

THE UNDERDETERMINATION/INDETERMINACY DISTINCTION  
AND THE ANALYTIC/SYNTHETIC DISTINCTION\*

ABSTRACT. Two of W. V. Quine's most familiar doctrines are his endorsement of the distinction between underdetermination and indeterminacy, and his rejection of the distinction between analytic and synthetic truths. The author argues that these two doctrines are incompatible. In terms wholly acceptable to Quine, and based on the underdetermination/indeterminacy distinction, the author draws an exhaustive and exclusive distinction between two kinds of true sentences, and then argues that this corresponds to the traditional analytic/synthetic distinction. In an appendix the author expands on one aspect of the underdetermination/indeterminacy distinction, as construed here, and discusses, in passing, some of Quine's more general views on truth.

Two distinctions which have dominated the work of W.V. Quine are that between underdetermination and indeterminacy and that between analytic and synthetic truths. Associated with these two distinctions are two of his most familiar doctrines. He endorses the former distinction and he rejects the latter. I hope to show that these doctrines are incompatible.<sup>1</sup> In Section 1 I shall say how I understand each of the two distinctions. In Section 2 I shall try to show that Quine's two doctrines are at least in tension with each other. In Section 3 I shall argue for their incompatibility.

1.

1.1.

The distinction between underdetermination and indeterminacy applies where there are two accounts of a certain matter satisfying the following three conditions: firstly, they are incompatible, that is there is a sentence (with a fixed interpretation) which is true according to one account and false according to the other; secondly, they are empirically equivalent, that is each of them is compatible with the same possible evidence; and thirdly, one of them is the truth.<sup>2</sup> The distinction to be drawn is between cases where there is, and cases where there is not, a fact of the matter concerning the third of these conditions, in other words a fact to determine the truth of

one account and the falsity of the other. In cases of both kinds the choice between the two accounts (by which I mean, simply, the matter of which is true and which is false) is underdetermined by the evidence. But if there is a fact of the matter, the choice is *merely underdetermined*. If there is not, it is *indeterminate*.

Quine not only accepts this distinction, he also has clear views about where to draw it. Thus he insists that, if the two accounts in question belong to the natural sciences, the choice between them is merely underdetermined; if they are two accounts of what the predicates in a given language denote, the choice between them is indeterminate.<sup>3</sup> I shall return to these paradigms from time to time as convenient pegs on which to hang different parts of the discussion. But I am less concerned with whether or not there is a fact of this or that particular matter than with the very idea of the distinction.

Both the distinction itself and Quine's views about where to draw it are grounded in his naturalism, that is in his conviction that, to arrive at a theory of what the world is like, we have neither need nor room for a philosophical propædeutic to ordinary scientific endeavour. Thus the notion of evidence itself is understood in terms of what we can learn, through that endeavour, about the stimulation of our senses. Quine's picture is as follows. Even given an inventory of every individual sensory stimulation, past, present and future, there are different stories to be told - in some cases, different in such a way that no possible evidence could decide between them. Some of these stories, but not all of them, differ with respect to the facts. That is, in slightly cruder terms, they differ with respect to what is going on in the world. For example, some differ in how they reckon the broad structure of the universe: they have different geometries and they say correspondingly different things about the shrinking and stretching of bodies as they move about in space.<sup>4</sup> Others differ in their basic conceptual apparatus: they presuppose things of different kinds. Others again differ in respects that have become familiar through philosophical discussions of scepticism: there are stories according to which our senses have been deliberately manipulated to mislead us, undetectably, about what is going on out there.<sup>5</sup> One of these accounts is the truth. The facts are as that account says they are. If someone asks, "But which account is the truth?", we have no recourse but to cite whichever account we have arrived at by ordinary scientific endeavour. Thus Quine's naturalism. However, even given that account, indeed given a complete inventory of the facts, *still* there are certain matters that remain unresolved. Still there are different stories to be told. Some of these stories differ in what they say about certain very abstruse issues in mathematics, issues which are impervious

to anything that is going on in the world.<sup>6</sup> Others differ in what they say about the facts of linguistic behaviour: they do not differ about what the facts are, but they differ in how they represent the facts.<sup>7</sup> It is because we have the linguistic and conceptual wherewithal to deal with issues that go beyond the facts in this way that there is such a thing as indeterminacy, as opposed to mere underdetermination by the evidence.

