The Large Scale Structure of Logical Empiricism: Unity of Science and the Elimination of Metaphysics

Greg Frost-Arnold†‡

Two central and well-known philosophical goals of the logical empiricists are the unification of science and the elimination of metaphysics. Textual analysis shows, however, that these two apparently distinct planks of the logical empiricist party platform are actually intimately related. From the 1920s through 1950, one abiding criterion for judging whether an apparently declarative assertion or descriptive term is metaphysical is that that assertion or term cannot be incorporated into a language of unified science. I explore various versions of this criterion throughout the works of Carnap and Neurath.

1. Introduction. Two central planks of the logical empiricist party platform are the unity of science thesis and the rejection of metaphysics. These two topics likely appear distinct to philosophers today. However, the central contention in this paper is that these two ideas are intimately intertwined in the thought of many logical empiricists. Attention to the texts of central logical empiricists on the unity of science and the elimination of metaphysics reveals that, metaphorically speaking, these goals are two sides of the same coin. More prosaically, in different logical empiricists' writings, from the 1920s through 1950, we find the following criterion (or an approximation thereof) at work for detecting metaphysics: an apparently meaningful utterance is metaphysical if and only if it cannot be incorporated into 'unified science' [*Einheitswissenschaft*]. In this essay, I will focus on Carnap and Neurath, for they wrote most extensively on both unity of science and the elimination of metaphysics, and their work

†To contact the author, please write to: Department of Philosophy, University of Nevada, Las Vegas, Box 455028, Las Vegas, NV, 89154; e-mail: Gregory.Frost-Arnold@unlv.edu.

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is prominent among both their contemporaries and current students of logical empiricism.

2. Unity of Science. What do the logical empiricists mean by the phrase 'unity of science'? The fundamental fact to appreciate is that the unity in question is *not unity of laws or theories, but rather unity of language*. This point has been increasingly recognized by scholars, e.g., Creath (1996), so in this section I will offer only a limited defense. First, to be explicit, Carnap, Neurath, and others stress repeatedly that their thesis is *not* that the results of biology, psychology, sociology etc., can (or will) be ultimately derived from a single fundamental theory (presumably physics). Rather, the logical empiricists' aim is to construct a *language* that can simultaneously express biological, psychological, sociological, and physical claims. Carnap emphasizes that the reduction of, e.g., biological laws to chemical or physical laws is an open question: "there is at present no unity of laws. . . . On the other hand, there is a unity of language in science, viz., a common reduction basis for the terms of all branches of science" (1938, 61). Neurath's views are similar. He does not demand a unity of laws: "Having a Universal Jargon [his term for his language of unified science] in common does not imply that the same scientific 'laws' have to be valid in the various fields of scientific research" (1946, 81).

Neurath is more antagonistic than Carnap to a unification of theories or laws. Neurath claims the desire to derive all scientific theories from a few general laws constitutes a fundamental error of Cartesian and Leibnizean rationalism. He stresses that the model for unified science is not a *system*, but an *encyclopedia*: the claims of an encyclopedia, unlike the claims of a system, are not all derivable from a few precise axioms. For example, in the first article in the *International Encyclopedia of Unified Science*, Neurath (the *Encyclopedia*'s editor-in-chief) writes: "the great French Encyclopedia," whose work the new *Encyclopedia* continues, "was not a '*faute de mieux* encyclopedia' in place of a comprehensive system, but an alternative to systems" (1938, 7; cf. 2, 16, 20). This rejection of the single axiomatized system of knowledge in favor of a loosely connected encyclopedia is a *leitmotif* running throughout Neurath's corpus.

What the logical empiricists' unified science requires is not a unity of laws, but something weaker: unity of *language*. We saw Carnap explicitly state this in his quotation immediately above. For Neurath as well, the crucial kind of unity is linguistic: "We can use the everyday language which we use when we talk about cows and calves throughout our empiricist discussions. This was for me the main element of 'unity'" (1983, 233). Philipp Frank provides perhaps the simplest formulation of the unity of science thesis: "there is one and the same language in all fields" of science (1947, 165). In *Logical Syntax*, Carnap offers the following more

precise characterization of the thesis: every language of particular sciences can be translated without loss of content into one language ([1934] 1937, 320). The next question to ask is: which language or languages fit this bill? In *Logical Syntax*, Carnap states that the thesis of physicalism is precisely that the physical language can perform this function of an overarching language for all of science.[1]

Neurath, on the other hand, advocates using the 'physicalist' language, which he also calls 'universal jargon'; this language is *not* restricted to the vocabulary of physics, as it is for the early Carnap. Neurath describes his Universal Jargon as "an everyday language that avoids certain phrases and is enriched by certain other phrases" (1983, 208); specifically, it 'avoids' metaphysical terms, and 'is enriched' by technical terms (1983, 91–92).

