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**Ontology, Analyticity and Meaning:
The Quine-Carnap Dispute**

by

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In the middle of the twentieth century a dispute erupted between the chief architect of Logical Empiricism, Rudolf Carnap, and Logical Empiricism's chief reformer, Willard van Orman Quine -- who was attempting to save what he took to be its main insights by recasting them in a more acceptable form. Though both eschewed metaphysics of the traditional apriori sort, and both were intent on making the investigation of science the center of philosophy, they disagreed about how to do so. Part of the disagreement involved the nature of ontological disputes. The central documents in the debate are:

- (i) Quine's 1948 article, "On What There Is," which tells us how to discern ontological commitments, what such commitments amount to, and how to evaluate them,¹
- (ii) Carnap's 1950 article "Empiricism, Semantics, and Ontology," which -- with the help an ambitious analytic/synthetic distinction -- attempts to reconcile his promiscuous commitment to a rich ontology of abstract objects with his puritanical devotion to empiricism by distinguishing scientifically tractable ontological issues from the unintelligible "psuedo-questions" of traditional ontology,²
- (iii) Quine's 1951 article "Two Dogmas of Empiricism" -- which attacks Carnap's analytic /synthetic distinction , and offers a holistic reconstruction of Logical Empiricism.³

Although these documents make up the core of the debate, they don't exhaust it. For example, in 1951, Quine responded briefly in "On Carnap's Views of Ontology."⁴ In "Meaning and

¹ Quine, "On What There Is," *Review of Metaphysics* 2 (1948): 21-38; reprinted in Quine, *From a Logical Point of View*, rev. 2nd ed. (Cambridge: Harvard University Press, 1980). Citations will be to the latter.

² Carnap, "Empiricism, Semantics, and Ontology," *Revue Intern. De Phil.* 4, (1950): 20-40; revised and reprinted in *Meaning and Necessity*, 2nd edition (Chicago: University of Chicago Press, 1956). Citations will be to the latter.

³ Quine, "Two Dogmas of Empiricism," *Philosophical Review* 60, No. 1 (1951): 20-43; revised and reprinted in *From a Logical Point of View*. Citations will be to the original.

⁴ Quine, "On Carnap's Views of Ontology," *Philosophical Studies* 2 (1951): 65-72.

Synonymy in Natural Languages,” 1955, Carnap criticized Quine’s rejection of intension over extension, arguing that the former is legitimate, if the latter is.⁵ In *Word and Object*, 1960, Quine conceded the point, noting that indeterminacy of reference goes hand in hand with the indeterminacy of translation and meaning.⁶ Though I will touch on this later material, I will mainly focus on the three core documents.

The debate in these papers is about how to understand ontological commitment, and what ontology to adopt. The central dispute is over abstract objects. Though both Quine and Carnap recognize the existence of numbers, Quine is unhappy with Carnap’s commitment to properties, propositions, and meanings. Even in the case of numbers, Quine’s acceptance is grudging. Since they are abstract, he takes commitment to them to be a regrettable form of Platonism. Though inherently suspect, numbers are apparently unavoidable, since they seem to be required by our best physical theory. The same cannot, he thinks, be said for other abstract objects.

Carnap disagrees. For him, properties and propositions are no more problematic than numbers. Each is scientifically useful, and commitment to them doesn’t involve any form of Platonism. On the contrary, when properly understood, these commitments are nothing more than uncontroversial consequences of an optimal theoretical framework for science. Philosophers haven’t seen this because, he believes, they have approached ontology in a confused and unscientific way - failing to distinguish theoretical questions that arise within a framework for describing the world from practical questions about which framework is best. This is his famous distinction between theory-internal and theory-external questions. Since his use of the distinction depends on a strong

⁵ Carnap, “Meaning and Synonymy in Natural Languages,” *Philosophical Studies* 7, (1955): 33-47; reprinted as *Appendix D of Meaning and Necessity*. Citations will be the reprinted version.

⁶ Quine, *Word and Object*, (Cambridge MA: MIT Press, 1960).

doctrine of analyticity, it is subject to Quine's critique. Although Carnap has a response to the critique, I will argue that it is not enough to save his ambitious conception of analyticity.

How much this matters to his ontological views depends on whether his account of the cognitive content of empirical theories is retained. At the time, both he and Quine were verificationists about such contents – despite disagreeing over whether the content of a theory could be parceled out to its individual statements. In the presence of their shared verificationism, the essence of Carnap's ontological position survives the loss of analyticity, and Quine's victory is pyrrhic. However, that isn't the end of the story. If verificationism about the contents of theories is dropped, the ontological import of Quine's critique of analyticity is reinstated. Though Carnap's ontology is still attractive, the argument for it must be modified. That, in brief, is what I will argue.

Ontological Commitment and Abstract Objects in "On What There Is"

The opening shot in the conflict was Quine's "On What There Is," the first part of which sets out his criterion of ontological commitment. One is not, he argues, committed, merely by using a name, to there being a referent of the name. Nor is one committed, merely by using a meaningful term, to their being an entity that is its meaning. It is a substantive theoretical position -- which Quine sees no reason to accept -- that words are meaningful only if there are entities that they mean. In using the predicate 'is red' or the adjective 'seven', one is not thereby committed to the existence of colors or numbers, though one is committed when one says that there are primary colors from which the others can be generated, or that there are prime numbers between 6 and 12. In general, one is committed to the existence of Fs when, and only when, one says that there are Fs.