This picture is a physicalist picture. The facts are physical facts, facts about the distribution of whatever fundamental states are recognized by physics. For something to be going on in the world just is for those states to be undergoing some kind of redistribution. (Not that, where the choice between two accounts is merely underdetermined, the true account need make explicit reference to these states, nor yet that there need be a paraphrase of it that does so. To expect that would be to harbour a radical kind of reductionism. The point is simply this. Only the true account is compatible with the actual distribution of physical states.) Let us follow Quine and define “physical equivalence” as compatibility with all the same distributions of fundamental physical states.<sup>8</sup> Then what Quine is claiming, in these terms, is that physical equivalence cuts finer than empirical equivalence; and that identity cuts finer still.<sup>9</sup> This is what enables him to draw his distinction. The first of these relative assessments allows for mere underdetermination, the second for indeterminacy.

Someone may protest, “No; the physicalism is independent. The original picture was quite neutral concerning what the facts are like.” But really, the physicalism is nothing over and above the original naturalism, or scientism as it might also be called. This is because physics is here being understood *à la* Quine, as that science whose business is to identify the fundamental states whose redistribution constitutes anything’s happening.<sup>10</sup> Nothing is being added to the picture when it is said that all the facts are physical facts. Nor is anything being excluded - not even the existence of Cartesian souls. It is just that if, included in the various happenings in the world, were indeed the antics and vicissitudes of Cartesian souls, then it would behove physics to recognize and to deal with suitably immaterial states.<sup>11</sup>

Now, given the existence of underdetermination, the following epithet makes perfectly good sense: “empirically warranted, but false”. (“Warranted” here just means “acceptable”: “empirically warranted” means “compatible with all the evidence”).<sup>12</sup> Quine has been troubled by this. He is reluctant to discredit any account that is empirically warranted. So he considers an expedient which he attributes to Donald Davidson. Where an account of things that is incompatible with the truth is empirically warranted, the incompatibility is resolved by reconstruing certain key terms as pairs of distinct homonyms. Reconstrued, the account can be regarded

as true.<sup>13</sup> This is all very well. The fact remains that, *unreconstructed*, it is false. Anything incompatible with the truth is false, howsoever warranted.

Just as the existence of underdetermination entails that there can be accounts that are empirically warranted but false, so too the existence of indeterminacy - as I have presented it - entails that there can be accounts that are physically warranted, but false. ("Physically warranted" means "compatible with all the facts".) This is much more radical. Indeed my exegesis will strike many as absurd - as will the doctrine itself. To discuss this now would be too great a diversion. I defer discussion to the Appendix.

## 1.2.

Now to the analytic/synthetic distinction.<sup>14</sup> I shall base my comments on "Two Dogmas of Empiricism", the *locus classicus*.<sup>15</sup> There has been much discussion about how far, if at all, Quine has modified his views since then.<sup>16</sup> But his early account is still an ideal point of departure; and I think my main contentions apply even given the modifications, if such they be.

That Quine is hostile to the analytic/synthetic distinction is well known. But does he deny its coherence? Michael Dummett, commenting on "Two Dogmas of Empiricism", insists not. Dummett writes:

In the last third of the article, Quine employs notions in terms of which it is quite straightforward to define "analytic" and "synthetic": in these terms, an analytic sentence is one such that no recalcitrant experience would lead us to withdraw our assignment to it of the value true, while a synthetic one is one such that any adequate revision prompted by certain recalcitrant experiences would involve our withdrawing an assignment to it of the value true. The position arrived at at the conclusion of the article is not in the least that there would be anything incorrect about such a characterisation of the notions of an analytic and a synthetic sentence, but simply, that these notions have no application: as thus defined, there are no analytic sentences, and there are no synthetic ones.<sup>17</sup>

Yes and no.<sup>18</sup> Obviously Dummett, in this passage, is not construing sentences purely phonemically. If he were, there would need to be some explicit caveat to discount change of meaning. Otherwise it would be entirely trivial that "analytic" and "synthetic", thus defined, had no application. Dummett must therefore be construing sentences as having a semantic component - as being identified, in part, by their meaning. Now, consider a construal that would be acceptable to Quine. (There must *be* such a construal. Quine has persistently railed against uncritical talk of meaning, but he must be prepared to accept a notion of sentence-meaning sufficient to support the notions of empirical and physical equivalence, and indeed those of truth and falsity.) On such a construal, Dummett is quite right: Quine's position is that there are no analytic sentences and no synthetic ones, as defined. But this is not the end of the matter. For, on such a construal, the

proposed definitions are not faithful to the traditional distinction. The traditional distinction presupposes a much more robust conception of meaning. Anyone who accepts the traditional distinction will admit that, given an analytic sentence, a Quinean story can be told in which this sentence is rejected in the face of recalcitrant experience: all that has happened, such a traditionalist will say, is that the sentence has undergone a change of meaning. Very well, consider a construal of sentences which, by incorporating this more robust conception of meaning, renders the proposed definitions acceptable to the traditionalist. *Now* Quine's position is that the definitions are incoherent.