Finally, the logical empiricists' unity of science thesis is not refuted by Suppes' observation (1978, 5) that the actual terminology used in various subdisciplines of the sciences is increasingly divergent, with each subfield developing its own jargon. Other scholars (e.g., Creath (1996)) have already noted that neither Neurath's nor Carnap's unity of science theses claim to provide a descriptive account of science as it is actually practiced. In fact, Carnap explicitly agrees with Suppes' position in Section 41 of the *Aufbau*.[2] Carnap, in his most extended defense of the unity of science thesis ([1932] 1934), argues only that the various languages of science *could*, in principle, be translated into a single physicalist language, not that they *are* so translated. In sum, the logical positivists' unity of science thesis asserts that there exists a language in which all (scientific) knowledge can be couched, but not that this language is actually used, on a day-to-day basis, by scientists.

3. The Elimination of Metaphysics. The logical empiricists are (in)famous for assuming an antimetaphysical stance. All the major figures in the group, as well as most of their patron saints, railed against metaphysics. But how exactly did the logical empiricists purport to identify and excise metaphysical claims and concepts? This question becomes especially press-

1. "The thesis of *physicalism* maintains that the physical language is a universal language of science—that is to say, that every language of any subdomain of science can be equipollently translated into the physical language. From this it follows that science is a unitary system within which there are no fundamentally diverse object-domains, and consequently no gulf, for example, between natural and social sciences. This is the thesis of the *unity of science*" ([1934] 1937, 320).

2. "[A]s far as the logical *meaning* of its statements is concerned, science is concerned with only one domain. . . . On the other hand, in its practical procedures, science does not always make use of this transformability [of statements into one domain] by actually transforming all its statements" ([1928] 1967, 70).

ing if one agrees with Michael Friedman's assertion that "metaphysical neutrality . . . is . . . the essence of Carnap's position" (1999, 110). Alan Richardson shares this view: "if there is one defining feature of Carnap's philosophy, it is the claim that both science and philosophy can be done in a way that is neutral with respect to the traditional issues of metaphysics" (1992, 45). Such claims need not be restricted to Carnap alone; metaphysical neutrality is a central goal for virtually all prominent logical empiricists.

So how do the logical empiricists expunge metaphysics from intellectually respectable discourse? The stereotypical view, promulgated by Ayer, is that the logical empiricists eliminate metaphysics simply via a comprehensive application of the verificationist criterion of meaning. (This view has already been discounted somewhat in Richardson 1992, 59 and, more indirectly, in Creath 1982.) As I hope to make clear, the verificationist criterion of meaning[3] does play *some* role in logical empiricist rejections of metaphysics—however, exclusive focus upon it leads to a fundamentally incomplete and therefore distorted image of how the logical empiricists present their attack on metaphysics. A fuller and more accurate picture of the logical empiricists' antimetaphysical project requires keeping their unity of science thesis clearly in view. One rough criterion for separating meaningless metaphysics from cognitively significant discourse that holds over decades for many logical empiricists is the following:

> (M) An apparently declarative sentence or apparently descriptive term is *metaphysical* if and only if that (apparent) sentence or term *cannot be incorporated into a total language of science*.

Failures of incorporation into unified science usually come in two varieties: a metaphysical claim is either (i) *ungrammatical*, or (ii) grammatical but *isolated*. Case (ii) arises when a grammatical sentence contains metaphysical terms.

I must stress that (M) is an *approximation*. No formulation of its brevity can accurately characterize the logical empiricists' views on metaphysics and unity of science, for the historical situation is fairly complex. Different logical empiricists held somewhat different views, and a single thinker's ideas about metaphysics often shift over time. Furthermore, the *bi*conditional (M) usually does not appear in the texts as such. Rather, a given logical empiricist virtually always uses only *one* direction of implication at a time, even though that thinker might even use the other direction elsewhere in the very same work. So, (M) should be understood as a

3. As well as the later, more liberal theory of empirical meaning Carnap proposes in "Testability and Meaning," where verifiability is replaced by the weaker notion of confirmability.

slogan, from which actual formulations deviate to a greater or lesser degree.

