Analyticity and Holism in Quine's Thought
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This essay is based on a talk that I first gave at a conference in honour of the memory of my teacher, the late Burton Dreben, who taught at Harvard from 1956-1990. I dedicate it to his memory. Throughout our conversations, and in his teaching more generally, Burt always stressed the complexity of what is often called 'the analytic-synthetic debate'. In the last philosophical conversation that I had with him, he particularly emphasized the role that holism plays for Quine. This essay is based upon those two points. I attempt to give a sketch of Quine's complex views on analyticity, a sketch that will emphasize the central role that holism plays in those views. I should emphasize that my primary aim is to show how the matter appears from Quine's perspective. From other points of view, most notably Carnap's, it would no doubt seem rather different at crucial points; I note some of these points in passing, but do not discuss them.

I. The Nature of the Question

More than fifty years after the publication of "Two Dogmas of Empiricism," more than forty years after the first appearance of "Carnap and Logical Truth," there is no sign of agreement about the lessons that we should draw from Quine's writings on analyticity.[1] More alarming, there isn't even agreement about what Quine's *claims* are. As evidence here I offer a passage from an essay of Paul Boghossian's. Boghossian is discussing a notion which he calls 'Frege-analyticity': a sentence is Frege-analytic just in case it is "transformable into a logical truth by the substitution of synonyms for synonyms."[2] Commenting on what he takes to be Quine's attitude towards this idea, Boghossian says:

> What form does Quine's resistance take? We may agree that the
> result being advertised isn't anything modest, of the form: There
> are fewer analytic truths than we had previously thought. Or,
> there are some analytic truths, but they are not important for the
> purposes of science. Or anything of a similar ilk.[3]

Now this on my view is not simply misleading, or wrong; it is *completely* wrong, almost the reverse of the truth. It would be much nearer the mark to say that Quine's view is precisely that "[t]here are fewer analytic truths than we had previously thought" and that "they are not important for the purposes of science."

So the task confronting us is not only to say what Quine's views really are, but also to say why they are so susceptible of misunderstanding.[4] A helpful way in is to ask the following meta-question: what sort of question is at issue? In particular, is

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the question of the reality of the analytic-synthetic distinction a straightforward Yes-or-No question? Or is it a more complex sort of question, calling for a less straightforward answer? Boghossian, and others, take it that it is a Yes-or-No question that is at issue; they take this to be a question about the existence or the objectivity of meaning; and they see the negative answer they attribute to Quine as rather obviously absurd.

Now the answer to my meta-question is itself a complex one; it is by no means straightforward even to say what sort of question Quine is trying to answer. Sometimes it does seem as if we face a single Yes-or-No question; at other times a far more subtle and nuanced picture seems to emerge. My suggestion is that both appearances are to some extent correct. There *is* a Yes-or-No question, which is sometimes at the centre of Quine's attention (especially in "Two Dogmas"). Boghossian is not wrong about that, though he is wrong to suppose that the negative answer is obviously absurd. More to the present point, however, he is also wrong to think that this is the only question at issue. With Quine's (negative) answer to that question in place, other questions emerge, requiring more complicated sorts of answers.

To explain this, let us suppose that there were a notion of meaning, sufficiently clear and robust to serve as the foundation for a philosophical system. More particularly, let us suppose that we could make sense of an atomistic notion of cognitive meaning. "Atomistic" because it is a notion of meaning that is supposed to apply to sentences taken one by one; "cognitive" because Quine's concern, as always, is with epistemology, and with the sort of meaning relevant to knowledge. We may think of the cognitive meaning of a sentence as, roughly, the claim that that sentence makes upon reality. Given this supposition, we could define the analytic sentences as those that are true in virtue of meaning. More precisely (eliminating the "in virtue of") we could say: analytic sentences are those sentences that make no claim on reality, which say nothing about it either way, and which therefore cannot fail to be true.

Notice that a notion of analyticity defined in such a way is fitted to play the role of the a priori in two crucial respects. First, the notion thus explained will have the right *scope*. It will include all those sentences for which we have a use that do not make a claim upon reality; those that do make a claim upon reality will, presumably, not be plausible candidates for being a priori.[5] Second, the notion is also bound to have *epistemological significance*, since it distinguishes those sentences that make a claim upon reality, and are thus subject to confirmation and disconfirmation by evidence in the usual way, from those that make no such claim, and to which notions of evidence and justification therefore do not apply, or at least not in anything like the usual way.

Now our supposition highlights the Yes-or-No question that I take to be at issue in some of Quine's discussions. The question is simply: is there an atomistic notion of cognitive meaning that can play this role? Quine's answer, of course, is No; his reason is holism, a rejection of the atomism of our assumed notion of meaning. Let us briefly consider this point.

Let us agree, if only for the purposes of illustration, that some sentences make claims that are more or less directly answerable to sensory experience. (Quine's version of this idea is his notion of an observation sentence; the point here, however, is

independent of this particular way of making sense of the more general idea.) Other sentences have implications for experience because they imply sentences of this kind. In very many cases, however, no such implications hold between an individual sentence, taken by itself, and sentences of the more observational kind. Various classes of sentences containing the given sentence will have implications for experience, but the sentence taken alone will not. Hence, as Quine puts it, "the typical statement about bodies has no fund of experiential implications it can call its own."[6] This is holism: the view that many of our supposedly empirical sentences have implications for experience only when they are taken together with a larger or smaller body of other sentences. It is the more inclusive theory that has such implications, not the individual sentence by itself.