The heart of the dispute between Quine and the traditionalist is in fact whether this more robust conception of meaning can be sustained.<sup>19</sup> Quine, in rejecting the analytic/synthetic distinction, is ultimately rejecting this conception. His own rival conception is holistic. "The unit of empirical significance," he writes, "is the whole of science."<sup>20</sup> That is, not individual sentences, but suitably inclusive sets of sentences are what are compatible or incompatible with the evidence.<sup>21</sup> Moreover, given any such set, and given any member of the set, it is always possible to remove that member and, through suitable further deletions and additions, to preserve empirical content. As it were, the organism can survive the loss of any one organ. There is no such thing as "the" set of sentences which must be true for any given evidence to hold, nor, conversely, subject to a qualification that I shall mention in Section 2, as "the" evidence which must hold for any given sentence to be true. While the truth of an individual sentence depends partly on its meaning and partly on the evidence, there is no way of separating out these two components.<sup>22</sup> Much of this, that is much of what has been said here about the evidence, applies equally to the facts. For instance, it is equally true that what are compatible or incompatible with the facts are not individual sentences, but suitably inclusive sets of sentences. It is also true that, while the truth of an individual sentence depends partly on its meaning and partly on the facts, there is no way of separating out the two components. For the traditionalist, on the other hand, further resolution is possible. Associated with each sentence are those facts which would render it true and those facts which would render it false. This allows for the limiting case of a sentence which no facts would render false. Such a sentence is analytic.<sup>23</sup> Any other true sentence is synthetic. As long as the analytic/synthetic distinction is understood in these terms, then Quine has to be seen as challenging its very coherence. There is a related distinction of degree which he accepts. This is a matter, roughly, of how much trouble it would be to change one's mind about whether a given sentence was

true. But Quine does not think it is possible to make sense of the clear-cut distinction which the traditionalist claims to have drawn.

### 1.3.

I shall argue that, if one accepts the underdetermination/indeterminacy distinction, then one must accept the analytic/synthetic distinction. I shall remain non-committal about what to make of this. All sorts of options are available, beyond leaving Quine to stew in his own juice. These options fall roughly into three categories. Those in the first category involve a *modus ponens*: to accept the former distinction, and thereby to accept the latter. Those in the second category involve a *modus tollens*: to reject the latter distinction, and thereby to reject the former. Those in the third category involve a *reductio ad absurdum*: to acknowledge that there are Quinean reasons for accepting the former distinction and rejecting the latter, which is precisely what Quine wants to do, but thereby to abandon some other doctrine of Quine's, perhaps, but not necessarily, one of the two doctrines under consideration.

I shall say no more about options in the first category. But it is worth commenting briefly on options in the other two categories. Let us turn first to the "*modus tollens*" options, which involve rejecting the underdetermination/indeterminacy distinction. These options themselves fall roughly into three sub-categories, corresponding to three different ways of rejecting the distinction. One can: maintain that in all the relevant cases there is a suitable fact of the matter; maintain that in none of the relevant cases is there a suitable fact of the matter; or give up talking in these terms. The options in the first of these sub-categories, insofar as they still presuppose a broadly Quinean framework, require physics to underpin any empirically underdetermined truth. Let us grant that truth about denotation is a case in point. It is not required that there be a definition of "denotes" in fundamental physical terms. (That would be the reductionist demand renounced earlier.) What is required is that, given incompatible, empirically equivalent accounts of what the predicates in a given language denote, one true and one false, there should be recognizably physical facts which make the difference. Someone may say, in opposition to this, "But it is part of our very understanding of denotation that there are no such facts. The only candidates are facts about behaviour and dispositions to behaviour. But these still leave the matter undetermined." We can ask such a person, "What about other familiar physical facts, for example neurophysiological facts or facts about causal relations between uses of predicates and what they denote?" If they balk at this, we can ask, "What about *unfamiliar* physical facts, as mooted above in connection with Cartesian souls?" If