The next task is to present a detailed account of the logical empiricists' rejection of metaphysics across several texts. By examining several 'variants' of (M), we can determine to what extent (M) captures a basic element of logical empiricist thought, as well as what complexities and nuances (M) elides. In what follows, I focus primarily on Carnap, for he, more than any other logical empiricist, elaborates detailed positions on both the unity of science and the rejection of metaphysics. I then show that Neurath's texts support attributing (M) to him as well, though his expression of the rejection of metaphysics lacks the fine-grained particulars of Carnap's.

Let us begin with Carnap's treatment of metaphysics in the *Aufbau*. How does Carnap there identify metaphysics? Carnap discusses the concepts of essence, reality, and the mind-body connection (among others), and concludes that each, if taken in its customary sense, is metaphysical. Each is deemed metaphysical on the grounds that it cannot be incorporated into any 'construction system' [*Konstitutionsystem*] of the sorts Carnap describes and develops in the *Aufbau*. We can phrase Carnap's criterion for metaphysics in the *Aufbau* as follows:

> (M_{Aufbau}) An expression is metaphysical if and only if it contains concepts that cannot be constructed in a constructional system.

This connection between nonconstructability and metaphysics is clear in Carnap's treatment of the metaphysical 'problem of reality':

> The concept of reality (in the sense of independence from cognizing consciousness) does not belong within (rational) science, but within metaphysics. This is now to be demonstrated. For this purpose, we investigate whether this concept can be constructed, i.e., whether it can be expressed through objects of the most important types which we have already considered, namely, the autopsychological, the physical, the heteropsychological, and the cultural. ([1928] 1967, 282)

To show that a concept is metaphysical, it must be shown that that concept cannot be constructed from *any* basic objects—not just from phenomenal, 'autopsychological' ones, as Carnap develops most fully in the *Aufbau*. I believe this shows that, for Carnap, constructability within a system of knowledge is a more fundamental criterion than verifiability for determining whether a concept or claim is metaphysical. Other metaphysical claims are shown to have the same property; none can be incorporated into a constructional system of concepts.

Two further notes about the *Aufbau*: first, the nonconceptual nature of metaphysics is directly connected to the logical empiricists' well-known

rejection of *intuition*. Carnap writes: "metaphysics does not wish to grasp its object by proceeding via concepts . . . but immediately through intuition" ([1928] 1967, 295); 'intuitions', for most logical empiricists, are the ineffable contents of phenomenal consciousness. The ineffability of so-called metaphysical knowledge is stressed by Schlick ([1926] 1978). Second, the *Aufbau* lacks the claim that many sentences of metaphysics are ungrammatical. This idea, drawn from Wittgenstein's *Tractatus*, does not come into prominence in Carnap's writings until after the Vienna Circle reads the *Tractatus* intensively together.

Carnap's most focused attack on metaphysics is "Overcoming Metaphysics through the Logical Analysis of Language" ([1932] 1959). Here Carnap clearly draws the distinction, described above in (M), between the two kinds of pseudosentences: (i) ungrammatical strings of symbols, and (ii) grammatical strings whose terms cannot be connected to the meaningful terms and sentences of the language. Let us consider each in turn. Carnap begins "Overcoming Metaphysics" by noting that there have been several attempts throughout the centuries to abolish metaphysics from the intellectual landscape. However, Carnap claims that "only" with the "development of modern logic" can "the decisive step be taken" in this pursuit ([1932] 1959, 61). Why? A sentence (even if it contains only meaningful words) is meaningless, i.e., metaphysical, if it cannot be expressed in a calculus such as that found in *Principia Mathematica*: "metaphysics could not even be expressed in a logically constructed language" ([1932] 1959, 68).[4] This conception of metaphysics is fundamentally Tractarian: whatever cannot be said in the logically ideal symbolic language of the *Tractatus* is meaningless metaphysics. Carnap and Neurath explicitly acknowledge that their view on the elimination of metaphysics in the early 1930s "was in essentials that of Wittgenstein" (Carnap [1934] 1937, 322; cf. Neurath 1983, 54).

So much for Carnap's account of metaphysical sentences; when is a *term* metaphysical, i.e., meaningless? Carnap takes us on a brief detour through sentences, for a term is shown to be meaningless by showing that atomic sentences containing that term are meaningless. He asserts that the question "What is the meaning of [an atomic sentence] s?" is equivalent to each of the following two questions:

1. What sentences is S *deducible* from, and what sentences are deducible from S?

4. Alan Richardson has stressed the importance of this method of eliminating metaphysics: "The universal applicability and expressive power of the new logic does all the serious work in the rejection of metaphysics" (1998, 26–27).