Now it is a direct consequence of Quine's holism that the notion of a "claim upon reality," at least if we interpret it in experiential terms, is not in general happily applied to sentences taken one by one. Bodies of sentences taken together make claims that cannot be parceled out among the individual sentences, hence the idea of a "claim upon reality" does not fit with our taking individual sentences, rather than wider theories, as the relevant units. Hence there is in general no such thing as the cognitive meaning of an individual sentence. (The "in general" here leaves room for the idea that there may be *some* sentences to which the idea of cognitive meaning can be applied. Most obviously, it will apply to those sentences directly answerable to experience, assuming that there are such. But it will not be applicable to all sentences, and we can never simply assume that it is applicable to a given sentence.)

In Quine's view, holism thus negates any notion of atomistic cognitive meaning. Yet the intuitive appeal that the idea of analyticity may have is, he holds, largely due to the fact that we tend, uncritically and illegitimately, to assume a notion of meaning of that sort.[7] Much of "Two Dogmas of Empiricism," as I see it, is an attempt to make this assumption explicit, and to undermine it. Clearly there is much more that could be said about this matter, but I shall not go further into it here.

If, with Quine, we conclude that we cannot simply assume a notion of cognitive meaning, universally applicable to sentences taken one by one, then where are we? One kind of notion of analyticity becomes untenable; it is not clear, however, that this is the only thing that might reasonably be meant by the word "analyticity." So we are left with various questions, which might be phrased like this: First, is there any tenable notion that might be more or less accurately described as "truth in virtue of meaning," and if so, what? Second, what will be the scope of such a notion? To find an account according to which certain paradigm sentences about bachelors or vixens come out as analytic is one thing; to show the analyticity of the whole complex structure of mathematics is quite another. Third, what will be the epistemological significance of such a notion? In what ways, if any, will the epistemological status of sentences that are analytic in this sense differ from that of other sentences? These are complex questions, which are unlikely to have simple Yes-or-No answers; focusing on these questions will show that it is quite misleading to think of the analyticity issue as a single straightforward question.

In spite of the complexity of the questions, we may state, very roughly and by way of preview, Quine's answers. To the first question: Yes, we can find something

that might be reasonably called analyticity. (This is a view that is much clearer, at least, in Quine's later work than earlier. I am inclined to think that it is quite consistent with what is important—from Quine's own point of view—in the earlier work, but this is certainly a point that is open to argument.) To the second: the scope of such a notion will fall short of what Carnap and others had hoped for. In particular, Quine sees no prospect for an understanding of analyticity that encompasses mathematics. The third question is the most crucial from Quine's perspective. Here his answer is that there will be no real epistemological significance to the notion. As Quine says it, "I recognize a notion of analyticity in its obvious and useful but epistemologically insignificant applications."[8] This negative answer to the third question gives rise to a further issue: if the status of apparently a priori subjects such as logic and mathematics is not to be understood in terms of analyticity, how should we understand what Quine himself calls "the palpable surface differences" between those subjects and the clearly empirical subjects?[9] We shall also briefly address this issue.

II. Quinean Analyticity and the Question of Scope

What sense *can* be made of the notion of analyticity, given Quine's assumptions? Quine rejects the idea that we can usefully approach meaning by beginning with the assumption that meanings are introspectible mental items; this is the view that he deplores as mentalism. His starting point, in thinking about meaning, is the *use* of language—both the use that is actually made of it, and the uses that *would* be made of it under various counterfactual circumstances. In particular, since his focus is always on the cognitive or theoretical language in which our knowledge is embodied, his focus is on the assertoric uses of sentences.[10]

Now what sort of sense can be made, in these terms, of the notion of cognitive meaning? Early on Quine says, "In point of *meaning*...a word may be said to be determined to whatever extent the truth or falsehood of its contexts is determined."[11] He reiterates the point later; in "Carnap and Logical Truth," he says, "Any acceptable evidence of usage or meaning of words must reside surely in the observable circumstances under which the words are uttered...or in the affirmation and denial of sentences in which the words occur."[12] Suppose—*per impossibile*—that we had the totality of sentences of the language spread out before us, and along with each sentence an account of the circumstances under which it would be correct to assert it. Then we would have, on Quine's account, all the evidence relevant to meaning.

Two points need to be made immediately about this imaginary, and impossible, situation. First, it might be thought to give comfort to the Carnapian because he could then define the analytic sentences as those that would be correctly assertable in *all* situations. But in fact there is no comfort of this sort. The proposed definition would make out the analytic sentences to be those that are true under any circumstances, true come what may. As we shall see shortly, however, Carnap would reject such an understanding of analyticity; he holds, with good reason, that there are no such sentences. (Very roughly, his view is that any sentence might be abandoned under some circumstances, but in the case of the analytic sentences such a move involves abandoning the language in favour of another. Carnap's analyticity is lan-

guage-relative.) Second, for most sentences, an account of the circumstances under which an utterance of the sentence would be accepted as correct would be a very long way from an account of its meaning, in any ordinary understanding of that word. The point here is holism. The chemist might accept the sentence, "There is copper in it," upon seeing a greenish tint in a test-tube, but that does not show that this sentence *means* that there is a greenish tint, or anything of that sort.[13] What it shows is, rather, that evidence of the greenish tint bears on a theory, a body of sentences of which the given sentence is one—perhaps the one that is salient at a given moment, but not the only one. Many sentences are more deeply theoretically embedded than this one, so that the observable circumstances that affect our acceptance or rejection of them may be extremely remote from anything that would ordinarily be thought of as their meaning. Holism implies that, even given our impossible assumption, meaning is not a straightforward matter. Nevertheless, the imagined situation represents all that there could be to cognitive meaning on a Quinean view.