This is the simple idea behind Quine's slogan, "To be is to be the value of a bound variable." The point is *not* that to exist amounts to nothing more than being the value of a bound variable, but that to *commit* oneself to the existence of something is nothing more than *to say* that there is such a thing. To commit oneself to "things that are F" is to say something the proper regimentation of which is, or entails, a quantificational sentence -- $[\exists x Fx]$ -- the truth of which requires the existence of at least one object *o* that makes $[Fx]$ true when *o* is assigned as value of 'x'. The qualification about regimentation is a crucial device Quine uses to avoid unwanted ontological commitments that violate his preference for desert landscapes. He has no problem, for example, saying that *there is a possibility that S*, without thereby committing himself to the existence of possibilities. The justification of his ontological nonchalance is that the proper regimentation of the remark involves no quantification over possibilities, but simply the recognition that *it may be true that S*. With the flexibility provided by this kind of philosophically-motivated regimentation, Quine holds that the *only* way to commit oneself to the existence of so-and-so's is by asserting something the proper regimentation of which is, or entails, the existentially quantified claim that there are so-and-so's.⁷

So far, it might appear that there is nothing in Quine's position to which Carnap could object. However, toward the end of the essay -- when illustrating potentially problematic ontological commitments, Quine gives us a hint that things might be otherwise. He starts out uncontroversially, noting that in saying that some dogs are white, one commits oneself to there being dogs and white things, but not to the existence of doghood or whiteness. "On the other hand," he says,

When we say that some zoological species are cross-fertile we are committing ourselves to recognizing as entities the several species themselves, *abstract though they are*. We remain so committed at least until we devise some way of so paraphrasing the statement

⁷ Page 12.

as to show that seeming reference to species on the part of our bound variable was an avoidable manner of speaking.⁸

His next illustration of commitment to abstract objects involves mathematics.

Classical mathematics, as the example of primes larger than a million illustrates, is up to its neck in commitments to an ontology of abstract entities. Thus it is that the great mediaeval controversy over universals has flared up anew in the modern philosophy of mathematics. ... The three main mediaeval points of view regarding universals are designated by the historians as *realism*, *conceptualism*, and *nominalism*. Essentially these same three doctrines reappear in twentieth-century surveys of the philosophy of mathematics under the new names *logicism*, *intuitionism*, and *formalism*. *Realism*, as the word is used in connection with the mediaeval controversy over universals, is the Platonic doctrine that universals or abstract entities have being independently of the mind; the mind may discover them but cannot create them. *Logicism*, represented by Frege, Russell, Whitehead, Church, and Carnap, condones the use of bound variables to refer to abstract entities known and unknown, specifiable, and unspecifiable.⁹

Quine here suggests that Carnap's commitment to numbers is *a form of Platonism*. On the one hand, the label seems apt. After all, Carnap does say there are numbers, while admitting that they are abstract, and not limited to those we can specify. On the other hand, he cannot have liked being called a Platonist, since Platonism is among the traditional metaphysical views he had consistently dismissed as cognitively meaningless nonsense. It was Carnap who, in *The Logical Syntax of Language*, proclaimed that "Philosophy is to be *replaced* by the logic of science – that is to say by the logical analysis of the concepts and sentences of the sciences."¹⁰ His Logical Empiricism was

⁸ Page 13, my emphasis.

⁹ Pp. 13-14, my (underlined) emphasis.

¹⁰ Carnap, *The Logical Syntax of Language*, (London: Kegan Paul, 1937); Translation of *Logische Syntax Der Sprache* (1934). My emphasis.

supposed to leave traditional metaphysics behind, replacing it with something better. If someone as sympathetic as Quine could misread Platonism into his project, he would have to state his position more clearly, and explain why he wasn't guilty of metaphysical backsliding.

Ontology and the Rejection of Metaphysics in "Empiricism, Semantics, and Ontology"

This was the task of "Empiricism, Semantics, and Ontology," which begins as follows.

Empiricists are in general rather suspicious with respect to any kind of abstract entities ... As far as possible they try to avoid any reference to abstract entities and to restrict themselves to what is sometimes called a nominalistic language, i.e., one not containing such references. However, within certain scientific contexts it seems hardly possible to avoid them. ... Recently the problem of abstract entities has arisen again in connection with semantics... Some semanticists say that certain expressions designate certain entities, and among these designated entities they include not only concrete material things but also abstract entities, e.g., properties as designated by predicates and propositions as designated by sentences. *Others object strongly to this procedure as violating the basic principles of empiricism and leading back to a metaphysical ontology of the Platonic kind.* It is the purpose of this article to clarify this controversial issue. *The nature and implications of the acceptance of a language referring to abstract entities will first be discussed in general; it will be shown that using such a language does not imply embracing a Platonic ontology but is perfectly compatible with empiricism and strictly scientific thinking.*¹¹

The message here is as clear as it is perplexing. Despite his acceptance of abstract objects, Carnap is no Platonist. Instead, he sees himself as an unreconstructed empiricist, who rejects metaphysics in favor of science, and wishes to transform the misguided metaphysical debate between realists and nominalists into scientifically tractable terms. Doing so will, he believes, show why his commitment to abstract objects is unproblematic.

¹¹ Pp. 205-206, my emphasis.

His key thesis is that ontological questions are intelligible only within a scientific framework for describing the world. Such a framework is a formalized (or formalizable) language, with semantic rules interpreting its expressions, and assigning truth conditions to its sentences.¹² Among these expressions are terms and predicates referring, or applying, to postulated objects. For example, our ordinary language contains terms for observable physical objects and events. Carnap assumes that the rules constituting their meanings specify possible observations that would confirm or disconfirm sentences containing them.¹³ The question of whether there are things of a given sort, therefore, reduces to the question of whether observable events occur that would, as a matter of linguistic rule, confirm the relevant sentences. Since these *internal (ontological) questions* can, in principle, be answered by appeal to evidence, they are empirical, rather than metaphysical. For example, the internal question of whether there are physical objects is answered by consulting the semantic rules of our ordinary theoretical framework, and noting the occurrences of experiences needed to justify physical-object sentences.¹⁴

Carnap contrasts *internal ontological questions* – which he takes to be about the possible evidence that would answer them – with *external ontological questions* – which can't be settled by evidence, while nevertheless purporting to be about the world. Traditional questions of metaphysics, including questions about the reality of the external world, are of this sort.

