



OXFORD JOURNALS
OXFORD UNIVERSITY PRESS

**Scots Philosophical Association
University of St. Andrews**

Two Dogmas of Quineanism

Author(s): Graham Priest

Source: *The Philosophical Quarterly*, Vol. 29, No. 117 (Oct., 1979), pp. 289-301

Published by: [Oxford University Press](#) on behalf of the [Scots Philosophical Association](#) and the [University of St. Andrews](#)

Stable URL: <http://www.jstor.org/stable/2219445>

Accessed: 26-02-2015 12:51 UTC

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Oxford University Press, Scots Philosophical Association and University of St. Andrews are collaborating with JSTOR to digitize, preserve and extend access to *The Philosophical Quarterly*.

<http://www.jstor.org>

THE
PHILOSOPHICAL
QUARTERLY

VOL. 29 No. 117

OCTOBER 1979

TWO DOGMAS OF QUINEANISM

BY GRAHAM PRIEST

1. INTRODUCTION

A cornerstone of logical positivist philosophy was the analytic/synthetic distinction. All cognitively significant statements were thought to be either synthetic, in which case they could be verified or refuted by experience, or analytic. Experience speaks neither for nor against claims that are analytic. Precisely what does account for their truth or falsity positivists were less than clear about. However, it was a widely held view amongst positivists that analytic statements are true by convention.

These positivist ideas were subjected to severe attacks in the 1950s. The spearhead of the attack was provided by a number of papers by Quine. The attacks were highly successful. Most of the positivist's picture is now discredited, and what is not is highly tarnished.

I do not wish to reinstate positivism. However, I do think that the reaction against positivism has gone too far. Elements that were good in positivist thought have been thrown out with those that are bad. In particular I wish to argue that the two following positivist claims are correct:

- (1) There are certain truths which are analytic
- (2) These are true by convention.

Both these claims are strongly opposed by Quine and I shall, amongst other things, try to show that his arguments are wrong.

2. QUINE ON ANALYTICITY

Let us start with the existence of analytic truths. In "Two Dogmas of Empiricism"¹ Quine presents essentially a two-pronged argument against

¹*From a Logical Point of View* (New York, 1953).

the existence of analytic truths. The prongs are:

- (i) There is no non-circular definition of 'analytic'.
- (ii) Under the pressure of recalcitrant experience there are no beliefs that cannot be held on to, and conversely, no belief that may not be revised.

The first point is not a condemnation of the notion of analyticity. Many important concepts are definable only in circular terms. The importance of (i) is that, if any point in the circle of definitions is attacked, it is no use trying to defend it by appealing to some other notion in the circle since that is itself just as much under attack. For example, in the reply to Quine by Grice and Strawson, "In Defense of a Dogma",² analytic sentences are characterized as those whose truth value cannot be revised without a change of meaning. But this will not do. For synonymy, and its converse, difference of meaning (which is obviously required to make sense of the notion of meaning change), are parts of the very circle all of which is under attack. This is the function of (i).

It is (ii) that provides the direct attack on the notion of analyticity. For it seems to undercut the whole point of drawing the analytic/synthetic distinction. If any belief can be held on to come what may, then we can conventionally refuse to let experience speak for or against *any* sentence we wish. The notion of analyticity is therefore vacuous.

Even if, as Strawson and Grice claim, we can sort sentences into analytic and synthetic by using paradigm examples of each, there is no point in this activity. For no important theoretical difference underpins this division. Similarly we could use observational criteria to sort substances into those containing phlogiston and those not containing phlogiston (as Priestley did), but once the theoretical underpinning of this distinction disappears, this becomes pointless.

In virtue of consideration (ii) Quine proposed his now famous network model which gives an account of belief change without any concessions to analyticity. It is not my intention to question the network model. Indeed, I take the Quine-Duhem arguments on which it rests to be basically sound. However, what I do wish to argue is that even within the network view there is a point to singling out certain truths and calling them analytic. In fact I shall argue that the model actually requires us to draw such a distinction. Rather than dispensing with the notion of analyticity, the network view actually presupposes it.