For the cognitive meaning of a word, then, we look to its contexts—the sentences in which it occurs, and the truth-value of each sentence, or the way the truth-value of each varies with variations in the observable circumstances. But then the question is: *which* of the contexts of a word must be determined in order to determine its meaning? Without some reason to discriminate, we have no reason to treat one context as more definitive of a word's meaning than any other. But then no true sentence in which the word appears would have any better claim to be analytic than any other such sentence; it seems unlikely that any useful analytic-synthetic distinction can be erected on that basis.[14] If we are to obtain any reasonable version of the distinction, we must be able to discriminate among contexts and say that the truth of some is constitutive of the meaning of a given word, and that those sentences are therefore true in virtue of the meaning of that word.

What sort of thing might give us reason to discriminate among contexts in this way? If mastery of some very small subset of a word's uses gave one mastery of its use as a whole, then there would be reason to say that those uses, those contexts, constituted its meaning. And clearly this happens in some cases. A child who otherwise has a fair degree of linguistic sophistication but does not know the word "bachelor" can be given a mastery of that word all at once, at a single stroke, by being told that bachelors are unmarried men. This fact gives us every reason to say that "bachelor" *means* "unmarried man," and hence also to say that the sentence "All bachelors are unmarried" is analytic—which Quine would certainly not deny.[15] Very much along the same lines, Quine claims that in some cases one learns the truth of the sentence in coming to understand it. Socializing this idea, he suggests, will yield a suitable criterion for analyticity: "a sentence is analytic if *everyone* learns that it is true by learning its words."[16] And he has expressed some sympathy with a suggestion that goes further in the same general direction, that we should count a sentence as analytic if failure to accept it indicates that the speaker is not a competent user of one or more of the words in that sentence.[17]

It is useful here to compare the position I have attributed to Quine and that defended by Putnam in "The Analytic and the Synthetic," perhaps the most insightful of the early responses to "Two Dogmas."[18] Putnam takes it that Quine in "Two Dogmas" straightforwardly denies that there is any distinction at all between the

analytic and the synthetic. He argues that this view is mistaken, that the analytic-synthetic distinction cannot be wholly denied; Quine in fact agrees on this point, at least in *Word and Object* and later. More importantly, Putnam also argues that the distinction will not in fact do any epistemological work, because all analytic truths are trivial and uninteresting. Certain concepts, Putnam points out, are single-criterion concepts: the only criterion for being a bachelor is being an unmarried man; the only criterion for being a vixen is being a female fox, and so on. These are the concepts that give rise to analytic statements. In such cases we have only one criterion for the application of the word, and we have reason to think that this situation will not change. A statement such as "All vixens are female foxes" has, as Putnam says, "little or no systematic import.... There could hardly be *theoretical* reasons for accepting or rejecting it."[19] For this reason, analytic sentences will all be trivial. Interesting concepts, by contrast, have multiple criteria for their application. The theoretical concepts of science, in particular, are what Putnam calls "law-cluster concepts:" their identity is given not by a single criterion of application but rather by a multitude of laws and inferences into which it enters. To separate these laws into the analytic and the synthetic, Putnam claims, would be misleading: even if some are called "definitions," still all are involved in our learning the term concerned. Here again, Quine is in agreement with Putnam.[20]

Now let us consider what I have called the issue of the *scope* of analyticity. How extensive is the notion of analyticity, on the sort of understanding of it that is acceptable to Quine and to Putnam? Initially one might think that it is very limited indeed. All of the sentences that count as analytic by any criterion of the sort suggested above, it seems, will be trivial (in the ordinary and literal sense of that word), and not subject to dispute. But in fact Quine, at least in his later writings, takes a somewhat broader view of the matter. He counts certain inference-patterns as analytic (or as analyticity-preserving), and argues that we should count as analytic "all truths deducible from analytic ones by analytic steps."[21] On this understanding of the matter, he claims, first-order logic will count as analytic. We might come to repudiate the law of the excluded middle, say, but our doing so would involve a change of meaning.

Crucially, however, there is no prospect of arguing on the same or similar basis for the analyticity of mathematics as a whole. Quine takes Gödel's incompleteness theorem to show that mathematics as a whole is *not* deducible by obvious steps from obvious truths.[22] For any philosopher, perhaps, and for a scientifically-minded philosopher quite certainly, mathematics is the central and most important kind of knowledge that is usually classified as a priori. An account of analyticity that does not extend to mathematics will not perform the central function of the traditional conception of the a priori.

III. An Epistemological Distinction?

We now turn to the issue of the significance of the distinction between the analytic and the synthetic. Quine himself, in his later work, came to see this issue as the crucial one in discussions of analyticity. In a work published in 1986, he wrote, "I now perceive that the philosophically important question about analyticity and the linguistic doctrine of logical truth is *not* how to explicate them; it is the question

rather of their relevance to epistemology."[23]

Here, and in what follows, it will be helpful to contrast Quine's views with those of Carnap. (Remember, however, that our concern is to understand the former, not to do justice to the latter.) Unlike more traditional conceptions of the a priori, analyticity in Carnap's philosophy is not an absolute notion; it is language-relative. So to call a sentence analytic is not to say that it is (absolutely) unrevisable: we may cease to accept a sentence that up to that point we had counted as analytic, or we may come to accept a sentence whose negation we had, up to that point, counted as analytic. As Carnap says, "No statement is immune to revision."[24] The point of Carnap's distinction between the analytic and the synthetic is not that sentences of the former kind are unrevisable; it is, rather, that any revision of an analytic sentence is a change of language. If the language changes then certainly a sentence that was once held to be true, and analytically true, may now be held to be false; and for Carnap we can change the language as we please. (Here it is perhaps helpful to think of the informal characterization of analytic sentences as those that are true in virtue of the meanings of the words they contain. Then the point is simply that the meanings of words may change, giving rise to changes in the status of sentences that were previously analytic.) So on Carnap's account an analytic sentence, we might say, is "immune to revision" *provided that* there is no change of language.