¹² Ibid., pp. 206-207.

¹³ “Once we have accepted the thing language ... we can raise and answer internal questions, e.g., “Is there a white piece of paper on my desk?” ... “Are unicorns and centaurs real or merely imaginary?”... These questions are to be answered by empirical investigations. Results of observations are evaluated according to certain rules as confirming or disconfirming evidence for possible answers. (The evaluation is usually carried out ... as a matter of habit rather than a deliberate, rational procedure. But it is possible ... to lay down explicit rules for evaluation...)” p. 207.

¹⁴ “The concept of reality occurring in these internal questions is an empirical, scientific, non-metaphysical concept. To recognize something as a real thing or event means to succeed in incorporating it into the system of things...so that it fits together with the other things recognized as real, according to the rules of the framework.” p. 207.

From these [internal] questions we must distinguish the external question of the *reality of the thing world itself*. In contrast to the former questions, this question is raised neither by the man in the street nor by scientists, but only by philosophers. Realists give an affirmative answer, subjective idealists a negative one, and the controversy goes on for centuries without ever being solved. And it cannot be solved because it is framed in the wrong way. *To be real in the scientific sense means to be an element of the system; hence this concept cannot be meaningfully applied to the system itself.*¹⁵

Although imperfectly put, the message is clear. The question [Are there Fs?] is properly understood by everyone except philosophers to be an internal question, resolvable by empirical evidence of the kind given by the semantic rule governing F. Philosophers, on the other hand, have traditionally misunderstood the question as not being settled by this evidence. Their mistake has been to divorce the application of F from the evidential rules that constitute its meaning. As a result, they have been led to ask cognitively meaningless pseudo-questions that can't be answered.

This mistake is compounded by another one, that serves to disguise it. Philosophers are prone to run together the proper, though often trivial, internal *theoretical* question [Are there Fs?] with the non-trivial *practical* question of whether to adopt a theoretical framework incorporating F, as opposed to other terms. Regarding physical objects, Carnap says:

Those who raise the question of the reality of the thing world itself have perhaps in mind not a theoretical question as their formulation seems to suggest, but rather a practical question, a matter of a practical decision concerning the structure of our language. ... we are free to choose to continue using the thing language or not; in the latter case we could restrict ourselves to a language of sense-data and other “phenomenal” entities ... If someone decides to accept the thing language, there is no objection against saying that he has accepted the world of things. But this must not be interpreted as if it meant his acceptance of a *belief* in the reality of the thing world; there is no such belief or assertion

¹⁵ Ibid., p. 207, my emphasis.

or assumption, because it is not a theoretical question. To accept the thing world means nothing more than to accept a certain form of language, in other words, to accept rules for forming statements and for testing, accepting, or rejecting them. The acceptance of the thing language leads, on the basis of observations made, also to the acceptance, belief, and assertion of certain statements. But the thesis of the reality of the thing world cannot be among these statements, because it cannot be formulated in the thing language, or, it seems, in any other theoretical language.¹⁶

The contrast is striking. We are asked to imagine a choice between our ordinary physical-object framework and a (suitably elaborated) Berkeleyan alternative that speaks only of minds and “sense data.” We are told that this is *simply* a choice between two linguistic schemes for describing experience. There is, we are told, “no belief or assertion or assumption” *in the reality of the thing world* that one adopts when one opts for the thing, rather than the phenomenal, framework.

How are we to understand this? Part of the point is that the metaphysical pseudo-statement that physical objects exist in reality has no intelligible content.¹⁷ Hence, there is nothing in that statement to believe or assume. But there is more to the position than this. According to Carnap, there is *no assertion whatsoever* that one makes, or belief or assumption one adopts, in opting for theories in the thing language rather than in a suitably elaborated Berkeleyan framework. If there were, what would it be? Not a pseudo-statement, since they lack cognitive content.¹⁸ It would have to be an empirical statement of some sort. But then the

¹⁶ Ibid. pp. 207-208, my (underlined) emphasis.

¹⁷ On page 214, he says that the “alleged statement of the reality of the system of entities is a pseudo-statement *without cognitive content.*” My emphasis.

¹⁸ Carnap’s long-standing position was that statements with no cognitive content can’t be objects of thought or assertion.

“A statement asserts only so much as is verifiable with respect to it. Therefore a sentence can be used only to assert an empirical proposition, if indeed it is used to assert anything at all. If something were to lie, in principle, beyond possible experience, it could neither be said, nor thought nor asked.” . p. 76,

assertion, belief, or assumption would require empirical justification -- in which case the choice between the frameworks would be a genuine theoretical matter, rather than the purely practical decision he takes it to be. As Carnap puts it,

we take the position that the introduction of the new ways of speaking does not need any theoretical justification *because it does not imply any assertion of reality*.¹⁹

From here it is a short step to the conclusion that the cognitive contents of empirically equivalent theories couched in the two languages are the same. Since they have the same content, there is no objective fact of the matter on which they differ, and no genuine claim about the world made by one of them that isn't made by the other. This is why Carnap insists that the choice between the two theories is purely pragmatic, "not cognitive in nature," and to be made solely on practical grounds.²⁰ We are justified in adopting the physicalistic theory because (i) we find it simpler and more efficient to use to use than the phenomenistic one, and (ii) it doesn't make any contentious claims about the world beyond those made by the phenomenistic theory.

Abstract Objects and the Role of Analyticity in "Empiricism, Semantics and Ontology"

Ontological questions about abstract objects are treated similarly. When F is a predicate applying to physical objects or events, Carnap takes its meaning to supply analytic truths specifying empirical evidence that would confirm, or disconfirm, statements attributing F to something. The internal question [Are there Fs?] is answered by gathering this evidence, while the

"The Elimination of Metaphysics Through the Analysis of Language," in A. J. Ayer, ed. *Logical Positivism*, (New York: Free Press, 1959), originally published in 1932.