3. ANALYTICITY DEFENDED

Consider the network model, and let S be the set of beliefs held true at a certain time. At that time certain things happen which dispose the holders of the beliefs to dissent from a belief p , to which they had previously assented,

²*Philosophical Review*, 65 (1956).

and to assent to its negation. The set of their beliefs after this event will therefore be $S - \{p\} \cup \{\sim p\}$.

But of course the changes in the belief set will not in general come to rest here. For beliefs in the network model are not isolated. Various beliefs support one another. This is indeed what makes it a network rather than a set of isolated points. Now consider a very strong case of support. Suppose that $p \& q$ is in S . Then after the change we would have $\{\sim p, p \& q\}$ as a subset of the things believed. Clearly this is unsatisfactory. Obviously either $\sim p$ or $p \& q$ must be rejected from the belief set. However, let us suppose that a stubborn person digs his heels in and refuses to dissent from $p \& q$. 'Yes, I believe $\sim p$ ', we may suppose he says, 'but I will not assent to $\sim(p \& q)$ '. Faced with this situation an unwise person might reply 'Look, $\sim p$ entails $\sim(p \& q)$, so you cannot believe $\sim p$ without believing $\sim(p \& q)$ '. But the reply would come 'Of course $\sim p$ entails $\sim(p \& q)$. I believe that. I also believe $\sim p$; but I will not assent to $\sim(p \& q)$ '. Writing ' \rightarrow ' for entailment (i.e., if . . . then logically . . .) we should have the following as a subset of the things believed:

$$\{\sim p, \sim p \rightarrow \sim(p \& q), p \& q\}$$

The objector could continue 'But look, $\sim p$ and $\sim p \rightarrow \sim(p \& q)$. . .', and we should be off on an infinite regress.

The situation is of course a familiar one. It was amusingly exposed by Lewis Carroll in his paper "What the tortoise said to Achilles".³ A number of morals can be drawn from Carroll's tale. One is the folly of talking to tortoises. However, for our present concern the important lesson is that we need to distinguish sharply between implication (entailment) and inference.⁴ Premises may imply or entail a conclusion: implication is a relationship between sentences. But an inference, or better, drawing an inference, is something that one does, an action. Carroll's regress shows that no extra entailments, taken as premises, can force a person to infer, i.e., to do something. (By 'inference' I mean throughout this paper *deductive* inference.)

Now consider the act of inferring. Inferring like many forms of human behaviour is rule-governed. People who infer conform to certain rules, though this need not, of course, imply that the person following a rule is aware of it. (Consider someone who speaks but is unaware of grammatical rules.) And the rules that govern inference are, of course, normally called "rules of inference". But rules of inference, being rules, are not beliefs. Rules are not things that one believes or disbelieves but things one acts in accordance with or violates. Hence the rules cannot be members of the set of beliefs. The beliefs may provide the content of the web of belief but the

³*Mind*, NS IV, 1895. Reprinted in *Readings on Logic*, edd. I. M. Copi and J. Gould (London, 1972).

⁴The moral is drawn by Ryle in his article " 'If', 'So', and 'Because' ", in *Philosophical Analysis*, ed. M. Black (Ithaca, 1950) and reprinted in Ryle's *Collected Papers*, Vol. II (London, 1971).

rules provide the structure. Content and structure must of course be distinguished. (Two flowers can have the same structure though their contents—the material of which they are made—differ.) And the belief/rule distinction is a special case of the content/structure distinction. Carroll's paradox underlines the fact that we must draw the former distinction in this particular case. Without it we can give no account of the functioning of the web of belief.

Rules of inference, then, not being beliefs, cannot be believed. But there are statements (which can be believed) which clearly bear close relationships to rules, *viz.*, the corresponding conditionals. Corresponding to the deductive rule A/B is the logical conditional, best expressed as 'That- A entails that- B '. (It can also be expressed as 'If A then, logically, B ', the 'logically' indicating that the connection between A and B is a deductive one and not an inductive one, as, e.g., in 'if you jump out of this second floor window you will hurt yourself'. I shall continue to write it as ' $A \rightarrow B$ '.) The rule and the corresponding conditional are distinct. Neither is the conditional a statement of the rule (which would be 'from A , B may be inferred'). Neither is it a statement that the rule is valid. However, the conditional is true if and only if the rule is valid. As a first approximation to analyticity, we might take an analytic sentence to be one which corresponds to a valid rule of inference. However, this would be unduly restrictive. Not only would this make all analytic sentences conditional in form but the class of analytic sentences would not be closed under entailment, an obviously desirable feature. Hence I propose the following characterization of analyticity: an analytic sentence is any sentence which can be validly inferred from conditionals corresponding to valid rules of inference, i.e., if \vdash is the deducibility relationship and A the set of analytic sentences,