One way of marking the distinction between the analytic sentences and the synthetic sentences is thus to say that the revision of an analytic sentence must be a change of language, while the revision of a synthetic sentence is a change of belief or of theory within a language. We can, accordingly, raise the issue of the epistemological significance of the distinction by asking: what *epistemological* difference is there between a change of mind that involves an analytic sentence and one that involves a synthetic sentence? Is there a clear and systematic difference in the way the two kinds of revision are to be justified? At least in some of his writings, Carnap seems to offer an answer to exactly this question.[25]

Let us speak of an *internal revision* when we have a revision involving a synthetic sentence (and thus no change of language); and of an *external revision* when an analytic sentence (and therefore also a change of language) is involved. On Carnap's account, there seems to be a clear epistemological distinction between the two. In the former case, a synthetic sentence is involved, and there is a question of the justification for the revision, of the evidence that can be brought to bear for or against making it. In the latter case, by contrast, there is no question of justification or of evidence. The very concepts of justification and evidence, for Carnap, are language-relative; to speak of a sentence as justified or not presupposes a particular language, a framework that gives sense to those concepts.[26] So an internal revision can be evaluated as more or less justified; because no change of language is involved, we have those concepts to draw on. But an external revision is another matter. Here no one language is presupposed: the question is precisely one of shifting from one language to another. Since no particular language is presupposed, there is no notion of justification in terms of which the change can be evaluated.

Similarly, an internal revision—a change of theory within a language—is correct or incorrect; the (synthetic) sentence under consideration is either true or false. Correctness and truth, however, are also, for Carnap, language-relative concepts:

they apply only when a particular language is presupposed. When an external revision is under consideration, therefore, they do not apply. An external revision is, properly understood, a proposal that we should use a different language (though the difference may be very minor). This sort of proposal, however, suggests that we shift our concepts of justification and of truth (since these concepts are language-relative). Evaluating a proposal of this kind, therefore, is not a matter of deciding on its correctness, or even its justification (not, at least, in anything like the sense in which a synthetic sentence may be justified). It is, rather, a pragmatic question: what is at stake is not truth but convenience. "The acceptance [of a new language] cannot be judged as being either true or false because it is not an assertion. It can be judged as being more or less expedient, fruitful, conducive to the aim for which the language is intended."[27]

There is a kind of circularity in this Carnapian picture. Analytic sentences are to have a different kind of epistemological status from others. (Since epistemology presupposes a language, and the analytic sentences of that language, it might be said that their status is not really an *epistemological* status at all, that epistemological questions simply do not apply to them. We shall return to this point shortly.) This epistemological difference rests on the idea that within a language (at least of the appropriate kind) there is a clear concept of justification, while no such concept is applicable to the choice of language. But the idea that there is a clear concept of justification within a language rests, in turn, on the claim that rules of language have an epistemological status different from that of synthetic sentences. Carnap attempts to reconstruct—to explicate—the notion of justification, and these attempts presuppose that rules of language, and sentences that follow from them, belong to an epistemically privileged class of sentences. So it seems that to arrive at the conclusion that analytic sentences are epistemologically different from others, we must be explicating the concept of justification in a way that already presupposes this conclusion.

Circularity is not always a philosophical vice. For Carnap, I think, the kind of circularity sketched above indicates that if we wish to view analytic sentences as epistemologically different from others—if, for example, we find it a useful way of attaining a philosophical understanding of how scientific knowledge progresses—then we are free to do so. He might claim that his view is part of a consistent and, so to speak, self-reinforcing conception: perhaps we are not forced to such a conception, but if it gives interesting results, or appeals to us for other reasons, we may adopt it.[28] How can Quine break into the circle so as to undermine the Carnapian picture? The answer depends on the parenthetical point deferred in the previous paragraph. For Quine, epistemological questions apply to all sentences, the analytic as well as the synthetic; they cannot simply be rejected. It is, at most, the kind of answers to those questions that may differ when the sentence is analytic rather than synthetic.

Given this interpretation, the Carnapian picture depends upon the contrast between the sort of justification available within a language and the sort of justification (or: 'justification') available when no language is presupposed. As Quine sees the matter, Carnap's contrast is that the former is rule governed, with rules of the language setting out the relation of each sentence to the observations that would justify it; the latter is not rule governed, and is a matter of convenience and of vague

pragmatic factors (hence it is 'justification' only by a stretch of that word). On this reading of Carnap, it is for the philosopher to explicate the notion of (internal) justification that applies to this or that language. But there is no guarantee that the attempt to do so for any language will succeed and will in fact capture a concept that comes close to doing justice to our actual epistemic practices. Seen in this way, Carnap's view is vulnerable at this point. There simply may be no clear contrast between internal revision, where a relatively straightforward notion of justification applies, and external changes, where nothing of the sort is true. (We should note, however, that a more sympathetic reading of Carnap might take his view to reject the epistemological question as entirely inapplicable to analytic sentences. If that is correct, then the gap between Carnap's views and those of Quine is larger than I have perhaps suggested, and debate between them more clearly a missing of minds. But my concern here is, again, with Quine's views.)