Though by 1950 Carnap analyzed meaning in terms of confirmation rather than verification, his view of statements with no cognitive content remained fundamentally the same.

¹⁹ "Empiricism, Semantics, and Ontology," p. 214. My emphasis.

²⁰ *Ibid.* p. 208.

external ontological question is dismissed as a metaphysical pseudo-question. By contrast, when F is a predicate of abstract objects, empirical evidence is often irrelevant, and the meaning of F is given by rules specifying logical properties of sentences containing it. In these cases, the answer [There are Fs] to the internal question [Are there Fs?] is analytic, while the external question is cognitively meaningless, as before.

Numbers and properties are good examples. About the former Carnap says:

Here again there are internal questions, e.g. “Is there a prime number greater than a hundred?” Here, however, the answers are found, not by empirical investigation based on observations, but by logical analysis based on the rules for the new expressions. Therefore the answers are here analytic, i.e. logically true.²¹

As for the external question about “the reality of numbers,” philosophers who raise this question are guilty of essentially the same fallacy pointed out earlier – namely of divorcing the application of F from the rules that constitute its meaning. As a result, their “external ontological question” about numbers lacks clear sense.²² The case of properties is similar.

The thing language contains words like “red”, “hard”, “stone”, “house”, etc., which are used for describing what things are like. Now we may introduce new variables, say “f”, “g”, etc., *for which those words are substitutable* and furthermore the general term “property”. New rules are laid down which admit sentences like “Red is a property”, “Red is a color”, “These two pieces of paper have at least one color in common” (i.e., “There is an *f* such that *f* is a color, and ...”). *The last sentence is an*

²¹ Ibid. 208-209.

²² Carnap says that these philosophers

“have so far not given a formulation of their question in terms of the common scientific language. Therefore our judgment must be that *they have not succeeded in giving to the external question and to the possible answers any cognitive content*. Unless and until they supply a clear cognitive interpretation, we are justified in our suspicion that their question is a pseudo-question, that is, one disguised in the form of a theoretical question while in fact it is non-theoretical; in the present case it is the practical problem whether or not to incorporate into the language the new linguistic forms which constitute the framework of numbers.” p. 209, my emphasis.

internal assertion. It is of an empirical, factual nature. However, the external statement, the philosophical statement of the reality of properties – a special case of the reality of universals – is devoid of cognitive content.²³

For Carnap, the ontological status of properties is on a par with that of numbers. In this case, the internal statement he cites, ‘These two pieces of paper have at least one color in common’, is empirical, rather than analytic. To confirm it, it is sufficient to establish, e.g., ‘These two pieces of paper are white’. It *follows analytically* from this that there is a color (property) that the pieces of paper share. The same framework-internal rules governing property words that generate this entailment also render his other examples – ‘Red is a property’ and ‘Red is a color’ – analytic, along with the overtly ontological statements ‘There are properties’ and ‘There are colors’.

There is, however, a puzzle here. How can the mere introduction of *words*, with rules governing their meaning, guarantee the existence of *entities* – properties and colors – required to make these ontological statements true?²⁴ For Carnap, the answer lies in a proper understanding of analyticity. Since the truth of an analytic statement is supposed to be due entirely to its meaning, whatever facts there may be in the world are irrelevant. *An analytic truth places no constraints on the way the world is, and therefore makes no genuine claim about it, including no claim about what exists in it. Hence, it can't be ontologically worrying.* This is the classical Tractarian doctrine of analyticity, which identifies the necessary and the apriori with the analytic, while maintaining that such statements tell us nothing about the world. It had been Carnap's doctrine since the early 1930s.²⁵

²³ Ibid., 211-212, my emphasis.

²⁴ Note, in the above passage, when Carnap talks about introducing new variables, he doesn't speak of introducing new entities as their values, but of specifying the general terms for which they may substitute.

²⁵ From page 41 of *The Logical Syntax of Language* (London: Kegan Paul, 1937): my (underlined) emphasis

For Logical Empiricists, this doctrine functioned not only to fend off worries about abstract objects, but also to accommodate necessary and apriori truths to their uncompromising empiricism. On their view, all knowledge of the world comes from, and is justified by, experience. Thus, if there are necessary truths about the world, the necessity of which is knowable, this knowledge must somehow come from, and be justified by, experience of the world as it actually is. This presented a problem. It is easy to see how experience provides knowledge of which features the world actually has. But how could it provide knowledge that the world has certain features in every possible circumstance? In the face of this apparent mystery, the Logical Empiricists concluded that necessary truths must not be about the world in any genuine sense, after all. Apriori truths were, of course, in the same boat.²⁶

“In material interpretation, an analytic sentence is absolutely true whatever the empirical facts may be. Hence, it does not state anything about the facts...A synthetic sentence is sometimes true—namely, when certain facts exist, and sometimes false; hence it says something as to what facts exist. Synthetic sentences are the genuine statements about reality.

From p. 76, “The Elimination of Metaphysics Through the Analysis of Language,” *Logical Positivism* (a translation of “Überwindung der Metaphysik durch Logische Analyse der Sprache,” *Erkenntnis*, II, 1932): my (underlined) emphasis

“If a compound sentence is communicated to us, e.g. “It is raining here and now or it is snowing,” we learn something about reality. This is so because the sentence excludes certain of the relevant states-of-affairs and leaves the remaining ones open. ... If, on the other hand, we are told a tautology, no possibility is excluded but they all remain open. Consequently, we learn nothing about reality from the tautology, e.g., “It is raining (here and now) or it is not raining.” Tautologies, therefore, are empty. They say nothing; they have, so-to-speak, zero content... Mathematics, as a branch of logic, is also tautological. In Kantian terminology: The sentences of mathematics are analytic. They are not synthetic *a priori*. Apriorism is thereby deprived of its strongest argument. Empiricism, the view that there is no synthetic apriori knowledge, has always found the greatest difficulty in interpreting mathematics ... This difficulty is removed by the fact that mathematical sentences are neither empirical nor synthetic *a priori* but analytic.”

