Journal for the History of Analytical Philosophy

Volume 5, Number 7

jhaponline.org

Greg Frost-Arnold. *Carnap, Tarski and Quine at Harvard: Conversations on Logic, Mathematics and Science*. Chicago: Open Court, 2013. 257pp. $49.95 Hardcover. ISBN 978-0-8126-9830-5.

Reviewed by Henri Wagner

Review: *Carnap, Tarski and Quine at Harvard: Conversations on Logic, Mathematics and Science*, by Greg Frost-Arnold

Henri Wagner

Greg Frost-Arnold's complete German transcription of Carnap's notes of his discussions with Tarski and Quine which took place in Harvard during the year 1940–1941 and his English translation of this transcription should be acknowledged as an important contribution to the understanding of the respective contributions of three towering figures of the analytic tradition. He provides us with a fine-grained commentary on these notes which sets them in their historical and philosophical context and constitutes an invaluable resource in order to explore these conversations.

Frost-Arnold chooses to focus on three recurrent themes: finitism and nominalism (chapters 2, 3 and 4), analyticity (chapters 4 and 5) and the unity of science (chapter 6). He approaches the debate on analyticity between Carnap and Tarski and Quine through the main purpose of those conversations, namely the examination of the idea of a language adequate to the expression of science which would satisfy finitist and nominalist conditions. The final chapter aims to show that this discussion contributes to elucidating the idea of an encyclopedic unity of science conceived as a unity of language, not of laws.

Frost-Arnold's book furthers the recent movement in Quine studies which focuses on the genesis and evolution of Quine's philosophy (some of these works make an extensive use of unpublished and archival sources). The discussions with Carnap and Tarski took place at a transitional moment in the development of Quine's philosophy. With the publication of *A System of Logistic* (Quine 1934) and the first edition of *Mathematical Logic* (Quine 1940), some of his most important essays were already published: "Ontological Remarks on Propositional Calculus" (Quine 1966b, 57–63), "Truth by Convention" (Quine 1966b, 70–99), "Set-Theoretic Foundations for Logic" (Quine 1966a, 83–99), "New Foundations for Mathematical Logic" (Quine 1980, 80–101) and "Designation and Existence" (Quine 1939). These constitute a series of first formulations of fundamental themes, ideas or arguments integral to Quine's conception of logic: a first elaboration of his substitutional characterization of logical truth, a first attack on modal logic through the denunciation of the use and mention confusion behind C. I. Lewis's propositional modal logic, a first formulation of the variable/schematic letter distinction, a first vindication and use of the notion of general variables, a first elaboration of the criterion of ontological commitment, a first attack on a notion of analyticity, a first articulation of the reciprocal containment of logic and ordinary langage, a first understanding of logic as (first-order) quantification, a first commitment to an univocal, non-modal and non-relative notion of truth. And all these "firsts" were articulated without being explicitly logically parasitic on self-conscious "naturalist" positions.

Some cornerstones of Quine's philosophy were still not formulated, at least not in his published writings, and notably the conclusions reached in "Two Dogmas of Empiricism" (Quine 1980, 20–46). So, quite properly, Frost-Arnold takes the debate between Carnap and Quine/Tarski on analyticity as an occasion to examine when and why Quine's finally definitively rejected the notion of analyticity. He tries to find a way around P. Mancosu's and R. Creath's conflicting interpretations (114–16). On one side, Creath argues that "it was not until 1947, and then in private correspondence, that Quine came fully and finally to reject Carnap's doctrine that there are analytic truths" (Creath

1990, 31).[1] On the other side, responding to Creath's interpretation, Mancosu argues that "already in 1940–1941 Quine had explicitly rejected the notion of analyticity, and in 1942, he considered that rejection to be already in his 1936 paper 'Truth by Convention' " (Mancosu 2010, 364–65). As evidence for his interpretation, he quotes an unpublished letter from Quine to Woodger, dated from 1942:

> Last year logic throve. Carnap, Tarski and I had many vigorous sessions together, joined also, in the first semester, by Russell. Mostly it was a matter of Tarski and me against Carnap, to this effect. (a) *C[arnap]'s professedly fundamental cleavage between the analytic and the synthetic is an empty phrase* (cf. my "Truth by convention"), and (b) consequently the concepts of logic and mathematics are as deserving of an empiricist or positivistic critique as are those of physics. In particular, one cannot admit predicate variables (or class variables) primitively without committing oneself, insofar to the "reality of universals", for better or worse; and meanwhile C.'s disavowal of "Platonism" is an empty phrase (cf. my "Designation and Existence").[2]