$$A = \{p \mid (\exists S) [(\forall q \in S) (\exists q_1 q_2) (q = \text{'}q_1 \rightarrow q_2\text{' and } \{q_1\} \vdash q_2 \text{ and } S) \vdash p]\}$$

In picturesque terms, we might say that the (valid) rules of (deductive) inference form the structure of the web of belief and the analytic sentences are those (possible) members of the web which reflect the structure. For future reference (in §7) I here note a property of analytic sentences:

- (P) If a logical conditional is true it is analytic. For if ' $A \rightarrow B$ ' is true, the inference A/B is certainly valid and hence ' $A \rightarrow B$ ' is analytic since $\{A \rightarrow B\} \vdash A \rightarrow B$.

It is interesting to note that, in his paper "Analytic/Synthetic",⁵ Jonathan Bennett appeals to the Lewis Carroll regress to back up his definition of local analyticity (analyticity in an argument/confirmation situation). Bennett concludes that the regress of entailment sentences must stop somewhere and the sentence with which we stop is locally analytic.

Although this is in a sense right, there is an important confusion here which needs to be cleared up. The infinite regress is stopped only by moving

⁵*Proceedings of the Aristotelian Society*, 54 (1958-9).

from premise to conclusion, and this can be done only by applying a rule of inference. It is true that the conditional corresponding to the rule may acquire a special status because the rule is applicable, but this is essentially a derivative matter. It is applying the rule which corresponds to the locally analytic sentence which breaks the regress. Bennett implicitly recognizes this in the following passage:

Normally the [locally analytic sentence] will not be stated in the argument but if it is stated it will be labelled as a rule of inference or in some other way which would make it clear that no further-back sentences are admitted . . . to be in need of statement at all in this argument (*op. cit.*, p. 186).

Bennett's confusion between a statement and a rule is quite clear in this passage. Quine is similarly confused when he states:

Re-evaluation of some statements [of the web of belief], entails re-evaluation of others, because of their logical interconnections—the logical laws being in turn simply certain further statements in the system.⁶

A statement in the system may be a statement corresponding to a logical interconnection but it cannot be the logical connection on pain of infinite regress. In exactly the same way a relationship between two objects cannot be a third object.

So much then for the confusion of identifying rules with statements. An important point to emphasize at this juncture is that I am not denying the possibility of changing the rules which govern the web, and which determine which sentences are analytic. As with a house, so with the web of belief: both structure and content may be changed, but it is important to see that a change in structure is different from a change in content. Both can be changed independently, even if both are normally modified simultaneously. Hence we can freely admit the second prong of Quine's attack on analyticity (see §2), whilst still maintaining the existence of analytic sentences. In particular, Quine's claim that the two dogmas of empiricism (*viz.*, reductionism and the analytic/synthetic distinction) are "at root identical" (p. 41) is incorrect; for it is possible to maintain one without the other. The web of belief view, which I have endorsed, is based on a rejection of reductionism but still retains a place for the analytic/synthetic distinction.

It is perhaps worth mentioning that in §4 of "Two Dogmas of Empiricism" Quine does consider a definition of analyticity similar to the one I have given. The definition is that a sentence is analytic if it is true according to a semantical rule, where a semantical rule is a rule to the effect that certain sentences are true. Quine objects to this definition on the grounds that we have no independent purchase on the general notion of a semantical rule: a semantical rule is distinguishable "only by the fact of appearing on a page under the heading 'Semantical Rules'" (p. 34). Thus the definition is useless.

⁶"Two Dogmas of Empiricism", p. 42.