From pp. 142-143 of “The Old and the New Logic,” *Logical Positivism* (a translation of “Die alte und die neue Logik,” in *Erkenntnis* 1, 1930-31): my emphasis

“(Meaningful) statements are divided into the following kinds. First there are statements which are true solely by virtue of their form (“tautologies” according to Wittgenstein; they correspond approximately to Kant’s “analytic judgments”). *They say nothing about reality*. The formulae of logic and mathematics are of this kind. *They are not themselves factual statements*, but serve for the transformation of such statements.”

It is clear from the 1957 postscripts Carnap added to the two articles in *Logical Positivism* that he retained the strong view of analyticity, and its relevance to his theses about abstract objects. Although he uses the postscripts to make minor changes, he leaves his doctrine of the emptiness of analytic truths intact, and notes the similarity between his 1932-treatment of ontological theses and his treatment of abstract objects in “Empiricism, Semantics, and Ontology.”

²⁶This reasoning is illustrated in chapter 4 of Ayer, *Language, Truth, and Logic*, (London: Gollancz, 1936), 2nd ed. 1946.

This was the context in which analyticity was used to explain and legitimate necessity and apriority. If all necessity and apriority is linguistic, then, it was thought, the truth of such statements is due to their meaning, rather than the world. Since this truth doesn't constrain the way the world is, these statements are not, it was concluded, *about* the world. In addition, knowledge of them seemed to pose no problems for empiricism. Since we can surely know both what meanings we have assigned to our words, and what follows from those assignments, it was assumed that explaining apriori knowledge of necessity would be no problem. Unfortunately, the explanation was never worked out in detail, with the result that serious problems were overlooked.²⁷

For our purposes, the most important problem dates back to Quine's incisive, but at the time under-appreciated, article "Truth by Convention." There, he questions the idea that one can know a sentence to be true simply by knowing the linguistic conventions that govern it, and thereby understanding it.²⁸ His point, in a nutshell, is that often the passage from understanding meaning to knowing truth must be mediated by reasoning that involves tacit knowledge of the

²⁷ Here is one possible (but problematic) line of thought. Let S be an analytic sentence that expresses the proposition p. (i) Since S is analytic one can know that S expresses a truth simply by learning what it means. (ii) One will thereby know the metalinguistic claim q -- that S expresses a truth -- on the basis of the evidence E provided by one's experience in learning that meaning. (iii) Since one has come to understand S, one will also know, on the basis of E, that S expresses p. (iv) Combining (ii) and (iii), one will thereby know -- on the basis of E -- that p is true. (v) However, the claim that E *justifies* -- by ruling out possibilities in which it is false -- is not p, but q. (vi) Since p can be known without any justifying evidence ruling out possibilities in which it is false, there must be no such possibilities. (vii) So, if p is analytic, p must be necessary, and -- by the present reasoning -- capable of being known to be so; p is also apriori, since knowledge of p doesn't require evidence justifying it.

²⁸ Quine, "Truth by Convention," first published in O. H. Lee (ed.), *Philosophical Essays for A. N. Whitehead*, (New York: Longmans), 1936; reprinted in *The Ways of Paradox*, (New York: Random House), 1966.

principles of logic -- which are known apriori, if anything is. For believers, like Carnap, in the linguistic explanation of all apriori knowledge, this objection is fatal – since, if Quine is right, Carnap’s explanation tacitly appeals to what he takes to be a kind of apriori knowledge that is conceptually prior to the linguistic knowledge being explained. This objection – to which no effective response was ever given – remained in the background of Quine’s dispute with Carnap in the 40s and 50s.²⁹

“Two Dogmas” and Beyond: Quine and Carnap on Meaning, Reference, and Analyticity

What takes center stage is Quine’s attack on analyticity in “Two Dogmas of Empiricism.” The circle argument, in the first four sections of the paper, is aimed precisely at the ambitious conception of analyticity Carnap uses to explain and legitimate necessity and apriority. The persuasive point of the argument is that analyticity can’t play this role because the analytic/synthetic distinction presupposes the very notions it is supposed to explain. Although this argument may have little effect on other, less philosophically ambitious, conceptions of analyticity, this concession is of little help to Carnap -- whose version of empiricism requires a linguistic explanation of necessity and apriority, and a deflationary understanding of the allegedly

²⁹ What was not in the background was the continuity of Carnap’s views of meaning, analyticity, and ontology – as he makes clear at the end of section 3, of “Empiricism, Semantics, and Ontology,” pp. 214-215.

“Thus, it is clear that the acceptance of a linguistic framework must not be regarded as implying a metaphysical doctrine concerning the reality of the entities in question. It seems to me due to a neglect of this important distinction that some contemporary nominalists label the admission of variables of abstract types as “Platonism.” [Carnap here footnotes Quine’s “On What There Is”.] This is, to say the least, an extremely misleading terminology. It leads to the absurd consequence, that the position of everybody who accepts the language of physics with its real number variables ... would be called Platonistic, even if he is a strict empiricist who rejects Platonic metaphysics. A brief historical remark may here be inserted. The non-cognitive character of the questions which we have called here external questions was recognized and emphasized already by the Vienna Circle ... Influenced by ideas of Ludwig Wittgenstein, the Circle rejected both the thesis of the reality of the external world and the thesis of its irreality as pseudo-statements [Here Carnap inserts a reference to his “Scheinprobleme in der Philosophie,” 1928]; the same was the case for both the thesis of the reality of universals (abstract entities, in our present terminology) and the nominalistic thesis that they are not real and that their alleged names are not names of anything ...”

analytic truths used to assert the existence of abstract objects. This is what Quine effectively argued that Carnap cannot have.³⁰