they still balk, we can ask, “How sure are you that there is any truth about denotation, in other words that the word ‘denotes’ is not just incoherent?” If they are completely sure – my point is really that, by now, this is a large “if” – then certainly they have reason not to embrace this kind of option.<sup>24</sup> According to options in the second sub-category, factuality stops at the evidence. So if truth in physics is empirically underdetermined, then it, no less than any other empirically underdetermined truth, is indeterminate. Of course, options in these two sub-categories may turn out to be notational variants on one another. For that reason alone, somebody wanting to endorse the *modus tollens* may think it best to adopt an option in the third sub-category, dropping all talk of factuality: beyond the evidence, there is just whatever it takes to smooth over the rough edges, fill in the holes, round out the system – whatever is the most appropriate metaphor. There is an option in the third sub-category which is of interest because there is some evidence that Quine himself has been tempted by it. This is to deny that there is a clear-cut distinction between mere underdetermination and indeterminacy, but to concede enough of a distinction of degree to yield the *ersatz* analytic/synthetic distinction of degree which Quine has always accepted.<sup>25</sup> Someone might say that this is not an option which Quine has been “tempted by”, it is what he has always thought, in other words that I am wrong to attribute to him a commitment to anything sharper. But think about it. Is Quine really going to concede that there is no difference, in clarity and distinctness, between his own belief in the indeterminacy of translation and Frege’s belief in the analyticity of arithmetic, or Kant’s in its syntheticity?

Let us turn next to the third main category of options, those which involve a *reductio ad absurdum*. Dummett has argued that the thesis of the indeterminacy of translation, which, in the form in which Quine espouses it, presupposes the underdetermination/indeterminacy distinction, entails that there is no analytic/synthetic distinction.<sup>26</sup> So one option in the third category would be to combine Dummett’s argument with my argument to undermine the thesis of the indeterminacy of translation. Quite generally, any doctrine of Quine’s which requires both acceptance of the underdetermination/indeterminacy distinction and rejection of the analytic/synthetic distinction<sup>27</sup> can be undermined in this way.

## 2.

This section is intended as a kind of warm-up. I shall try to lend support to my view of the connection between the two distinctions. Richard Rorty has said that the notion of “being about the world”, which is more or less

equivalent to that of factuality, is “the notion . . . which the positivists used to explicate . . . ‘analytic’ ”.<sup>28</sup> This is the sort of thing I have in mind. But complications abound. One complication that needs to be emphasized straight away is this. The kind of thing about which there may be no fact of the matter, strictly speaking, is not this or that phenomenon, or the truth of this or that sentence, or even the truth of this or that account. It is rather the *choice* between one account and another. It is sometimes said that Quine does not believe that there are any facts of the matter concerning denotation.<sup>29</sup> This is wrong. Suppose that a particular predicate denotes rabbits. Then there is a fact of the matter concerning whether this predicate denotes rabbits. Had the facts been different in certain ways, the predicate would not have denoted rabbits. Indeed had the facts been different in certain ways, there would have been no predicate (for example, if there had been no language-users). The thing concerning which there is no fact of the matter, on Quine’s view, is whether this predicate, and the various other predicates in the language, denote what they denote *as opposed to* what they denote according to some empirically equivalent alternative account.<sup>30</sup> It follows that we had better not try to “extricate” the notion of factuality from that of indeterminacy and then try to foist upon Quine a distinction between those accounts which are, and those accounts which are not, “factual”, or “about the world”. Still less had we better do this at the level of individual sentences. That would be to beg all sorts of questions against Quine’s holism. If the underdetermination/indeterminacy distinction does yield the analytic/synthetic distinction, as this abortive attempt would have shown, then, even so, it does not do so as quickly as that.

It is clear, all the same, that no sharp semantic distinction is going to sit well with Quine’s holistic rejection of the analytic/synthetic distinction. Once it is conceded that no sentence, or virtually no sentence<sup>31</sup>, has its own separable empirical content, nor its own separable physical content, but rather that sentences can work together in all sorts of syncretic ways to say how things are, then there is bound to be something suspicious about recognizing some issues, but not all of them, as somehow impervious to physics. By what right do we say, given a choice between two rival accounts of a certain matter, that it is not the business of physicists to make sense of any resolution? After all, we might come to accept the truth of a sentence that explicitly casts the issue in physical terms, that is in terms of whatever fundamental states are recognized by physics.

