Greg Frost-Arnold
Carnap, Tarski, Quine at Harvard: Conversations on Logic, Mathematics, and Science.
Open Court 2013.
257 pages
$34.97 (Paperback ISBN 9780812698305)

The main interest of Greg Frost-Arnold's book for me is that it contains a transcript of Carnap's notes of discussions and thoughts about a project Carnap developed with Tarski and Quine during the time they spent together at Harvard in 1940-1. The German transcript is made from the original notes of Carnap and also translated into English. The question that popped to mind after seeing the title of the book was: During these discussions did Carnap implicitly make what we might call a neo-Wittgensteinian turn? Did Carnap turn away from using logic and empiricism as a universal touchstone or universal norm for the meaningfulness of an intellectual enterprise? Did Carnap begin to treat the different intellectual enterprises as distinct cultures with their distinctive internal norms and standards for meaningfulness? [Not to keep you in suspense, I will interject here with the answer: No. However, I needed Greg Frost-Arnold's decoding and intra-translation from the early logical positivist terminology of Carnap's notes into the current analytic philosophical terminology that Frost-Arnold used in his historical interpretation of the transcripts. "In 1950's "Empiricism, Semantics, and Ontology" … the terminology has shifted: instead of speaking of constructional systems or languages, Carnap now speaks of linguistic frameworks" (130)].

This question of the shift in analytic philosophy from the logical empiricist use of constructed languages as an independent and universal norm for intellectual honesty to the notion of "*linguistic frameworks*" with framework-dependent norms for intellectual honesty, is the main interest for me of the book. So after reading the Preface, where Greg Frost-Arnold says "... another, almost entirely different book could probably be written about the same archival material" (xiii), I turned to the archival material in the Appendix. After making my way, through the English version, with a quick peek at the original German version here and there, I began reading Frost-Arnold's "... attempt to understand those documents, both in terms of their place in the history of analytic philosophy, and of their often surprising philosophical content" (xiii). The question for Frost-Arnold cannot be literally "how does this transcript fit into the history of analytic philosophy?" nor can the question be literally "how does the discussion of Carnap, Tarski, and Quine, transcribed in these notes fit into the history of analytic philosophy?" because these transcriptions did not directly turn into any publication or series of publications. Rather, the question must be more of a general nature: how did these discussions, the ideas that Carnap, Quine, and Tarski threw into the arena of debate, inform their later work, and the development of analytic philosophy at least in the 1940s and later in America? If you read the Appendix where we have the transcription of Carnap's notes, you will see that Tarski directs the discussion to focus on a project that Tarski proposes for the group: a formal language system with a finite system of axioms, rules, and theorems that exhaustively covers science and mathematics—a finite unified language for science and mathematics, which for the logical positivist is all that we can know. Moreover, this language system should be very concrete and specific, without the use of abstract terms—that is, it must be nominalist where all terms only function as names.

When you read through the transcript, you might ask: why did Tarski want to do that—create a formal system that eschews abstract terms and is rigorously axiomatic not just for all of

mathematics, but also for all of science--and why did Quine and Carnap follow Tarski's directives? More generally, you might ask: why did they seek only a specific formal language system according to Tarski's directives or requirements, and not just any language system? For instance, as Frost-Arnold notes, Neurath "... starts with everyday language: he values the democratization and popularization of scientific knowledge, and he is suspicious of any framework that aims to break free of our present historically given situation—which includes our language—and view the world *sub specie aeternitatis*" (132).

Why were Tarski, Quine, and Carnap, unlike Neurath, so fascinated with formal, axiomatic, artificial language systems? How, by 1940, did the development of artificial language systems become a given model, for many if not most of the logical empiricists or logical positivists, or what Kuhn might call, a *paradigm* for the philosophy of science and mathematics?

The main driver for Greg Frost-Arnold's historical study, on a casual reading of the historical section of the book, is that he attempts to answer the specific question of why Tarski's model dominated and why Carnap expressed his discomfort with the model. However, on a closer reading, especially if one reads right through the book to include the final two chapters, 5 and 6, the main driver for Frost-Arnold's historical study is how the focus on the specific project of a finitist-nominalist artificial language fits into the broader philosophical concerns of Carnap, Tarski, and Quine: how to understand the nature of analytic truth, how to avoid metaphysics, and how to build a unified science.