Given that "the historical evidence . . . appears to pull in opposite directions", Frost-Arnold asks which interpretation is the right one.[3] His argumentative strategy consists in giving justice to each interpretation and in showing how to conciliate them in a conceptually and historically coherent picture: whereas in 1942 Quine would have rejected any notion of analyticity close to a Carnapian one, he was still hoping to find and elaborate an empirical and extensional substitute; in 1947 he would have renounced any viable explication of the notion of analyticity, whether it be Carnapian or not.[4]

Frost-Arnold's argumentation is based on the assumption that " 'Truth by Convention' presents a less radical challenge to analyticity than 'Two Dogmas' " (83). Quine would not have dismissed the notion of analyticity as incoherent, meaningless or empty in "Truth by Convention" (82–83). First, relying on Creath's demonstration, Frost-Arnold claims not only that the 1934 "Lectures on Carnap" (Quine and Carnap 1990, 47–103) on the *Logical Syntax of Language* (Carnap 1937) and from which "Truth by Convention" grew out were "abjectly sequacious" (Quine 2008, 398) but also that Quine in his 1937 lecture "Is Logic a Matter of Words?" (Quine 1937) "argues for what he latter calls the 'linguistic doctrine of logical truth', which Quine considers to be part of Carnap's position" (82). Second, whereas in the 40's, Quine was more and more skeptical toward analyticity, he did not yet consider this concept as an incoherent or empty one and moreover had not lost hope of offering an extensional and empirical criterion of analyticity. Consequently, Frost-Arnold naturally asks "what, if anything, prompted the radicalization of Quine's attack on analyticity: why did Quine's view change from the more moderate one found in 'Truth by Convention' to the more radical view of 'Two Dogmas'?" (83).

Both this interrogation and the related diagnosis are disputable, supported as they are by disputable arguments. Let me examine the arguments.

(1) As Frost-Arnold points out, the 1934 Lectures' aim to convey the *Logical Syntax* views cannot be taken as an argument to the effect that "Truth by Convention" is sympathetic to an analyticity-based account of logic and mathematics: even if "Truth by Convention" grew out of the first of the Harvard Lec-

[1] Creath did not state precisely to which passage of the 1947 triangular correspondance between Quine, Goodman and White he is alluding but he has surely in mind the two letters addressed by Quine to White and Goodman, respectively dated 6 July and 7 July, see White (1999, 353–54).

[2] Quine to Woodger, 2 May 1942, Woodger papers, University College London, Special Collection, GB 0103 WOODGER.

[3] Of course, several other pieces of "historical evidence" could be invoked for one or the other interpretation. Concerning Creath's interpretation, see Creath (1987, 1990); concerning Mancosu's interpretation, see for example, Quine (1960, 65 and 67 n. 7) and Quine (1986, 16).

[4] In his review of Frost-Arnold's book, Creath (2014) expresses his agreement with this new interpretation.

tures, Quine could have change his mind. It is worth noticing first that the opening lines of the "Lectures on Carnap" clearly exhibit to what extent Quine's exposition of the *Logical Syntax* could be intelligible only against the background of C. I. Lewis's conceptual pragmatism (Lewis 1929).[5] Hence even if Quine would not have changed his mind between the 1934 Lectures and "Truth by Convention" (although I think he did), since the 1936 essay constitutes a rewriting of "The *A Priori*" (the first of the "Lectures on Carnap"), one could not simply describe those Lectures and "Truth by Convention" as "Carnapian" without further qualification. Already in the 1934 Lectures, by opening his first lecture with an emphasis on the "analytic character of the *a priori*" as brought out by Lewis in the preface of *Mind and the World*, Quine uses a notion of *a priori* completely foreign to Carnap's project. One of the ambitions of the *Logical Syntax* was precisely to dismiss the traditional problem of the *a priori* by showing the deceptive character of the necessary and *a priori* idioms and the possibility of eliminating them in favor of a syntactic notion of analyticity. Still, the most significant departure of Quine's Lectures and essay from the *Logical Syntax* is elsewhere. One of the two basic tenets of the *Logical Syntax*, the principle of tolerance, is not even mentioned whether it be in the 1934 Lectures or in "Truth by Convention".[6] Hence, even if Quine would not have explicitly rejected the Carnapian notion of analyticity at the time of "Truth by Convention", how could he still adhere to a Carnapian conception of analyticity?[7] Concerning the 1937 lecture, it seems difficult to consider it as favorable to the linguistic doctrine of logical truth[8] for at least two reasons. First, Quine located a gap in Carnap's argumentation:

> All processes of deduction in logic, including mathematics, have been reduced in recent times to the iterated application of a few notational operations. Aided by these results, Carnap has succeeded in constructing definitions of *logical consequence* and *logical truth* in purely notational or syntactical terms. One might nevertheless hold that the laws of logic are true not *because* of language, but because of meanings; that the syntactical specifiability of logical truth and logical consequence turns merely on an accidental earmark which our notation imposes. Such syntactical specifiability is thus only a necessary, not a sufficient, condition for Carnap's further doctrine that logic is wholly a matter of linguistic decision. (Quine 1937, 674)[9]

Second, anticipating some of his considerations in "Carnap and Logical Truth", Quine formulates another objection:

> A principal virtue of the doctrine is the clarity with which it explains the *a priori* character of logic. Again, the inseparability of logic from language is hinted by the difficulty of deciding whether certain savages share our logic: for we impose our logic on them through the criteria used in constructing a dictionary of translation. Nevertheless, so long as facts are inexpressible without help of logical connectives involving logical laws, one may suspect logodaedaly in the relegation of logical laws to syntax. (Quine 1937, 674)

Echoing the alternative formulation of the "Truth by Convention"'s regress argument in terms of self-presupposition of the

[5] On the influence of C. I. Lewis on Quine, see Davidson (2004, 237), Borradori (1994, 14, 43–45), Sinclair (2015), Murphey (2012, 6–7, 19), Morris (2017) and Wagner (2016, chap. 1).

[6] Whereas many interpreters emphasize the relevance of the principle of tolerance for a proper understanding of the debate between Carnap and Quine (for example P. Hylton, T. Ricketts, Y. Ben Menhamen or M. Friedman), very few of them notice the deliberate absence of this principle both in the 1934 Lectures and "Truth by Convention". See Friedman (2006, 39) for one notable exception.

[7] To argue this way is not to concede that at the time of "Truth by Convention" Quine and Carnap were talking past together or that there is no real point of contact between Quine's "Truth by Convention" and the *Logical Syntax*.

[8] See Creath's interpretation in Creath (1987, 494).

[9] See also the following passage from the unpublished lecture quoted by Y. Ben Menahem (2006, 231): "[there is no logical transition] from the syntactical definability of logical truth to the conclusion that logic is grounded in syntax, true because of syntax. . . . One might still maintain that logic and mathematics are true by some antecedent necessity of a non-syntactical sort."

primitives (Quine 1966b, 97), Quine here is objecting that the relegation of logic to syntax, one of the main purpose of the syntactic project (Carnap 1937, 2), is nothing more than a mere legerdemain which proves to be the counterpart of a magical conception of syntactical rules.

Before turning to the second argument, I would like to scrutinize two presuppositions apparently shared by Frost-Arnold with Creath regarding the proper reading of "Truth by Convention". One may agree with Creath (1987, 486) on the anachronism of reading the conclusions of "Two Dogmas" into "Truth by Convention". But this does not imply commitment to the view according to which "Truth by Convention" is "more nearly a request for clarification by Carnap than an attack" (Creath 1987, 487) and "Two Dogmas" represents a radicalization of Quine's attack on analyticity.

The first presupposition is that "Two Dogmas", being a radicalization of the more moderate view held in "Truth by Convention", would share its aims and objects, but differ in its conclusion. On this view, whereas "Truth by Convention" would be a request of clarification of the notion of analyticity, "Two Dogmas" would argue for the incoherence and emptiness of the notion. But the respective purposes of "Two Dogmas" and "Truth by Convention" are different. Although the problem examined in "Truth by Convention" is whether it makes sense to consider that logic and mathematics could be made analytic by a procedure of conventionalization, the problem examined in "Two Dogmas" is directed at a notion of analyticity characterized as relying on a notion of cognitive synonymy. This distinction parallels the distinction between the two classes of statements considered as analytic: the logically true statements and the statements which can be turned into logical truths by putting synonyms for synonyms (Quine 1953, 22–23). As in the case in "Is Logic a Matter of Words?" and "Carnap and Logical Truth", "Truth by Convention" is focused on the analyticity-based account of logical truth and not on the notion on which "Two Dogmas" and chapter 2 of *Word and Object* (Quine 1960) are focused. Then it is at least misleading to picture the evolution from "Truth by Convention" to "Two Dogmas" as a "radicalization of Quine's attack on analyticity".