Here it is important to remember that Quine’s physicalism is not reductionist (see above, Section 1.1). The distinction between mere underdetermination and indeterminacy is certainly not aligned to any distinction between what is, and what is not, already cast in physical terms. Nor,



importantly, does our acknowledging that there is a fact of some matter require prior insight into how the matter is related to physics. On the contrary, it may be our acknowledging that there is a fact of this matter which leads to our acknowledging that there is such a relation - that there is work here for physicists to do.<sup>32</sup> But how do we come by the former knowledge? How can we know that the choice between two biological theories is merely underdetermined, whereas the choice between two manuals of translation is indeterminate? I am not saying that there are no answers to these questions. I am saying that there are no answers which do not invite restoration of the analytic/synthetic distinction.

Consider a case of indeterminacy. Of two incompatible and physically equivalent accounts one is true. How do we tell which? Presumably by appeal to such considerations as those of elegance, simplicity and utility. These considerations also help us in choices which are merely underdetermined. That is partly constitutive of how we view the facts. In a case of indeterminacy, however, the facts are irrelevant. It is as if our exercise of these considerations itself determines the truth.<sup>33</sup> In choosing one of the accounts as the truth, we are smoothing over the rough edges in whatever way we think fit, and our choice has nothing to answer to. But then are we not involved in a piece of linguistic legislation which is of precisely the kind that traditionalists would say sustains analyticity? Are we not creating pockets of truth which, unlike truth that depends partly on meaning and partly on the facts, depends solely on meaning? Here is a tell-tale sign. If, having made our choice, we come across others who have made the opposite choice, we are debarred from saying that they are wrong. For there is nothing (there is no fact) for them to be wrong about. We have to say instead that they have conferred different meanings on some of the terms involved. And this is just the kind of thing that a traditionalist would say when talking about an apparent denial of some analyticity (see above, Section 1.2).<sup>34</sup>

But is there any one sentence in this case which Quine has to treat as analytic? I think there is. More precisely, I think there is a sentence *S* which satisfies the following condition. If we grant Quine his holistic conception of meaning and a correspondingly pragmatic conception of what is involved in telling whether a given sentence is true or false, then, by his own reckoning, *S* cannot be rejected as false without undergoing a change of meaning, on what must be a more robust conception of meaning. (Hence Quine is subject to a kind of *reductio ad absurdum*.) Call the two alternative accounts in the envisaged case **I**<sub>1</sub> and **I**<sub>2</sub>. These are to be thought of as individual sentences, long and complex enough to have their own empirical, and indeed physical, content and thus to be candidates for both

empirical and physical equivalence. (This is the qualification to which I referred in Section 1.2. I do not know whether Quine is entitled to admit such sentences. But he does.<sup>35</sup> This device will incidentally play no rôle in my main argument, in the next section.) Let  $I_1$  be the truth. Then the sentence  $S$  in question – the sentence which I think Quine has to regard as analytic – is  $I_2 \rightarrow I_1$ .<sup>36</sup>

To reject this sentence as false would be to reject  $I_1$  in favour of  $I_2$ . And indeed, given Quine's holistic conception of meaning, we can imagine circumstances in which that is precisely what we would do. These would not be circumstances in which we encountered evidence incompatible with  $I_1$ . Such evidence would be incompatible with  $I_2$  as well, given that the two accounts are empirically equivalent. Rather they would be circumstances in which we felt, in the light of new evidence, that  $I_2$  was after all the more elegant and the more serviceable alternative (say). Now a similar thing could happen in a case of mere underdetermination. Consider such a case, and call the two alternative accounts  $U_1$  and  $U_2$ . Let  $U_1$  be the truth. Then, as before, we can imagine circumstances in which we would reject  $U_1$  in favour of  $U_2$ . For example, suppose that according to  $U_1$ , the universe does not have a centre, whereas according to  $U_2$  it does (the accounts have compensatingly different geometries).<sup>37</sup> Then we can imagine a steady accumulation of evidence which conferred privileged status on one particular point in the universe and convinced us that  $U_2$  was, as in the indeterminacy case, the more elegant and the more serviceable alternative. Indeed if  $I_1$  and  $I_2$  are two accounts of what the predicates in a given language denote, and if, according to  $I_2$ , there is a predicate in the language which denotes whatever is at the centre of the universe, but not according to  $I_1$ , then we could well be imagining the same evidence in both cases.<sup>38</sup> But the point is this. There is, for Quine, a crucial difference between the two cases. Going over from  $I_1$  to  $I_2$  is unlike going over from  $U_1$  to  $U_2$ , or equivalently rejecting  $I_2 \rightarrow I_1$  is unlike rejecting  $U_2 \rightarrow U_1$ , in that it cannot be regarded as a change of view. There is nothing for it to be a change of view about. So it has to be regarded as a change of meaning.<sup>39</sup>