It is, I think, a crucial part of Quine's view that there is no clear-cut contrast between internal revision and external revision. We do not in fact have rules setting up that sort of tight relation between theory and evidence. Attempts to formulate such a 'confirmation relation' governing internal revisions quickly proved inadequate except in relatively constrained situations. As Quine says in "Two Dogmas:" "I am impressed...with how baffling the problem has always been of arriving at any explicit theory of the empirical confirmation of a synthetic statement."[29] It is important here that Quine is talking about synthetic statements quite generally. Locally, in particular cases here and there, we do seem able to give fairly precise accounts of the extent to which given evidence confirms a given claim. We can perhaps say with some confidence to what extent the statement that the parents of a child are blue eyed justifies the prediction that the child itself will also have blue eyes. Presupposing a background theory enables us to make precise statements about the degree of confirmation of some sentences by others. But if we turn our attention to the background theories themselves, then the prospect of anything similar seems implausible; when we consider our system of beliefs as a whole, it seems out of the question. We have no reason to expect a rule-governed notion of justification for synthetic statements in general.

Holism, in Quine's view, gives us principled reasons to think that no such theory of confirmation is available. According to that doctrine, the relation of justification does not, in general, hold between experience and individual sentences, but rather between experience and theories, more or less sizeable groups of sentences. We cannot in general think of an individual sentence as being confirmed or disconfirmed by experience at all. The justification of a sentence is, in general, that it is part of a theory that, taken as a whole, does a better job of predicting and explaining sensory experience than any other. In practice this means, very roughly, that the theory predicts experience at least as well as any rival, and that it is better than any rival in being simpler, more fruitful, easier to work with, and so on. These factors can no longer be thought of as mere matters of convenience, or as merely pragmatic. For theories in general, they are all that we have to go on.

As Quine reads Carnap's views, then, they depend upon an epistemological contrast: internal questions are to be settled by rule-governed procedures of justification, procedures that are obviously unavailable for external questions. Given holism, such rule-governed procedures of justification are not in general available,

even for what anyone would count as synthetic sentences. (They are not *in general* available: as we indicated, they may be in special cases.) If a given sentence at some level of theoretical abstraction is at issue, all we can do is to compare the theory that we have if we accept that sentence with the theory that we have if we accept some alternative. And the choice between the two theories is to be settled by seeing which of them better enables us to cope with experience. This is in part a matter of yielding correct predictions; it is also in part a matter of simplicity, convenience, fruitfulness, and so on. In short: justification—even internal justification, even of supposedly synthetic sentences—is to some extent a matter of just those vague 'pragmatic factors' that Carnap says play a role in connection with external ques- tions—choice of language—but *not* in connection with internal questions. Quine argues that the same pragmatic factors also play a crucial role in internal questions and advocates, as he famously says, "a more thorough pragmatism."[30]

In light of this, consider the external side of the (alleged) distinction. Carnap holds that the choice of language is not a matter we can be right or wrong about, not a matter for justification: hence the Principle of Tolerance. The language of Newton's physics and the language of Einstein's physics, say, differ in expressive power: what can be said in the one cannot, in all cases, be said in the other. Some choices of language, however, are more efficient than others, more conducive to the construction of successful and fruitful theories. Why should we apply the Principle of Tolerance to questions of language-choice? Why should we not think of this as a matter about which we can be right or wrong? If adopting one language rather than another enables us to formulate better theories of the world, why should we not speak of the choice of that language over the other as *correct*? From a Quinean per- spective, the only reason not to do so would be if talk of correctness goes together with a relatively strict conception of justification, a conception that makes it more than merely a matter of efficiency. But if in fact such strict notion of justification is not available anywhere, then justification everywhere must, perforce, be seen as in part a matter of efficiency— and this is clearly a notion that will apply to Carnap's 'external' revisions as well as to his 'internal' revisions. In other words the epistemo- logical contrast between the two kinds of questions will have broken down. We would thus no longer have a reason to say that one sort of question has no right or wrong answer while the other does.[31]

For Quine, then, even if one grants the distinction between analytic sentences and synthetic sentences, and thus also the distinction between choice of language and choice of theory, this does not seem to mark a significant *epistemological* differ- ence. The sorts of considerations that might lead us to change from one language to another are not in principle different from the sorts of considerations that might lead us to make a change from one theory within a language to another theory within the same language: in each case the most we can say, generally and in the abstract, without detailed examination of the particular case, is that the new theory is simpler, or more elegant, or more fruitful, than the old—whether the new theory is within the same language or involves adopting a new language. On this reading, Carnap's picture depends on a distinction between the vague pragmatic factors that operate in choice of language and the more rigid rule-governed justification that operate within a language. But if we accept Quinean holism about justification we must also accept that the idea of such a rigid notion of justification is a myth: prag-

matic factors operate everywhere. In Quine's view, therefore, there is no epistemological cleavage between the analytic and the synthetic, or between change of language and change of theory within a language.

