

Axiomatization of Otto Neurath's Encyclopedism

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Neurath's Encyclopedia Concept, or How to Unify Science

Abstract

We may say that Neurath's main philosophical program was to “fully socialize” science (die Wissenschaft “vollsozialisieren”), in analogy to his ideal of “fully socializing” society in the heady days of the Bavarian Soviet Republic in 1919. Inspired by the social utopianism of his beloved mentor, Josef Popper, Neurath felt strongly that human improvement required the propagation of science throughout society in the tradition of the enlightenment. Universities have been a principle medium for the creation and transmission of knowledge, but Neurath chose a medium which could be developed and maintained independently of universities: the publication of an encyclopedia.

Such an encyclopedia had not only the goal of presenting all knowledge of a given age, but also to demonstrate how the knowledge of different areas was related. The relationship was, Neurath claimed, intimate indeed, since all knowledge was knowledge of nature and was hence essentially one. This was the core idea of Neurath's Unified Science, which was supposed to be constructed on a physicalistic basis—using just the observable concepts of physics—which rejected the transcendentalism of theology and was a more refined form of socialist materialism. This program sounds very systematic, and indeed monolithically rationalist. For example, it is reductionistic, since it assumes that psychology and sociology are branches of physics, at least conceptually; and the reduction would be perfected when psychological and sociological laws (of learning, observation, running institutions, etc.) are reduced to physical laws as well.

The crux of constructing an encyclopedia, however, is deciding on what represents the standard knowledge of an age. Here Neurath had problems, for there were two souls in him struggling with each other: Authoritarianism and Antiauthoritarianism, the latter of which emphasized fallibilism and was aimed particularly against pseudorationalism. Neurath of course understood that decisions to accept contributions for publication represented social power—after all, the encyclopedia was to be a central organ of social progress. However, power can

easily be misused, leading to oppression and chaos. For this reason, Neurath refused to grant final authority to any encyclopedia, but rather encouraged many encyclopedias to grow separately, hoping perhaps that healthy competition would improve the product.

Neurath emphasized this so much that it sometimes seemed as if he utterly opposed all systematization for fear it would restrict freedom—which was his strongest motive toward the end of his life, when he opposed the regimented Republic of Plato, but also the logical systematization of Carnap's semantics. But if many encyclopedias develop in parallel, we have problems: social decisions requiring coordinated effort (e.g. planning railroads) cannot be solved before a particular encyclopedia is chosen for consultation; developing encyclopedias in parallel would also incur wasted effort and the use of less qualified authors. Neurath's critics felt that his notion of Unified Science was therefore rather empty. It is therefore necessary to explicate a concept of encyclopedia which optimizes the goals Neurath had in mind and minimizes the difficulties. This has to be done by establishing principles for organizing encyclopedias in an axiom system, which would have to involve an acceptance logic, also called a logic of defeasible reasoning.

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