It has to be regarded as a change of meaning because, even for Quine, there are two things that make a true sentence true: meaning and fact. To be sure, Quine has familiar reservations about spelling out what this comes to. These reservations are a direct product of his holistic conception of meaning. In particular, as I emphasized in Section 1.2, he denies that there is any way of separating out the contribution that meaning and fact each make to the truth of a sentence. Relatedly, he denies that the meaning of a true sentence is some clearly delineated thing, and that the fact of the matter is some other clearly delineated thing to which it corresponds. But so long

as the idea that meaning and fact conspire to make true sentences true is freed of these misconceptions, Quine has no quarrel with it.<sup>40</sup> Indeed the idea has the status, as Quine himself suggests, of a platitude. But granted the platitude, and granted that going over from  $I_1$  to  $I_2$ , or equivalently rejecting  $I_2 \rightarrow I_1$ , cannot be regarded as a change of view about the facts, then it must be regarded as a change of meaning. The platitude leaves no alternative.

However, although this is something that Quine himself is committed to, the conception of meaning in question cannot be the original Quinean conception. It must be something more robust. For on the original Quinean conception, the move from  $I_1$  to  $I_2$  would certainly be in accord with meaning (that is, it would not involve any change of meaning). Besides, nothing in the original Quinean conception distinguishes the two cases. Precisely the same pragmatic considerations would guide the move from  $I_1$  to  $I_2$  as would guide the move from  $U_1$  to  $U_2$ . Quine must therefore resile. He is driven to regard  $I_2 \rightarrow I_1$  in just the way in which a traditionalist would regard an analyticity.

However,  $I_2 \rightarrow I_1$  is an isolated example, and a very artificial one at that. I am still short of establishing that the underdetermination/ indeterminacy distinction yields the analytic/synthetic distinction as a general, principled distinction. There is nothing yet to show that, given Quine's rejection of the latter, he has as much reason to reject the former as he does, say, the distinction between philosophy and science, or Carnap's distinction between internal and external questions.<sup>41</sup> That is what I shall now argue.

### 3.

My strategy will be to try to generalize from key features of the example just considered. This will again mean trying to subject Quine to a kind of *reductio ad absurdum*. As before, the starting point will be to grant Quine his holistic conception of meaning, together with all that it entails, plus the underdetermination/indeterminacy distinction, together with all that it entails. Then, in terms wholly acceptable to Quine, an exhaustive and exclusive distinction will be drawn between two kinds of true sentences. This distinction, I shall argue, corresponds to the traditional analytic/synthetic distinction with its attendant and more robust conception of meaning.

The idea that I need to capture is that there are, among true sentences, those whose rejection, with due account taken of the rejection of other sentences, can never just be attributed to a difference of view about the facts. It must be attributed, at least in part, to a difference of meaning, on what must be a more robust conception of meaning. These are the analytic

sentences. Furthermore, I need to capture this idea using purely Quinean resources, and in completely general terms, not just with respect to a cluster of specially constructed examples.

I shall begin with some minor technicalities. I have been talking in this essay about “accounts”. But what exactly are these? Sets of sentences? No; not if an account is something according to which a sentence can be false. For it does not in general make sense to say that a given sentence is false “according to” a given set of sentences (all presumed true). This is because, even if the given set contains the negation of the given sentence, that counts for nothing when, in suitably holistic vein, we are envisaging revisions to our logic whereby both a sentence and its negation may be true. An account must be more than just a set of sentences then. It is, in fact, more useful here to introduce a somewhat broader concept. Let us define an *evaluation* as an assignment, to every sentence in the language, of a truth value, or, more formally, as a function from the set of sentences in the language into  $\{\top, \perp\}$ . I stipulate *all* sentences to ensure that no evaluation lacks content through treating of too few sentences; also, relatedly, to ensure that it always makes sense to describe two evaluations as empirically or physically equivalent. But I do not include any closure requirements. Nor do I include any requirements of consistency. In both cases this is for the reason just alluded to: we are accepting the holistic principle that even our logic may be revised. Because of this lack of restrictions, some evaluations, indeed most evaluations, though extensive enough to have content, nevertheless do not. Or, as I shall rather say, they have “null” content. They are incompatible with all possible evidence. It is a trivial feature of evaluations with null content that they are all empirically and physically equivalent.<sup>42</sup>