The second presupposition is that the regress argument recorded at the end of "Truth by Convention" is not conclusive at all.[10] Usually taken to be an application of Lewis Carroll's paradox, this argument results in the answer to the initial problem motivating the essay. This problem was to question the sense of the contrast according to which logic and mathematics could be said to be "purely analytic or conventional" whereas the physical sciences are *prima facie* "destined to retain always a non-conventional kernel of doctrine" (Quine 1966b, 70). The final sentence of the essay contains the crucial element of the answer: "as to the larger thesis that mathematics and logic proceed wholly from linguistic conventions, only further clarification can assure us that this asserts anything at all." Given the purpose of the essay, this conclusion is as radical as it could be. In his ulterior writings, Quine will constantly refer back to this conclusion as showing that the variety of conventionalism in logic examined in "Truth by Convention" is "impossible in principle" (Quine 1966b, 108) or "unthinkable" (Quine 1969, xi).

(2) Let us now come back to Frost-Arnold's second argument. Even if Quine, in the 40's, would not have rejected a general notion of analyticity, for all that during the period between 1936 and 1951 he never really made any real and sustained effort to elaborate an alternative and non-Carnapian criterion of analyticity. He simply did not consider himself as having to use any notion of analyticity for dealing with the problems in philosophy of logic and mathematics he tried to face. Quine already

[10] Frost-Arnold never mentions this argument, whether it be for arguing against its relevance in the analyticity debate or for arguing against its relevance for the understanding of "Truth by Convention".

held conceptions that differed from Carnap's on logical notation, truth and logical truth, and on the relation between logic and ontology (see Ebbs 2016). These alternative conceptions are not only logically independant from any analytic/synthetic distinction but also incompatible with this distinction. As the letter to Woodger previously quoted makes it clear, one could not understand the first formulations and uses of the criterion of ontological commitment in "A Logistical Approach of the Ontological Problem" (Quine 1966b, 198–202) and "Designation and Existence" without getting clear that "Truth by Convention"'s conclusions were as radical as they could be. In his formulations and uses of the criterion of ontological commitment, Quine takes it for granted that the analytic/synthetic distinction is empty (See Ebbs 2016 and Wagner 2016, chap. 4, sec. 1). In interpreting this transitional period of Quine's philosophy, one has to distinguish carefully between two varieties of arguments: arguments of superfluity designed to show that such or such conception is not necessary and that alternatives are conceivable; arguments of impossibility designed to show the impossibility or nonsense or emptiness of such or such conception. The formulation of the criterion would not have the relevance Quine granted it in his debate with Carnap if he had not considered himself to be showing the emptiness of the notion of analyticity.

Another point at stake in "Designation and Existence" and discernable in the conversations with Carnap and Tarski is the dependance of the criterion of ontological commitment and its application on a first-order and canonical form of language, what Quine will later calls the canonical notation. In other words, the criterion is at root incompatible with another cardinal notion of Carnap's philosophy, the principle of tolerance. That, for Quine, the canonical form of language is first-order is one recurrent theme of these conservations which proves to have an historical and philosophical significance. Some of these conversations (183–85/235–37) "bear witness to the important shift which took place in logic during this period from type-theoretic languages to first-order languages as paradigm" (Mancosu 2010, 365). The notes of Quine's lecture "Logic, mathematics and science" (147–50/199–201) contain "series of arguments which led to the demise of type-theory as the fundamental background logic in favor of first-order theories" (Mancosu 2010, 370). The availability of these notes and discussions should allow us to better understand why Quine was the first to claim that quantification is all of logic and that there is no room for "second-order" quantification (see Quine 1966a, 258 and Moore 1988, 128; the claims are different even if closely related) and why he considers that logic understood in this way should be acknowledged to take on the status of canonical notation.

None of these preceding reflections and disagreements should obscure the fact that Frost-Arnold's commentary is both useful and stimulating and contains very insightful analyses (for example, on the relation of Carnap to the finitist-nominalist project, on the relation between Tarski and Quine on analyticity or on the idea of unified science as unity of language). Besides the various reviews this book provoked, a book symposium with R. Creath, G. Ebbs and G. Lavers was organized by R. Zach which came out in the journal *Metascience* (2016). That fact testifies the vivid interest that Frost-Arnold's book has already generated and that it should continue to generate in the future.

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References

Ben Menahem, Yemima, 2006. *Conventionalism: From Poincaré to Quine*. Cambridge, MA: Cambridge University Press.

Borradori, Giovanna, 1994. *The American Philosopher: Conversations with Quine, Davidson, Putnam, Nozick, Danto, Rorty, Cavell, MacIntyre and Kuhn*, translated by Rosanna Crocitto. Chicago and London: The University of Chicago Press.

Carnap, Rudolf, 1937. *The Logical Syntax of Language*. London: Routledge and Kegan Paul.