IV. Explaining the A Priori

Quine's views as we have discussed them so far are negative: we have been considering his objections to (what he takes to be) Carnap's use of the notion of analyticity. The negative point, however, is supplemented by a positive one: that we have no need for Carnapian analyticity, because we have no need for a substantive notion of a priori knowledge. As we have said, Quine takes it that epistemological questions are everywhere applicable; in particular, that they are applicable to what Carnap counts as analytic sentences as well as to those that he counts as synthetic. He sees analyticity as Carnap's attempt to answer those questions.[32] On that view, the notion is needed because certain truths—most notably those of mathematics and logic—seem to almost all philosophers just evidently different in kind from ordinary empirical truths;[33] Quine himself, as we have seen, accepts at least that there are "palpable surface differences" here.

Quine's negative point is thus incomplete without an alternative account of our knowledge of these truths, the supposedly a priori, as we might call them. And he does, indeed, offer such an account. The crucial point, again, is holism, or the denial of the dogma of reductionism. Quine puts it like this:

> The second dogma of empiricism, to the effect that each empirically meaningful sentence has an empirical content of its own, was cited in "Two Dogmas" merely as encouraging false confidence in the notion of analyticity; but now I would say further that *the second dogma creates a need for analyticity as a key notion of epistemology, and that the need lapses when we heed Duhem and set the second dogma aside.*[34]

Quine takes holism to cast doubt not merely on Carnap's distinction between the analytic and the synthetic but also on the more general distinction between the a priori and the empirical.[35] Some supposedly empirical claims are related to experience only very indirectly, via much other theorizing. The claims of the Theory of General Relativity, say, can be tested by experience, but only if we accept (at least provisionally, for the purposes of the experiment) a large body of other theories—including a good deal of mathematics. It would be absurd to take one sentence from Einstein's theory and ask of that sentence, in isolation from everything else we take ourselves to know, what are *its* empirical consequences. In thinking of such a sentence as empirical—as having observational or experiential consequences that enable us to test it—we are not thinking of it in isolation; we are thinking of it rather as an integral part of a large body of theory that, taken as a whole, has such consequences. In *this* indirect and holistic sense, Quine claims, the supposedly a priori may also have observational consequences. Mathematics can be thought of as having the same kind of indirect confrontation with experience as the hypotheses of a very abstract theory of physics has.

Quine thus claims that the supposedly a priori claims of logic and mathematics are epistemologically on a par at least with the more abstract claims of physics. In each case, a given claim taken by itself has no consequences for experience; in each case, however, the given claim is an integral part of a more general theory that, taken as a whole, does have such consequences. Logic and mathematics are thus not wholly free-standing theories, independent from the rest of our knowledge. They are, rather, integrated with our knowledge as a whole; it is in their role within our wider system of beliefs that their ultimate justification lies.

Does this mean that Quine takes logic and mathematics to be *empirical*? No: in denying the distinction between the a priori and the empirical, he is not simply consigning everything to one side of the distinction. If one says that for Quine all truths are empirical, one must immediately add that he is reconceiving this latter notion, along holistic lines. Quine explicitly denies the sort of view often attributed to J. S. Mill, that our knowledge of the truths of arithmetic, say, is directly based on observation, in the same sort of way in which my knowledge of the truth of "There is a desk in front of me" is directly based on observation. Arithmetic is not empirical for Quine in that sense:

> The kinship I speak for is rather a kinship with the most general and systematic aspects of natural science, farthest from observation. Mathematics and logic are supported by observation only in the indirect way that those aspects of natural science are supported by observation; namely, as participating in an organized whole which, way up at its empirical edges, squares with observation. *I am concerned to urge the empirical character of logic and mathematics no more than the unempirical character of theoretical physics; it is, rather, their kinship that I am urging, and a doctrine of gradualism.*[36]

The problem, as Quine sees it, is to explain the status of mathematics along lines acceptable to an empiricist, that is, in a way compatible with the idea that all real knowledge has to do with the prediction of sensory experience. As we have indicated, Quine explains one aspect of this status, the fact that mathematics counts as knowledge at all, along holistic grounds: it plays a crucial role in a theory that, taken as a whole, is used in the prediction of experience. The other crucial aspect of the status of mathematics is the way in which it is unlike other branches of knowledge: its claims are answerable to proofs rather than to experiments; such claims, once firmly established, are never in fact abandoned, whatever experimental results we find; and the falsity of such claims is often said to be not merely unlikely but unimaginable. A Quinean explanation of these features is to be found not in the mere fact that mathematics plays a role in our knowledge as a whole, but rather in the nature and peculiarities of that role.

We shall not linger over the details here, but it is clear that it is the generality of logic and mathematics, their centrality to our knowledge as a whole, that is responsible for their special status. Abandoning or greatly modifying established mathematics would require us to reconceive our system of knowledge from the ground up. No wonder such a thing is beyond imagination, and no wonder we have every

reason to avoid it. Quine appeals to exactly these sorts of factors to explain why logic and mathematics are often thought of as sharply distinct from other branches of knowledge and why, in particular, they are taken to be a priori and necessary:

> At the end of *Philosophy of Logic* I contrasted mathematics and logic with the rest of science on the score of their versatility: their vocabulary pervades all branches of science, and consequently their truths and techniques are consequential in all branches of science. This is what had led people to emphasize the boundary that marks pure logic and mathematics off from the rest of science. This is also why we are disinclined to tamper with logic and mathematics when a failure of prediction shows that there is something wrong with our system of the world. We prefer to seek an adequate revision of some more secluded corner of science, where the change would not reverberate so widely through the system.