Carnap replies in “Meaning and Synonymy in Natural Languages,” where he argues that meaning and reference play comparable, and complementary, roles in empirical theorizing about natural language. Although facts about them are not strictly *determined* by observational facts about how speakers use words, this isn’t required in order for a notion to be scientifically respectable.³¹ Taking it to be obvious that reference (extension) is respectable, he argues that meaning (intension) is equally so.³² His strategy is to show that the meanings of coextensive predicates are often empirically distinguishable – e.g. ‘horse’ / ‘horse or unicorn’, and ‘goblin’ / ‘unicorn’. His method is to ask speakers to apply the words to *merely possible circumstances*, pictorially or verbally represented. Since one can often use this method to determine that coextensive words mean different things, he concludes that there is more to meaning than extension. But if words have meanings (over and above their extensions), then the notion of

³⁰ For a discussion of the strengths and weakness of the circle argument see sections 2-4, chapter 16, volume 1, of my, *Philosophical Analysis in the Twentieth Century* (Princeton and Oxford: Princeton University Press, 2003).

³¹ On p. 236 of “Meaning and Synonymy in Natural Languages,” Carnap discusses a hypothesis purporting to give a complete specification of the reference of a term used by a speaker. He says,

“The latter hypothesis cannot, of course, be completely verified, but every single instance of it can in principle be tested. On the other hand, it is also agreed that this determination of extension involves uncertainty and possible error. But since this holds for all concepts of empirical science, nobody regards this fact as a sufficient reason for rejecting the concepts of the theory of extension.”

³² “The purpose of this paper is to defend the thesis that the analysis of intension for a natural language is a scientific procedure, methodologically just as sound as that of extension...*The intensionalist thesis* in pragmatics [the study of natural languages], which I am defending, says that the assignment of an intension is an empirical hypothesis which, like any other hypothesis in linguistics, can be tested by observations of language behavior. On the other hand, *the extensionalist thesis* asserts that the assignment of an intension, on the basis of the previously determined extension, is not a question of fact but merely a matter of choice. The thesis holds that the linguist is free to choose any of those properties which fit the given extension ... there is no question of right or wrong. Quine seems to maintain this thesis...” Ibid., p. 236-237.

sameness of meaning must be empirically legitimate, and analyticity can be defined. Thus, Carnap says, two expressions are synonymous iff they have the same intension, and a sentence is analytic iff “its intension comprehends [is true in] all possible cases.”³³

Much of this is surely right. We often bring empirical evidence about speakers to bear on hypotheses about both reference and meaning. If the former hypotheses are empirically respectable, then the latter are too. Quine himself came to see this in *Word and Object* but drew the wrong conclusion from it, going down the disastrous path leading to his essentially eliminativist theses -- the indeterminacy of translation and inscrutability of reference.³⁴ However, the fact that Carnap was on the right side of that issue does nothing to blunt Quine’s successful attack on his philosophically ambitious notion of analyticity. Since Carnap’s defense of intension rests heavily on modal claims about what a predicate *would* apply to, or what truth value a sentence *would* have, were certain *possible circumstance* to obtain, it is not even clear that his definition of analyticity escapes the circle argument. A more promising strategy would be to give up the attempt to reduce necessity and apriority to analyticity, and try to formulate a narrower conception of analyticity according to which many non-analytic, necessary truths are made true by essential features of things, and much of our apriori knowledge isn’t a species of knowledge of meaning. The problem for Carnap is that although one might thereby salvage a narrow notion of analyticity, it is dubious that it could be used to legitimate his ontology of abstract objects. On the new picture, the fact that statements asserting the existence of such objects may be necessary or apriori, if true, won’t confer on them the uncontroversial status he

³³ Ibid., p. 243.

³⁴ For an explanation of Quine’s advocacy of these theses, plus an argument that they are ultimately self-undermining, see chapters 10 and 11 of volume 2 of *Philosophical Analysis in the Twentieth Century*.

requires. It would have to be shown both that these statements are analytic in the new sense, and that this renders them philosophically unproblematic. That is a tall order. What Carnap needs is for statements proclaiming that there are abstract objects to be “empty of content,” and so “to say nothing about the world.” Once necessity is allowed to outstrip analyticity, the familiar Carnapian staple –the idea that statements that don’t distinguish between different possible ways the world could be say nothing about it – is no longer available to support this deflationary idea about content. He could, in principle, appeal to a straightforwardly verificationist account of analyticity according to which truths immune from falsifying experience say nothing about the world. However, the difficulties with the statement-by-statement form of verificationism underlying this account had become legion by the time of “Two Dogmas.”³⁵ It is to the alleged lessons of these difficulties that Quine turns in sections 5 and 6.

The Relevance of Quine’s Holism to the Dispute over Analyticity and Ontology

He begins section 5 by summarizing the history of Carnap’s reductionist project, as a prelude to his own holism about confirmation.

Radical reductionism ... sets itself the task of specifying a sense-datum language and showing how to translate the rest of significant discourse, *statement by statement*, into it. Carnap embarked on this project in the *Aufbau*...Carnap did not seem to recognize, however, that his treatment of physical objects fell short of reduction not merely through sketchiness, but in principle....Carnap seems to have appreciated this point afterward; for in his later writings he abandoned all notion of the translatability of statements about the physical world into statements about immediate experience....But the dogma of reductionism has, in a

³⁵ See Alonzo Church, “Review of *Language, Truth, and Logic: Second Edition*,” *Journal of Symbolic Logic*, 14, 1949, 52-53; Carl Hempel, “The Empiricist Criterion of Meaning,” originally published in 1950, and reprinted in *Logical Positivism*; plus the discussion of these in chapter 13 of *Philosophical Analysis in the Twentieth Century*, Volume 1.