2. Under what conditions is S supposed to be true, and under what conditions false? ([1932] 1959, 62)

Here again, we see a version of (M). A sentence (and thereby its constituents) is shown to be meaningful by incorporating it into a larger 'inferential network'[5] of claims ((1) captures the syntactic aspect of the network, (2) the semantic). This inferential network is drawn from the language of science. (Carnap's example is: x is an arthropod if and only if (x is an animal and x has a segmented body and x has six legs).) Grammatical strings that cannot be placed within such a network, Carnap maintains, contain metaphysical terms. But, one may wonder, what guarantees that *any* sentences in the larger inferential network are meaningful? Couldn't we construct a network of nonsense words?

To answer this question, Carnap appeals to the verificationist criterion of meaning. Carnap states that 'What is the meaning of S?', and hence Questions (1) and (2) above, are also equivalent to "(3) How is S to be *verified*?" ([1932] 1959, 62). Carnap says this question is answered by specifying the deducibility relations between *S* and the "so-called 'observation sentences' or 'protocol sentences'. It is through this reduction that the word acquires its meaning" ([1932] 1959, 63). This indicates that Carnap is making the following two assumptions. First, there exists some set of privileged sentences whose meaningfulness is uncontroversial, assumed, or somehow otherwise guaranteed (this set is the 'observation' or 'protocol sentences'). Second, an arbitrary sentence *S* is meaningful only if *S* is nontrivially inferentially related to this other set of sentences. Metaphorically, the meaningfulness of the semantically privileged sentences 'filters down', via inferential relations, to *S*. This view about meaning might be called 'semantic foundationalism': just as an epistemic foundationalist holds that there are 'unjustified justifiers' that function as the ultimate source for all claims' justification, a semantic foundationalist holds that there are sentences and/or terms that function as the ultimate source for the meaning of all sentences. We arrive at the full-fledged verification criterion of meaning (as well as the liberalized empiricist meaning criteria which appear later)[6] by adding to the two assumptions of

5. Excluding purely logical implications: 'God exists' entails 'God exists or water boils at 100 degrees Centigrade'.

6. The difference between the earlier, verificationist criterion of meaning and the later, liberalized ones (e.g., in "Testability and Meaning") is in the second assumption: the verification criterion requires that observation sentences *entail* every meaningful sentence, whereas later criteria allowed weaker logical relations to hold between the observation sentences and other meaningful sentences.

semantic foundationalism a third: observation sentences[7] (and/or terms) are members of the set of semantically privileged sentences (and/or terms).

We can now see more clearly the respective roles empiricist meaning criteria and a unified language of science play in eliminating metaphysics. Meaning criteria sanction treating the observational sentences and terms as uncontroversially meaningful. Once we have that assumption, then to determine whether a given sentence is meaningful, we must determine whether it is properly inferentially related to the semantic foundation. But from where are these inferential relations drawn? They are supplied by the language of science, as Carnap's arthropod example above makes clear. If we have a total language of science in which the observational terms and sentences are properly inferentially related to rest of the scientific language, then all scientific claims are guaranteed to be meaningful. Furthermore, the assumption that certain sentences are uncontroversially meaningful offers a solution to the problem, mentioned above, of constructing an inferential network of meaningless strings. In short, Carnap needs both an empiricist criterion of meaning and a total language of science in order to eliminate all metaphysical claims while preserving all cognitively significant ones: the meaning criterion guarantees that the entire inferential network will not be meaningless, and the language of science, by exhibiting the inferential relations between the semantically privileged sentences and all the other scientific sentences, shows the sentences of physics, biology, and psychology to be meaningful.

As Carnap's philosophical views change over his career, so does his characterization of the metaphysical. In 1934, *Logical Syntax of Language* appears, and with it a slightly modified program for eliminating metaphysics. We find the same basic thesis as in "Overcoming Metaphysics," but with an added wrinkle: the principle of tolerance. In *Logical Syntax*, what counts as metaphysical becomes (to a degree) *language-relative*, as follows:

> (M_{LSL}) An apparently declarative sentence or apparently descriptive term is *metaphysical with respect to a language of science L* if and only if that (purported) sentence or term *cannot be incorporated into L*

where 'incorporation' is understood as before.