Creath, Richard, 1987. "The Initial Reception of Carnap's Doctrine of Analyticity." *Noûs* 21: 477–99.

———, 1990. "Introduction." In Quine and Carnap (1990), pp. 1–47.

———, 2014. Review of *Carnap, Tarski and Quine at Harvard. Conversations on Logic, Mathematics and Science*, by G. Frost-Arnold. *Notre Dame Philosophical Reviews*, http://ndpr.nd.edu/news/carnap-tarski-and-quine-at-harvard-conversations-on-logic-mathematics-and-science/, Feb. 2014, accessed 1 June 2017.

Creath, Richard, Gary Ebbs, Gregory Lavers and Greg Frost-Arnold, 2016. Book Symposium: *Carnap, Tarski and Quine at Harvard*. Metascience 25: 25–49.

Davidson, Donald, 2004. *Problems of Rationality*. Oxford: Clarendon Press.

Friedman, Michael, 2006. "Carnap and Quine: Twentieth-Century Echoes of Kant and Hume." *Philosophical Topics* 34: 35–58.

Ebbs, Gary, 2016. "Quine's 'Predilection' for Finitism." *Metascience* 25: 31–36.

Lewis, C. I., 1929. *Mind and the World Order: Outline of a Theory of Knowledge*. New York: Dover.

Mancosu, Paolo, 2010."Harvard 1940–1941: Tarski, Carnap, and Quine on a Finitistic Language of Mathematics for Science." In *The Adventure of Reason: Interplay between Philosophy of Mathematics and Mathematical Logic 1900–1940*, pp. 361–86. New York: Oxford University Press.

Moore, Gregory, 1988. "The Emergence of First-Order Logic." In *History and Philosophy of Modern Mathematics*, edited by W. Asprey and P. Kitcher, pp. 95–135. Minneapolis: University of Minnesota Press.

Morris, Sean, 2017. "Quine Against Lewis (and Carnap) on Truth by Convention." *Pacific Philosophical Quarterly*, early online access, DOI: 10.1111/papq.12185.

Murphey, Murray. 2012. *The Development of Quine's Philosophy*. Dordrecht: Springer.

Quine, W. V., 1934. *A System of Logistic*. Cambridge, MA: Harvard University Press.

———, 1937. "Is Logic a Matter of Words?", abstract of a paper read at the 37th Annual Meeting of the Eastern Division of the APA, Princeton University, December 1937. *The Journal of Philosophy* 34: pp. 673–87.

———, 1939. "Designation and Existence." *The Journal of Philosophy* 36: 701–09.

———, 1940. *Mathematical Logic*. Cambridge, MA: Harvard University Press.

———, 1953. "Two Dogmas of Empiricism." Reprinted in Quine (1980), pp. 20–46

———, 1960. *Word and Object*. Cambridge, MA: MIT Press.

———, 1963. *Set Theory and Its Logic*. Cambridge, MA: The Belknap Press of Harvard University Press.

———, 1966a. *Selected Logic Papers*. Cambridge, MA: Harvard University Press.

———, 1966b. *The Ways of Paradox and Other Essays*. Cambridge, MA: Harvard University Press.

———, 1969. "Foreword." In *Convention: A Philosophical Study*, by D. Lewis. Cambridge, MA: Harvard University Press.

———, 1980. *From A Logical Point of View: Nine Logico-Philosophical Essays*, 2nd rev. ed. Cambridge, MA: Harvard University Press.

———, 1986. "Autobiography of W. V. Quine." In *The Philosophy of W. V. Quine*, edited by L. E. Hahn, and P. A. Schilpp, pp. 2–49. Chicago and La Salle, IL: Open Court.

———, 2008. *Confessions of a Confirmed Extensionalist and Other Essays*, edited by D. Føllesdal and D. B. Quine. Cambridge, MA: Harvard University Press.

Quine, W. V. and Rudolf Carnap, 1990. *Dear Carnap, Dear Van*, edited by R. Creath. Berkeley: University of California Press.

Sinclair, Robert, 2015. "On Quine's Debt to Pragmatism: C. I. Lewis and the Pragmatic *A Priori*." In *Quine and His Place in History*, edited by G. Kemp and F. Janssen-Lauret, pp. 76–99. Basingstoke: Palgrave Macmillan.

Wagner, Henri, 2016. *Logique et paroissial. Sur un problème fondamental de la conception de la logique de W. V. Quine*, PhD Dissertation, University of Bordeaux Montaigne.

White, Morton, 1999. *A Philosopher's Story*. University Park: Pennsylvania State University Press.