subtler and more tenuous form, continued to influence the thought of empiricists. *The notion lingers that to ... each synthetic statement there is associated a unique range of possible sensory events such that the occurrence of any of them would add to the likelihood of truth of the statement, and that there is associated also another unique range of possible sensory events whose occurrence would detract from that likelihood....* The dogma of reductionism survives in the supposition that each statement, *taken in isolation from its fellows*, can admit of confirmation or infirmation at all. My countersuggestion ... is that our statements about the external world face the tribunal of sense experience not individually but only as a corporate body.³⁶

Quine makes two significant points here. The first is a variant of the Duhemian idea that what counts as confirmation or disconfirmation of a hypothesis H depends on the background hypotheses we hold fixed in testing it. Because he thinks that we often have a wide range of choice both in deciding which background assumptions A to appeal to, and in selecting which claim to give up when A plus H yields an empirical falsehood, Quine rejects Carnap's supposition that the conventional meaning of H dictates the evidence that would confirm, or disconfirm, it. This criticism is of a piece with Quine's rejection of Carnap's ambitious conception analyticity. If

³⁶ "Two Dogmas of Empiricism," pp. 36-38. My emphasis. When reprinted in *From a Logical Point of View* (Cambridge: Harvard University Press, 1953), Quine added a footnote to Duhem at the end of this passage. The reader can verify the essential accuracy of Quine's summary of Carnap by reviewing (i) sections 8 and 9 of, "The Old and The New Logic," 1930-1 (pp. 143-145 in *Logical Positivism*), and (ii) the postscript Carnap added in 1957 (p. 146). In (i) he maintains that all scientific concepts can be "reduced" to observable properties of physical objects and events, and that these, in turn, can be "reduced" to "the content of immediate [sense] experience." (143-144). In (ii) he says:

"The position explained in sections 8 and 9 of the foregoing paper was modified in the years following its publication. The reduction of scientific concepts to the concepts of either of the two bases indicated (viz., to the given, i.e. sense-data, or to observable properties of physical things) cannot generally be carried out in the form of explicit definitions. Therefore, scientific sentences are in general not translatable into sentences of either of the two bases... Consequently a scientific sentence is not simply decidable as true or as false; it can only be more or less confirmed on the basis of given observations. Thus the earlier principle of verifiability ... was replaced by the weaker requirement of confirmability." (146)

Carnap were right, then the very meaning of H would generate analytic truths telling us which experiences count as confirming, and which disconfirming, it. However, if simply understanding H were sufficient to determine when it was confirmed, and when disconfirmed, we wouldn't have the range of theoretical choice regarding when to hold onto it, and when not, that we know we have.

Quine's second point is more dubious – namely that what is confirmed or disconfirmed by evidence is not individual hypotheses, but entire theories. Though it is easy to see why he says this, the fact that it's not the way that those who produce empirical hypotheses normally think, or talk, about them might well give us pause. Not Quine, however. For him, holism about confirmation is a mere weigh station on the way to holism about meaning – or, as the Logical Empiricists put it, *empirical significance*, or *cognitive content*.

We lately reflected that in general the truth of statements does obviously depend both upon language and upon extralinguistic fact ... The factual component must, if we are empiricists, boil down to a range of confirmatory experiences....My present suggestion is that it is nonsense, and the root of much nonsense, to speak of a linguistic component and a factual component in the truth of any individual statement. Taken collectively, science has its double dependence upon language and experience; but this duality is not significantly traceable into the statements of science taken one by one...The unit of empirical significance is the whole of science.³⁷

Elsewhere, I have explained Quine's holistic verificationism more fully, while documenting the problems with it.³⁸ Here, I limit myself to how it undermines his ontological critique of Carnap.

It is striking that, in "Two Dogmas," Quine has no problem with Carnap's identification of the empirical (i.e. cognitive) contents of our theories with their observational consequences,

³⁷ Ibid., pp. 38-39.

³⁸ Chapter 17 of volume 1 of *Philosophical Analysis in the Twentieth Century*. See in particular pp. 380-384 for a line-by-line explication of how the above passage, and related remarks, lead to Quine's holistic version of verificationism.

or – even more radically – with his willingness to take those consequences to be statements about sense experience. Although Quine objects mightily to parceling out cognitive content to sentences one by one, he agrees with Carnap about the contents of whole theories. Thus, he agrees that there is no genuine theoretical difference between empirically equivalent theories with different so-called ontologies. Since they have the same cognitive content, they make the same claims about the world. There is, therefore, no objective matter of fact on which they differ, and the choice between them is, as Carnap insisted, purely practical. It's no wonder that Carnap, while puzzled about being labeled a proponent of “platonic realism,” expresses confidence in “Empiricism, Semantics, and Ontology,” that, in the end, Quine agreed with him about the fundamental nature of ontological disputes.³⁹

The contrast between physicalist and phenomenalist ontologies is a case in point. It is clear, for Carnap, that physicalist and phenomenalist theories compatible with the same sense experience have the same content, and so make the same claims about the world. Since there is no fact of the matter on which they differ, the choice between them is to be made entirely on practical grounds.⁴⁰ In “Two Dogmas,” Quine agrees. He says:

As an empiricist I continue to think of the conceptual scheme of science as a tool, ultimately, for predicting future experience in the light of past experience. Physical objects are conceptually imported into the situation as convenient intermediaries ... as irreducible posits *comparable, epistemologically, to the gods of Homer....*[I]n point of epistemological footing the physical objects and the gods differ only in degree and not in

³⁹ In fn. 5, p. 215 he says:

“With respect to the basic attitude to take in choosing a language form (an “ontology” in Quine’s terminology, which seems to me misleading), there appears now to be agreement between us: “the obvious counsel is tolerance and an experimental spirit.” [a quote from the penultimate paragraph of “On What There Is”]”

⁴⁰ See “Empiricism, Semantics, and Ontology,” plus the discussion in “The Old and The New Logic,” cited in fn. 36.

kind....The *myth of physical objects* is epistemologically superior to most in that it has proved more efficacious than other myths as a device for working a manageable structure into the flux of experience.⁴¹