The definition I have given is similar to this definition in that it defines analyticity in terms of rules. But it is dissimilar in that they are rules of inference and not semantic rules. The difference is important. For we do have an independent purchase on the notion of a rule of inference: given any language which people use to express their reasoning there is a theoretical procedure for determining what these rules are. It is by no means an effective procedure but it is a procedure none the less. I shall discuss it in §4 below. Again the analogy with grammatical rules suggests itself. Are the grammatical rules of a natural language solely those rules to be found in a grammar book on a page under the heading 'Grammatical Rules'? Clearly not. For any grammar may turn out to be wrong (as most have). Quite independently of any particular set of grammatical rules, we have a general idea of what it is to construct a grammar for a language. Similarly, quite independently of any sets of rules of inference, we have a general idea of what it is to construct a logical theory.

Let me conclude this section by summarizing the central points of the discussion so far. Our beliefs form a network. The nodes of the network are individual beliefs. The connections between the nodes cannot be the same kind of entity (on pain of the Carroll infinite regress) but are rules of inference. Although rules are not members of the web of belief the logical conditionals corresponding to them may be. In particular, the analytic truths are the logical consequences of the logical conditionals corresponding to the rules of deductive inference governing the web of belief. The Carroll paradox shows that the notion of analyticity is not vacuous.

4. RULE AND THEORY

I have now singled out a class of statements and proposed to call them "analytic". However, the characterization I have given is by no means the positivist one. Why then should we call them "analytic"? There are two reasons justifying this nomenclature:

- (1) The analytic truths as I have characterized them seem to include most of the paradigm positivist examples of analytic sentences.
- (2) The analytic truths are true, as the positivists took them to be, by convention.

I shall discuss the second point in the next section and take up the first one now. I have said that those statements are analytically true which correspond to valid deductive rules, or which follow deductively from those that do. I have as yet said nothing about which rules are valid, nor yet how to determine this. How in fact we do determine which rules are valid is no easy matter to state. I take the situation to be analogous to determining the grammatical rules that govern English. There is no straightforward sense in which the rules can be read off from the practice. Neither is it much use asking people whether a certain grammatical rule is correct, for of course they may be mistaken in virtue of obscure counter-examples.

What we have, rather, is a set of data, namely a set of strings of words concerning which there is general agreement whether or not they are grammatical. The grammarian's task is then to construct a theory of grammar which accounts for the data. During this process there is the characteristic interplay between theory and data. The data may serve to dispose of a theory if it clashes with it. On the other hand, a good theory may undermine the initial data by showing that it is not correct. Thus theory construction is always a tentative procedure.

The case with rules of inference is exactly the same. We start with a collection of particular inferences generally agreed upon to be deductively correct. The problem then is to construct a theoretical account of rule validity which does justice to the data. It must be admitted straight away that we have a large number of rules of thumb but no such general account at present. The only kinds of inference for which we do have anything like a general theory are those involving logical particles such as 'and', 'all', etc. However, as we shall see below, there is no particular reason to be too pleased with the orthodox theory.

We have therefore to distinguish between analyticity and epistemic necessity.⁷ The nature of analytic truths gives them a special ontological status—call it some form of necessity if you wish. However, that confers on them no special epistemic status. We have no infallible way of determining the valid rules of inference and hence the analytic truths. This has to be the subject of a theoretical investigation which is all too fallible and which, moreover, in the main yet remains to be done.

Providing a general and adequate theory of validity is a big problem that still needs much work and which will go hand in hand with the development of an account of semantics for English. However, it seems reasonably plausible to suppose that according to any such account examples such as the following will be analytic:

If Socrates is a bachelor, he is unmarried
 If this is red (all over), it is not blue (all over)
 If it is raining and it is snowing, then it is raining.

These are paradigm examples of positivist analyticity, and I take this to show that the class of sentences I have characterized as analytic will coincide extensionally (more or less) with the class of sentences positivists called "analytic".

