Bunge suggests that science is unified because it studies "a single reality" with a "single general method" (145) while Jan

Woleński describes science as unified through a moderate naturalism (196). Furthermore, Ángel Nepomuceno, Fernando Soler, and Atocha Aliseda try to find unity in the shared logical tools of the sciences (210). Finally, the contributions by Juan Manuel Torres, Hossein Sheykh Rezaee and Andrés Rivadulla all suggest that discussions of unity and disunity may require a more specific look at individual disciplines or types of special science laws.

The disagreement among the authors on how to characterize scientific unity is striking and provides a helpful illustration of the current state of debate. "Unity" is obviously a highly ambiguous term that can be specified in terms of diverse epistemic, metaphysical, methodological, and social features. The real challenge is to come up with a specification that is not only plausible but also philosophically interesting. It is somewhat surprising that only Andler contributes to current attempts (e.g. Potochnik 2011) to revive Neurath's model of "encyclopedic unity". The reluctance of most authors to adopt a Neurathian model reflects the difficulty that mere endorsements of encyclopedism and interdisciplinarity do not provide a sufficiently challenging notion of unification in contemporary philosophy of science. At least two responses are possible. On the one hand, one can follow Carlos Ulises Moulines' contribution that rejects the availability of a notion of "unified science" that is still philosophically relevant. On the other hand, one may also argue that Neurath's notion of unity provides resources beyond interdisciplinarity that remain challenging in contemporary philosophy of science. However, this would require a stronger focus on Neurath's genuinely controversial claims, such as the emancipatory function of a "scientific world-conception" and the firm rejection of supposedly unscientific ways of thinking in academia and everyday life. *Otto Neurath and the Unity of Science* does not settle these issues and does not leave the reader with a clear sense of direction in current unity debates. However, the book provides an intriguing diversity of perspectives that illustrates the relevance of a continued debate about the prospects of scientific unification.

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