7. However, the specific nature of the observation or protocol sentences is, for Carnap, irrelevant to the elimination of metaphysics: "For our purposes we may ignore entirely the question concerning the content and form of the primary sentences (protocol sentences)" ([1932] 1959, 63). Furthermore, two years later, Carnap states that which sentences are protocol sentences is a matter of decision ([1934] 1987).

Carnap describes how the antimetaphysical drive interacts with the principle of tolerance as follows:

> The view here presented {in accordance with the principle of tolerance} allows great freedom in the introduction of new primitive concepts and new primitive sentences in the language of physics or the language of science in general; yet at the same time it retains the *possibility of differentiating pseudoconcepts and pseudosentences* from real scientific concepts and sentences, *and thus of eliminating the former*. [This elimination, however, is not so simple as it appeared to be on the basis of the earlier position of the Vienna Circle . . . . On that view it was a question of '*the* language' in an absolute sense; it was thought possible to reject both concepts and sentences if they did not fit into *the* language.] ([1934] 1937, 322)

This shows Carnap holds that we can still avoid metaphysical pseudoconcepts and pseudosentences, even if we adopt the Principle of Tolerance and thereby reject the notion that there is one single 'correct' language. As in "Overcoming Metaphysics," the 'sentences' that are ungrammatical, and those apparently descriptive sentences that cannot be connected with empirical science are dismissed as pseudosentences, as metaphysics ([1934] 1937, 322). So while there might be more than one acceptable language of science, traditional metaphysical concepts will nonetheless still be excluded, for they will not occur in any language *of science* (even though they might appear in some other, nonscientific language).

Is it reasonable to hold, with Carnap, that what counts as metaphysics is language relative? If we think of metaphysics as *nonsense*, as the Vienna Circle and Wittgenstein do, then the label of 'metaphysical' *should* be indexed to a particular language—for what is meaningful in one language often simply will not be in another. Let us examine a Carnapian example to explore the possibility of the language-relativity of metaphysics. Consider Languages I and II of *Logical Syntax*: Language I, intended to capture the mathematical intuitionist's viewpoint, is weaker than Language II, which is expressively rich enough to capture all of classical analysis. Thus, there are sentences that are grammatical in II, but ungrammatical in I, and hence metaphysical from the point of view of someone using Language I. (For example, a sentence about 'unconstructable numbers' would be a metaphysical pseudosentence in I, but not in II.) As a second example, consider the relation between first-order and higher-order logics: certain sentences of second-order logic would be, on Carnap's criterion, metaphysical in first-order logic (namely, those involving higher-order predicates). Perhaps this relativization of metaphysics to languages reveals something insightful about the way the term 'metaphysics' is used.

For intuitionists *do* find something suspect about the unconstructable numbers of classical mathematics, and some would be inclined to call claims about such entities 'metaphysics'. Heyting, expressing the intuitionist viewpoint, writes: "If 'to exist' does not mean 'to be constructed', it must have some metaphysical meaning" ([1971] 1983, 67). Similarly, philosophers who find second-order logic suspicious call its quantification over properties 'Platonism', after the grandfather of all metaphysicians. Thus Carnap's suggestion, that what counts as metaphysics depends on the language one uses, is borne out in these examples. In sum, in *Logical Syntax*, the conception of metaphysics is, at root, the same as that found in Carnap's earlier works, but modified to accommodate the principle of tolerance.

In 1950s "Empiricism, Semantics, and Ontology," Carnap's basic idea for identifying metaphysics is essentially the same. However, the terminology has shifted slightly: Carnap now speaks of linguistic frameworks. But here again, a claim is shown to be nonmetaphysical by incorporating it into a pragmatically acceptable linguistic framework.

> [T]he concept of reality . . . in internal questions is . . . [a] scientific, *nonmetaphysical* concept. To recognize something as a real thing or event means to *succeed in incorporating it into the system of things . . . according to the rules of the framework*. ([1950] 1956, 207; my emphasis)

The importance of a shared scientific language for identifying metaphysics also recurs here. It is on precisely these grounds that Carnap criticizes philosophers who ask the 'external' question "Are there numbers?":

> Unfortunately, these philosophers have not given a formulation of their question in the common scientific language. Therefore . . . they have not succeeded in giving the external question cognitive content. ([1950] 1956, 209)

And questions without 'cognitive content' are metaphysical. Thus, Carnap's attitude towards metaphysics in 1950 is very closely related to his earlier view; the basic strategy for identifying and eliminating metaphysics remains the same.