5. VALIDITY AND CONVENTION

I now wish to turn to the second reason for calling these sentences analytic: this is that they are true by convention. The analytic truths are determined by the valid rules of inference. Once the valid rules of deductive inference

⁷This distinction in the context of Quine's philosophy is clearly drawn by S. Haack in "Analyticity and logical truth in *The Roots of Reference*", *Theoria*, 43 (1977).

are fixed, this determines which logical conditionals are true; and these together with the valid rules of inference determine which other sentences are analytically true. I shall argue that the validity of a deductive inference is, in a sense I shall make precise, a conventional matter. It follows that analytic truths are, in the same sense, conventionally true.

First, let me explain the sense in which I take deductive validity to be conventional. Inferring is something that people do. But it is not a purely random activity: it is guided by a set of rules, rules of inference. Thus inferring is a case of rule-conforming behaviour. A rule is valid if and only if it is one of the rules "in force", i.e., one of the standards which govern people's practice of inferring.

This account of validity is a kind of naturalism. So before going any further it is probably worth disarming an anti-naturalist objection standardly applied to the present account. Could it not be that a norm itself is incorrect, i.e., that the norm sanctioned the drawing of mistaken inferences? It is easy enough to see what it would be for an individual to make a mistake in inferring, but what would it be for a whole practice of inferring to be mistaken? If that means anything at all it must be something like this: the practice allows people to infer false conclusions from true premises. Could this situation arise? To suppose that it could is to suppose that whether a sentence is true or false is determined independently of the sorts of deductive inferences the sentence occurs in. That this is not so is obvious enough. The inferences that sentences occur in are important factors in fixing the meaning of the sentences (or the words that occur in them) and hence of the truth or falsity of the sentences. Let me put the point in much more concrete terms. Suppose we came upon a linguistic community who appear to infer 'A' from 'A or B'. We could have no better evidence that the community does not mean what we mean by 'or'. As Quine himself puts it, logic must be built into our translation manual.⁸ Thus this objection to my account of validity, or at least this naive way of putting it, will not work. If it can be put in a more sophisticated form, I leave that to a genuine objector.

So much for the digression. Now, to return to the main point, validity is to be identified with the norms that are in force. However, these are, in a sense, conventional. A rule of deductive inference "in force" does not force us to act in a certain way. Rather, that a rule of inference is in force is the result of the concurrence of human actions: that people agree in the way to proceed. Thus, which rules are valid is a matter which depends upon human agreement (of action). In this sense it is conventional.

The above account of what constitutes rule validity is based on the analysis of rule-following provided by the later Wittgenstein.⁹ I shall not therefore argue for it directly since I take the supporting arguments to be

⁸*Philosophy of Logic* (Englewood Cliffs, 1970), p. 82.

⁹See, for example, *Philosophical Investigations* (Oxford, 1953), especially §§198-241.

well known. Instead I shall argue for it by attacking the main alternative view. The account I have been giving makes a social practice, inferring, primary. Validity is a derivative matter, defined in terms of the norms in force, and truth is, at least in part, determined by validity. The alternative account turns this procedure on its head. The notion of truth is taken as primary. Validity is defined in terms of truth-preservation and, so defined, is taken to provide the norms for a social practice, inferring.

This is the approach to validity that is taken in standard logical theory. A definition of truth-in-an-interpretation is given directly and a valid rule is defined to be one for which there is no interpretation in which the premises of the rule are true and the conclusion false. Such has been the influence of model theory on the logical community that the alternative to the view I have been advocating is orthodoxy. Despite this I think it is wrong. For the notion of validity that comes out of the orthodox account is a strangely perverse one according to which any rule whose conclusion is a logical truth is valid and, conversely, any rule whose premises contain a contradiction is valid. By a process that does not fall far short of indoctrination most logicians have now had their sensibilities dulled to these glaring anomalies. However, this is possible only because logicians have also forgotten that logic is a normative subject: it is supposed to provide an account of correct reasoning. When seen in this light the full force of these absurdities can be appreciated. Anyone who actually reasoned from an arbitrary premise to, e.g., the infinity of prime numbers, would not last long in an undergraduate mathematics course.¹⁰

Even if the definition of validity in terms of truth-preservation were extensionally correct (which I have argued it is not), there would still be reasons for supposing that the orthodox account gets things upside down. The important question to ask is how we get to know that a certain particular inference is valid. If the orthodox account were correct we should have to determine that it was an instance of a schema which was truth-preserving. But in general the number of instances of a schema is infinite. There is therefore no question of checking that in each instance truth is preserved, and therefore no way to determine that an inference is valid. This is obviously wrong. The truth of the matter is quite the reverse: we do not determine that a particular inference is valid by determining that it is an instance of a truth-preserving schema. Rather we are able to determine that a particular inference is (materially) truth-preserving (even if we do not know the truth values of the premises and conclusion) since we have a prior ability to recognize valid inferences.