This is how I explain what Parsons points to as the inaccessibility of mathematical truth to experiment, and it is how I explain its aura of a priori necessity.[37]

V. Holism and Analyticity

Our sketch of Quine's views on analyticity has invoked holism at a number of crucial junctures: to explain his rejection of the atomistic notion of cognitive meaning that figured in our initial supposition; to explain Quine's reasons for thinking that analytic sentences do not differ from others in any epistemologically significant way; and, finally, to explain how an empiricist can accept mathematics and logic as part of our knowledge. The final point I want to make in this essay is that I don't think that the best way to think of the issues we have discussed is as a number of distinct arguments, each of which happens to have holism as a crucial premise. Certainly it would be quite wrong to think that it is somehow a matter of chance that a single doctrine is involved here.

To the contrary: Quine's holism is part and parcel of his reconception of knowledge in a way that leaves neither room for, nor need for, a serious notion of the a priori. The crucial result of this reconception, from the present perspective, is that *all* claims to knowledge can be judged by a single criterion: whether the given sentence is part of a theory that, taken as a whole, is superior to any available rivals. This criterion applies to individual sentences by taking them as integral parts of wider theories; there is not, in general, going to be any criterion that is applicable to sentences taken one by one, in isolation from the theory in which they figure. The criterion is, of course, exceedingly abstract and general. At a more concrete level, there will be various things to say about various sentences. What Quine denies, however, is that there is an interesting or useful bifurcation into very general sorts of points that apply to analytic sentences and very general sorts of points that apply to synthetic sentences. At the most general level, justification is monistic: there is one very general criterion applicable to sentences of all kinds. Our point about epistemological significance follows immediately from this statement: even analytic sen-

tences are judged by this same criterion, hence they are not on a different epistemo-logical footing from others. The lack of need for a separate account of the a priori also follows as soon as we see that the criterion applies to the putatively a priori, to logic and mathematics, in particular.

Essentially the same point is involved in Quine's rejection of an atomistic notion of cognitive meaning as a basis for analyticity. We might put it like this. If we consider cognitive meaning atomistically, as applying to sentences one by one, then very many of our sentences lack cognitive meaning entirely, since taken by themselves they have no implications for experience. These will include many sentences no one wants to call analytic. This consequence may lead us to use a more liberal notion, and say that a sentence has cognitive meaning just in case it plays a crucial role in a theory that, taken as a whole, has implications for experience. In that case, however, we have a notion that applies equally to logic and mathematics. The underlying point, however, is that for almost all sentences a workable notion of justification, and hence of cognitive meaning, must apply not to the individual sentence but rather to the theories in which it figures; and that any notion of this sort will apply to the supposedly a priori as well as to the supposedly empirical.[38]

Notes

1. W. V. Quine, "Two Dogmas of Empiricism," first published in 1951, reprinted with minor changes in *From a Logical Point of View* (Cambridge: Harvard University Press, 1953, 1961), 20-46; "Carnap and Logical Truth," first published in 1960, reprinted with minor changes in *Ways of Paradox* (Cambridge: Harvard University Press, 1966, 1976), 107-132.
2. Paul Boghossian, "Analyticity Reconsidered," *Nous* 30 (1996), 360-91.
3. "Analyticity Reconsidered," 370.
4. Part of the answer may be that Quine's views were not fully developed at first, so that some of his work—perhaps especially "Two Dogmas of Empiricism," his most famous essay—is misleading. Given the persistence of the misunderstanding, however, this can be only a small part of the answer.
5. Here I presuppose a rejection of the synthetic a priori. This is a point that Quine never questions.
6. "Epistemology Naturalized," in *Ontological Relativity and Other Essays* (New York: Columbia University Press, 1969), 69-90, 79.
7. Whether, or to what extent, this is a correct diagnosis of the appeal of analyticity is, of course, a different question. In the case of Carnap, in particular, there is some reason to think that it does not take us very far. Carnap's technical conception of analyticity does not seem to be based on a notion of meaning, as antecedently understood. (Though he did think that a characterization such as "true in virtue of meaning" gives reason to think that there is an informal notion to which a technical conception more or less corresponds.) Our concern here, however, is with Quine, not with Carnap.
8. "Two Dogmas in Retrospect," *Canadian Journal of Philosophy*, 21 (1991), 265-74, 271.
9. In "Carnap and Logical Truth," Quine speaks of "palpable surface differences between the deductive sciences of logic and mathematics, on the one hand, and the empirical sciences ordinarily so-called on the other." (107-8)
10. This is not to say that the making of assertions is the only form of behavior that is relevant to meaning. In a closely related context (that of the indeterminacy of translation), Quine says, "The relevant evidence even goes beyond speech. It includes blushing, stammering, running away. It includes native customs and rites, and indeed any observable behavior that one can exploit in trying to get a clue as to how to translate the language." ("Comment on Hintikka," in *Perspectives on Quine*, eds. Robert Barrett and Roger Gibson [Oxford: Blackwell Publishers, 1990], 176.)
11. "Truth by Convention," originally published in 1936, reprinted in *Ways of Paradox* (Cambridge: Harvard University Press, 1966, 1976), 77-106, 89.
12. "Carnap and Logical Truth," 113-4.