Frost-Arnold observes that Carnap's transcript embodies an "... 'historic' clash of philosophical titans [that] marks the end of Quine's discipleship under Carnap … [in]…arguing about analyticity with Caranp ..." (84). Did the argument about analyticity make the clash *historic*? I think that Frost-Arnold's answers, over-all, yes. Frost-Arnold meticuously and carefully develops his argument for that postive answer. Indeed, Frost-Arnold goes into extensive details in the fifth chapter of the book to explain how Quine's reluctant remarks about Carnap's definition of the analytic as contained in Carnap's transcript, carries the embryo of Quine's rejection of the analytic: "... Quine had rejected Carnap's then-current account of analytic truth by 1942 at the latest, in the immediate aftermath of the 1940-41 discussions at Harvard" (115-6). As far as I can tell, Frost-Arnold implictly holds that Quine's famous paper about what Quine termed "the two dogmas of empiricism", a good ten years after the "clash of philosophical titans" -- Carnap, Tarski and Quine -- at Harvard, in 1940-41 was a watershed within analytic philosophy allowing analytic philosophy to return to "*speculative metaphysics*" and American pragmatism:

> Modern empiricism has been conditioned in large part by two
> dogmas. One is a belief in some fundamental cleavage between
> truths which are analytic, or grounded in meanings independently of
> matters of fact, and truth which are synthetic, or grounded in fact.
> The other dogma is reductionism: the belief that each meaningful
> statement is equivalent to some logical construct upon terms which
> refer to immediate experience. Both dogmas, I shall argue, are ill
> founded. One effect of abandoning them is, as we shall see, a blurring
> of the supposed boundary between speculative metaphysics and natural

science. Another effect is a shift toward pragmatism (20, W.V.O. Quine, 'Two Dogmas of Empiricism',*The Philosophical Review*, Vol. 60, No. 1 Jan., 1951, pp. 20-43).

The "clash of philosophical titans," according to Frost-Arnold, in part stimulated Quine to reject the core tenets of logical empiricism: anti-metaphysics and the need to formally reconstruct science in terms of logico-mathematic systems that "refer to immediate experience" in order to display how science and mathematics have *meaningfulness* or *intelligibility*.

Given that we are now on the other side of Quine's watershed paper where science and metaphysics meet and inform each other, the question arises why did logical empiricism have a mono-focal view of science and mathematics in terms of *meaningfulness or intelligibility* that they thought metaphysics lacks? The answer lies in Frost-Arnold's statement that Neurath's goal for the development of a Unified Science movement was also a driver for Carnap. Carnap's early work "… dovetails nicely with one of Neurath's goals for the Unified Science movement .... **to democratize science by presenting scientific claims in a form everyone can understand**" (33, my emphasis). In the eyes of the logical empiricists, universal understandability depends on how languages produce *meaningfulness* and how formal languages, such as mathematics and Russell's formalization of logic, avoid the obstacles and walls that natural languages create to a universality or a commonality of understanding. However, as Frost-Arnold points out, though the logical positivists thought of metaphysics as nonsense, and tended to use meaningfulness as a criterion for the demarcation of science from metaphysics, the verificationist criterion of meaning is stereotypical and misleading. "The stereotypical view ... is that the logical empiricists eliminate metaphysics via a comprehensive application of the verificationist criterion of meaning" (122). Rather, Frost-Arnold argues, that the logical positivists (excluding Neurath) focused on artificial languages, or formal logico-semantic systems, in general, to explain both how a unified science constructed as a formal logico-system could explain how science is meaningful and metaphysics is meaningless and how a unified science could be constructed.

Going back to my original question: Did Carnap change his mind about the need for an artifically constructed language as a touchstone for intellectual honesty? The answer is, as I said above, no. Moreover, Carnap never changed his antipathy to metaphysics: Carnap's basic idea for distinguishing metaphysics from acceptable forms of discourse is essentially the same as in earlier decades. However, the terminology has shifted ... Carnap now speaks of "linguistic frameworks ... but the basic strategy for identifying and eliminating metaphysics remains the same" (130-1). Analytic philosophy had moved on in the fifties and sixties, and left behind at least one of the three "philosophical titans," namely Carnap.

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