Let me recapitulate the main points of the discussion. Analytic truths depend upon valid rules of inference. Validity is a conventional matter since it depends upon human agreement (of action). Thus analytic truths

¹⁰The point is made by Anderson and Belnap in *Entailment*, Vol. I (Princeton, 1975), pp. 17-18.

are true by convention. I wish to conclude this section by pre-empting a certain objection. Someone is sure to say that the account I have been offering is not a conventionalist account at all. In fact it is very difficult to say exactly what orthodox conventionalism is. What we have, historically, is a number of positivist writers, such as Ayer, Carnap, Hahn, who all invoke the notion of convention whilst being less than clear about the exact role it plays. Whether or not Wittgenstein's views should be grouped with those of the positivists is, to a certain extent, an academic question. What is important is to see the positivists' views and Wittgenstein's views in the light of their common antithesis: realism. According to a realistic view, analytic truths are true of some domain of abstract objects. That is, to give their truth conditions one has to mention such objects as propositions, meanings (considered as entities) or (in a contemporary form) interpretations, and the relationships which hold between them. When positivist conventionalism and Wittgenstein's views appear in the light of their common foe, their dissimilarities appear much less important than their similarities.

6. QUINE ON CONVENTION

This brings us to the second Quinean dogma: that there are no truths by convention. The notion is criticized by Quine in another classic paper, "Truth by Convention".¹¹

The essence of Quine's objection is that it is not possible to specify which sentences are to be adopted as true by convention without using inferences vouchsafed by those very sentences. In other words, that it is not possible to specify which sentences are true by convention without assuming that those very sentences are true. This follows from the fact that the logical truths are infinite in number. They cannot be simply listed, therefore, but must be considered to be the logical closure of some finite set of axioms.

This is an argument against our being able to define explicitly the set of conventionally true sentences. However, it is not an argument against the form of conventionalism I have been advocating. For a start, on my account the conventional truth of certain sentences is derivative from the conventional validity of certain forms of inference. But, more importantly, the valid forms of inference are not supposed to be explicitly defined in advance but to be implicit in a practice.¹² Quine is however under no illusions about this:

It may be held that we can adopt conventions through behaviour, without first announcing them in words; and that we can return and formulate our conventions verbally afterwards, if we choose, when a full language is at our disposal. It may be held that the verbal

¹¹*Ways of Paradox* (New York, 1966).

¹²It is pointed out by Parsons that this Quinean argument does not work against a Wittgensteinian form of conventionalism, in "Mathematics, Foundations of" (see pp. 199-201), *Encyclopedia of Philosophy*, Vol. 5, ed. P. Edwards.

formulation of conventions is no more a prerequisite of the adoption of the conventions than the writing of a grammar is a prerequisite of speech; that explicit exposition of conventions is merely one of many important uses of a completed language. So conceived, the conventions no longer involve us in vicious regress. Inference from general conventions is no longer demanded initially, but remains to the subsequent sophisticated stage where we frame general statements of the conventions and show how various specific conventional truths, used all along, fit into the general conventions as thus formulated.

It must be conceded that this account accords well with what we actually do. We discourse without first phrasing the conventions; afterwards, in writing such as this, we formulate them to fit our behaviour (*op. cit.*, p. 98).

However, he then continues:

On the other hand it is not clear wherein an adoption of the conventions, antecedently to their formulation, consists; such behaviour is difficult to distinguish from that in which conventions are disregarded. . . . In dropping the attributes of deliberateness and explicitness from the notion of linguistic convention we risk depriving the latter of any explanatory force and reducing it to an idle label.