13. See W. V. Quine, *Word and Object* (Cambridge: MIT Press, 1960), 10-11.

14. It might be thought that we need no reason, but make a wholly arbitrary choice. This is the position that Quine approvingly attributes to Carnap in his 1934 lectures. (These lectures were first given at Harvard in November 1934; they were reprinted for the first time in *Dear Carnap, Dear Van*, ed. R. Creath [Berkeley and Los Angeles: University of California Press, 1990] 47-103.) For some discussion, see the present author's " 'The Defensible Province of Philosophy:' Quine's 1934 Lectures on Carnap," in *Futures Past*, eds. Juliet Floyd and Sanford Shieh (New York: Oxford University Press, 2001), 257-275. Can an arbitrary choice of this sort really generate an epistemologically significant distinction? This question relates to the more general issue of the epistemological significance of analyticity, to which we shall get shortly.

15. See *Word and Object*, section 12; for the most explicit possible statement, see "Two Dogmas in Retrospect," 270.

16. *Roots of Reference* (La Salle, Illinois: Open Court Press, 1974), 79.

17. See the series of videotapes entitled "In Conversation: W. V. Quine," Boolos panel. In the accompanying booklet (*In Conversation: W. V. Quine* [London: Philosophy International, 1994]), the relevant passage is on p. 18. The idea is suggested by Martin Davies. While Quine expresses some sympathy with it, it is worth noting that he also says that it takes us further from observable criteria than his own definition.

18. Hilary Putnam, "The Analytic and the Synthetic," *Minnesota Studies in the Philosophy of Science*, III, eds. Herbert Feigl and Grover Maxwell (Minneapolis: Univeristy of Minnesota Press, 1962); reprinted in Putnam, *Mind, Language and Reality* (Cambridge, U.K.: University of Cambridge Press, 1975), 33-69.

19. Hilary Putnam, "The Analytic and the Synthetic," 68; emphasis in the original.

20. See section 12 of *Word and Object*, especially note 8, in which Quine approvingly cites Putnam and says explicitly: "My account fits with his...."

21. "Two Dogmas in Retrospect" 270.

22. This point goes as far back in Quine's work as "Carnap and Logical Truth;" see especially section II of that essay.

23. "Reply to Hellman," in *The Philosophy of W. V. Quine* (La Salle, Illinois: Open Court Press, 1986), eds. L. E. Hahn and P. A. Schilpp, 207; emphasis in the original.

24. Carnap, "Reply to Quine," in *The Philosophy of Rudolf Carnap*, ed. Schilpp (La Salle, Illinois: Open Court Press, 1963), 921. He goes on to add, immediately, "not even the statements of logic and of mathematics."

25. I inject this note of qualification here because I do not think that Carnap is in fact trying to argue for there being an epistemological difference, at least not of the sort that Quine requires. But, again, the focus of our interest here is Quine, not Carnap, and from Quine's point of view I think the crucial issue is the epistemological difference, if any, between the two sorts of change.

26. A recent—and largely sympathetic—commentator on Carnap puts the point this way: "On Carnap's view, a confirmation theory is given only subsequent to and relative to a linguistic framework. Given a linguistic framework, we can define a confirmation theory for it. But the specification of the linguistic framework, and, thus, of the analytic sentences must come first...." Alan Richardson, *Carnap's Construction of the World* (Cambridge, U.K.: Cambridge University Press, 1998), 224.

27. Carnap, "Empiricism, Semantics and Ontology," first published in *Revue Internationale de Philosophie* 4 (1950), 20-40; reprinted in *Meaning and Necessity*, 2nd ed. (Chicago: University of Chicago Press, 1956), 205-221, 214.

28. This suggests the application of the Principle of Tolerance at a meta-level: not only to the choice of language, but also to the philosophical conception of which the Principle of Tolerance is itself a part. See *Meaning and Necessity*, 204.

29. "Two Dogmas," 41-2.

30. "Two Dogmas," 46. Quine later commented as follows on his use of the word "pragmatism:" "This passage had unforeseen consequences. I suspect that it is responsible for my being widely classified as a pragmatist. I don't object, except that I am not clear on what it takes to qualify as a pragmatist. I was merely taking the word from Carnap and handing it back: in whatever sense the framework for science is pragmatic, so is the rest of science." ("Two Dogmas in Retrospect," 272)

31. The issues raised in this paragraph and the preceding are discussed in somewhat more detail in

the present author's "Analyticity and the Indeterminacy of Translation," *Synthese* (1982), 167-184.
32. I have indicated that there is reason to doubt this reading of Carnap. It is also worth noting, however, that there are passages in Carnap's writings that support it. Discussing the importance of Wittgenstein's notion of tautology to the Vienna Circle, Carnap says: "What was important in this conception from our point of view was the fact that it became possible for the first time to combine the basic tenet of empiricism with a satisfactory explanation of the nature of logic and mathematics." ("Intellectual Autobiography," in *The Philosophy of Rudolf Carnap*, 45.) The idea that what is needed is an *explanation* of the nature of the truths of logic and mathematics is precisely the point that Quine insists on.
33. Almost all, but not all; John Stuart Mill is the most obvious case on the other side. See John Skorupski, *John Stuart Mill* (London: Routledge, 1998), especially ch. 4.
34. "Reply to Hellman," in *The Philosophy of W. V. Quine*, 207; emphasis added.
35. Immediately following a discussion of holism, Quine says: "We had been trying to make sense of the role of convention in a priori knowledge. Now the very distinction between a priori and empirical begins to waver and dissolve...." ("Carnap and Logical Truth," 122).
36. *Philosophy of Logic* (Englewood, NJ: Prentice-Hall, 1970), 100; emphasis added.
37. "Reply to Parsons" in *The Philosophy of W. V. Quine*, 399-400.
38. I am grateful to Andrew Lugg for his comments on an earlier draft of this essay.

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