Quine stresses that the “myth of physical objects,” though useful, is not indispensable for making predictions about sense experience. The same predictions could, in principle, be made by a phenomenalist theory. He makes this point with an analogy in which the phenomenalist theory of nature is said to stand to the physicalist theory as the algebra of the rational numbers stands to the algebra of the reals. He notes that in the algebra of the rationals, functions like square root sometimes go undefined, complicating the laws. “Then,” Quine says:

it is discovered that the rules of our algebra can be much simplified by conceptually augmenting our ontology with some *mythical entities*, to be called irrational numbers. *All we continue to be really interested in, first and last, are rational numbers*; but we find that we can commonly get from one law about rational numbers to another much more quickly and simply by *pretending* that the irrational numbers are there too. ... Now I suggest that experience is analogous to the rational numbers and that the physical objects, in analogy to the irrational numbers, are posits which serve *merely* to simplify our treatment of experience....The salient differences between the positing of physical objects and the positing of irrational numbers are, I think, *just two*. First the factor of *simplification* is more overwhelming in the case of physical objects than in the numerical case. Second, the positing of physical objects is far more archaic, being indeed coeval, I expect, with language itself.⁴²

⁴¹ “Two Dogmas of Empiricism,” p. 41. My emphasis.

⁴² *Ibid.*, 41-2, my emphasis. Quine closes his discussion of the analogy by saying:

“The overall algebra of rational and irrational numbers is underdetermined by the algebra of rational numbers, but is smoother and more convenient; and it includes the algebra of rational numbers as a jagged or gerrymandered part. Total science, mathematical and natural and human, is similarly but more extremely underdetermined by experience. The edge of the system must be kept squared with experience; the rest, with all its elaborate *myths or fictions*, has as its objective the simplicity of laws.” (my emphasis)

Colorfully put, Quine's point is (i) that the phenomenalistic theory tells us the truth, the whole truth and nothing but the truth about nature, (ii) that the elements it talks about are "all that we are really interested in first, and last;" and (iii) that since the physical theory adds nothing new about the world, the *only* reason to prefer it to the phenomenalistic theory is that it makes the needed predictions about sense experience more simply and conveniently. Carnap couldn't have put it better.

So, where does Quine differ with Carnap about ontology? Here is how he sums it up:

Ontological questions...are on a par with questions of natural science. Consider the question whether to countenance classes as entities...Carnap has maintained that this is a question not of matters of fact but of choosing a convenient language form...for science. *With this much I agree, but only on the proviso that the same be conceded regarding scientific hypotheses generally.* Carnap has recognized that he is able to preserve a double standard for ontological questions and scientific hypotheses only by assuming an absolute distinction between the analytic and the synthetic...which I reject.⁴³ (my emphasis

According to both Quine and Carnap, it makes no difference to the empirical contents of whole theories, and hence to their truth or falsity, how they differ on *any non-observational statements*, so long as their observational consequences are the same. Hence, it makes no difference what their ontologies are. Theories that posit numbers, sets, physical objects, propositions, and properties do not differ on any fact of the matter from theories that don't, *as long as the theories are observationally equivalent*. This is the stunningly counterintuitive bedrock of ontological agreement between Carnap and Quine. Their only difference is over whether *individual sentences* asserting the existence of various objects are analytic in Carnap's ambitious sense -- and so, empty of content. Though one can imagine philosophical systems in which different answers to

⁴³ Ibid., p. 43.

this question would have significant consequences for ontology, the shared commitment of Carnap and Quine to a version of holistic verificationism about theories obliterates such consequences. If a total Carnapian theory is observationally equivalent to a total Quinean one, then, by holistic verificationism, Carnap's expansive ontology has, as he insists, zero effect on the claims his theory makes about the world. In this way he wins the ontological battle, despite suffering a minor setback in the skirmish over analyticity.

Extracting Positive Lessons about Ontology from the Debate

The situation changes, if we drop holistic verificationism, and suspend judgment on grand theories of the cognitive contents of entire theories. Then, Quine's view that ontological questions "are on a par with questions in natural science," and his opposition to Carnap's contention that statements asserting the existence of abstract objects are analytic (in the relevant sense) is an advance. If Carnap were right, such statements would be empty of significant content, and so would not require theoretical justification. Since they do, in fact, require such justification, Quine's point is reinstated.

What kind of justification, and how much they require, are vexing matters. Think again about numbers, properties, and propositions. Quine wants to know if they are eliminable – if talk about them can be paraphrased away without significant loss. But loss of what? Suppose it were shown that physics could, by highly complex and technical reconstructions, be reformulated without quantification over numbers. Would this justify abandoning our commitment to them? I don't see why. If the complexity of the numberless theories precluded their actual use by physicists, a case could be made that the simplicity achieved by positing numbers constituted evidence of their existence. Alternatively, one might put aside physics altogether, and base the case on arithmetic alone. Forget about reconstruction. Can there be any serious doubt that *there are prime*

numbers greater than a million, and hence that there are numbers? Surely not. Perhaps, then, what needs to be abandoned is the idea that the existence of abstract objects is especially questionable, requiring an unusually demanding justification. This idea was, I would argue, one of Quine's central unexamined presuppositions. It is worth re-examining. Here, my sympathies are with Carnap. Though wrong in thinking that statements asserting the existence of numbers, properties and propositions are trivially analytic, he was, I suspect, right in thinking that our ready appeal to them in mathematics and semantics is all the justification they need. Pinpointing precisely why this is so is something that we very much need an explanation of.⁴⁴

⁴⁴ An abbreviated version of this paper appears under the title, "The Quine, Carnap Debate on Ontology and Analyticity," in the *Soochow Journal of Philosophical Studies*, No. 16, 2007, 17-32. Thanks to Jeff King, Nate Gadd, and William Dunaway for helpful comments and discussion.