It is difficult not to suppose that Quine is using the 'I don't understand . . .' gambit of philosophers' gamesmanship here. He has just compared rules of inference to rules of grammar. It is patent that we cannot give an account of the rules of grammar without talking and thereby presupposing (or better, applying) them. Yet in a perfectly clear sense, grammatical rules are conventions embodied in a practice. What makes the correctness of a certain grammatical rule conventional is that correctness is to be understood ultimately in terms of the norms that govern a particular practice, and not in terms of correspondence with some Platonic grammatical form. Similarly it is patent that we cannot give an account of the rules of inference without saying some things and thereby implying others. Here again what makes the validity of certain inference rules conventional is that validity is to be understood ultimately in terms of the norms that govern a practice, and not in terms of correspondence with some set of logical objects. This was the gist of §5, and disposes of Quine's doubt that the notion of convention is an idle label.

7. ANALYTICITY AND MODAL LOGIC

My discussion of Quine is, in fact, complete. Before finishing, however, it is worth looking at the connection between analyticity and modal logic. In particular, if we read 'LA' as 'It is analytically true that A', which modal logic is appropriate for L? The answer is that L is S4-ish. What I shall show is that the account of analyticity I have given provides an informal justification for the modal axioms of S4.

S4 can be formulated with the following components:

- (a) Axioms for the underlying logic and the rule *Modus Ponens* for \rightarrow
- (b) Modal axioms:
 - (i) $LA \rightarrow A$
 - (ii) $L(A \rightarrow B) \rightarrow (LA \rightarrow LB)$
 - (iii) $LA \rightarrow LLA$
- (c) An axiom LA for every axiom A of (a) and (b).

It is more normal to formulate S4 with a rule of necessitation and without axiom scheme (c). But it is easily verified that these two formulations are equivalent, and this formulation is more useful in the present context.

The underlying logic is not relevant to our present concern. Hence we need not bother about (a). Our concern is with the specifically modal principles. If LA is an axiom given by (c) and A is an axiom of (a) then again this concerns the underlying logic and need not concern us. If, on the other hand, A is an axiom from (b), then it is an entailment and so, by (P) of §3, it is analytic. Hence 'LA' is true. It remains to validate (b) (i)-(iii).

- (b) (i) Suppose LA is true, i.e., A is analytic. Then A is entailed by true entailment statements. Since entailment is truth-preserving, A is true.
- (b) (ii) Suppose $L(A \rightarrow B)$ is true. Then A certainly entails B by (b) (i). If, in addition, LA is true, then A is entailed by true entailment statements. Thus by transitivity of entailment, so is B , i.e., LB is true.
- (b) (iii) Let C be the conjunction of all true entailments.¹³ Then clearly A is analytic if and only if C entails A . Thus we might take the following as a definition of 'L':

$$LA =_{df} C \rightarrow A.$$

Now (P) of §3 gives us that

$$(C \rightarrow A) \rightarrow L(C \rightarrow A)$$

and using this definition of 'L' we get

$$LA \rightarrow LLA.$$

That the S4 principle (b) (iii) comes out of this account of analyticity may be thought to be surprising. Indeed, it is often taken to be an objection to conventionalism that it is incompatible with the S4 principle.¹⁴ Indeed, as I have conceded in §3, it may well happen that the rules of inference and thus the analytic truths change. Whatever this shows (if it shows anything at all), it does not show that if something is analytically true it is not analytic that it is analytically true. This form of conventionalism, far from being incompatible with the S4 principle, actually gives it to us. This disposes of another standard objection to conventionalism.

A final, and fairly obvious, question is whether this account of analyticity

¹³ C can be expressed only in an infinitary language, of course. However, this in no way weakens the informal derivation.

¹⁴See, e.g., ch. 5 of C. Lewy, *Meaning and Modality* (Cambridge, 1976).

also validates the S5 principle $\neg LA \rightarrow L\neg LA$. The answer is that there seems to be no validating argument similar to the ones I have given. However, the account seems to give rise to no counter-argument either.

8. CONCLUSION

I have argued that there are analytic truths and that these are true by convention. Quine's network model, rather than dispensing with the notion of analyticity, requires it, and his arguments against conventionalism fail to get a grip on the form I have been advocating. Both dogmas of Quineanism are therefore ill-founded.

University of Western Australia