So much for Carnap's views on metaphysics; what of Neurath's? Though he eschews Carnap's formal, precise languages in favor of his 'universal jargon' based on everyday language, he shares the fundamental idea found in Carnap: an apparently meaningful sentence or term is met-

aphysical if and only if it cannot be incorporated into unified science. First, the 'only if' direction:[8]

> If it [a proposed scientific sentence] is . . . meaningless—i.e., metaphysical—then of course it falls outside the sphere of unified science. (1983, 58)

And the 'if' direction:

> [S]tatements that through their structure or special grammar could not be placed within the language of the encyclopedia—in general 'isolated' statements, . . . are statements 'without meaning in a certain language'. For these statements the Vienna Circle has often used the term 'metaphysical statements'. (1983, 161)

Note that Neurath mentions the strictures against both ungrammatical and isolated 'sentences'. Where Carnap employs a constitution system or a linguistic framework, Neurath uses an encyclopedic language based on everyday communication instead; but otherwise, their views are very close.

Recall the notion of 'semantic foundationalism' mentioned above: a sentence's meaningfulness is demonstrated by showing that that sentence is connected via inferential relations to sentences whose meaningfulness is given antecedently. Carnap identifies these semantically privileged sentences as the *observational* ones. Neurath suggests a different set of antecedently meaningful sentences. Neurath repeatedly states that unified science should begin from everyday language, with minor corrections. Why? One possible reason is that everyday language is meaningful if any language is; we are more committed to the meaningfulness of everyday language than any other. Thus, if we have to pick a 'semantic foundation', everyday language seems the best we can do. (There are other reasons Neurath starts with everyday language: he values the democratization and popularization of scientific knowledge, and he is suspicious of any philosophical framework that aims to break loose of our present historical situation.)

One might criticize my interpretation of Neurath's claims about the unity of science as follows: a central aim of work in unified science is demolition of the barriers between the scientific study of nature and of the mind; my interpretation misses that aspect entirely. I concede, of course, that Neurath repeatedly and unequivocally urged the value of breaking down disciplinary barriers. But, interestingly, Neurath claims

8. See also 1983, 54, 57, 61, 73, 173. In these texts, Neurath sometimes speaks of 'physicalism' instead of 'unified science', but, for Neurath, "physicalism is the form work in unified science takes in our time" (1983, 56).

that the motivation underlying the separation of the sciences is *metaphysical*. When his program is realized,

> each basic decomposition of unified science is eliminated . . . for example, that into 'natural sciences' and 'mental sciences'. . . . The tenets with which we want to justify the division are . . . always of a metaphysical kind, that is, meaningless. (1983, 68; see also 44, 50, 69)

So, according to Neurath, any assertion used to justify a strict division of the sciences is metaphysical. If the various sciences were unified, then any such assertion would be ruled out. Thus, unified science, which shows disciplinary barriers are not insuperable, eliminates a certain kind of metaphysics—specifically, it eliminates any theory that purports to deal with "a special sphere of the 'soul'" (1983, 73), distinct from the remainder of the spatiotemporal world. Unification of the sciences may be valuable for its own sake, but it also serves to eliminate metaphysics.

4. Conclusion. Thus far, I have argued that, in the writings of central logical empiricists, there is a close conceptual connection between the unity of science thesis and the elimination of metaphysics, and that this connection is captured, to a first approximation, by (M). In closing, I present one piece of evidence that this connection is not merely conceptual, but also *genealogical*. The term 'unified science' [*Einheitswissenschaft*], suggested by Neurath, sprung directly out of the Vienna Circle's collective efforts to eliminate metaphysics. Neurath, recalling the Circle's discussion of the *Tractatus*, explains how he came to introduce the term.

> Eliminating 'meaningless' sentences became a kind of game . . . . But I very soon felt uneasy, when members of our Vienna Circle suggested that we should drop the term 'philosophy' as a name for a set of sentences . . . but use it as a name for the activity engaged in improving given sentences by 'demetaphysicalizing' them . . . . Thus I came to suggest as our object, the collection of material, which we could accept within the framework of scientific language; for this I thought the not-much-used term 'Unified Science' (*Einheitswissenschaft* . . .) a suitable one. (1983, 231)

Thus, the very term 'unified science' arose directly from a desire to rename the antimetaphysical goal of the *Wienerkreis*.

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