Let me emphasize a point that is related to something I said in Section 1.1. All the sentences concerned here are sentences in *our* language, *unreconstructed*. There is no question of having to decide whether a term which we use is being used by others in some unfamiliar way. No doubt, to build on an example of Quine’s, if ever we come across people who accept exactly the same sentences as we do, but with the words “molecule” and “electron” switched, we shall say that their use of these two words is the reverse of ours rather than that they are mistaken.<sup>43</sup> Even so, construed as we would construe it, their account of the world contains numerous falsehoods, by our reckoning. In the context in which Quine introduces this example, he argues that this false account of the world is nevertheless empirically equivalent to ours. I suspect that this indicates a significant concession to atomism. On his original holistic conception, I suspect, the account comes out as having null content. But I do not need to argue for

that now. For now, my point is simply that we are to consider such accounts as they are, not as we might charitably suppose them to be.<sup>44</sup>

Remaining faithful to Quine's holism, and exploiting the notion of the physical that goes with the underdetermination/indeterminacy distinction, we might now try the following definition of analyticity: a sentence is analytic if it is true, and if any empirically warranted evaluation in which it is false is physically equivalent to the truth. (Now that the notion of an evaluation is to hand, "the truth" can be thought of as simply that evaluation which assigns truth to all and only true sentences.) Equivalently, and somewhat more formally:

- (D1)  $S$  is analytic = Def. (i)  $S$  is true, and (ii) any empirically warranted evaluation in which  $S$  is false is physically warranted.

The idea behind this definition would be as follows. Clause (ii) says that, so long as an arbitrary evaluation  $v$  in which  $S$  is false is empirically warranted, then it cannot misrepresent the facts. In other words, given that  $S$  is in fact true, the choice between  $v$  and the truth must be indeterminate. In other words again, rejecting the truth in favour of  $v$  cannot be regarded as a change of view. It must be regarded as a change of meaning, specifically a change of meaning in  $S$ . This seems to be a suitable generalization of what we found with the artefact considered in Section 2.

In fact, however, Quine's holism entails that no sentence fits the bill. Take any true sentence  $S$ . Then, given the holism (and given the underdetermination of physics), there are bound to be some empirically warranted evaluations in which  $S$  is false and which, because they differ from the truth in various other ways, are factually incorrect, that is to say not physically warranted. Clause (ii) is far too strong. How then should it be weakened? One intuitively attractive suggestion is to restrict attention to those evaluations which differ from the truth *only* with respect to the truth value of  $S$ . Only? Well, not strictly of course. They must also differ with respect to the truth values of all the other sentences that have to be re-evaluated in order to preserve empirical content. But therein lies the hitch. The holism means that there are no such things as "the" other sentences that have to be re-evaluated. All sorts of empirically content-preserving changes can accommodate the falsity of  $S$ . – But perhaps one of these changes can be singled out as minimally disruptive? – There is no reason to think so. There is no reason even to think that there are uniquely reasonable criteria of minimal disruption. However, suppose there are. Even then, there is no reason to think that any interesting distinction turns on whether or not the resultant evaluation is physically warranted. Perhaps it never is. Perhaps it always is.

Reflection on this last possibility gives the lie to another natural suggestion for weakening clause (ii): to relax the universal quantification to an existential quantification. That gives:

- (D2)  $S$  is analytic = Def. (i)  $S$  is true, and (ii) some empirically warranted evaluation in which  $S$  is false is physically warranted.

(Actually, since physical warranty entails empirical warranty, the phrase “empirically warranted” in the new clause (ii) can be deleted.) For a true sentence to satisfy this definition is for it to be *possible* to reject the sentence without a change of view, that is for there to be *a* way of rejecting the sentence which must willy-nilly be regarded as a change of meaning. The problem now is that the new clause (ii) is liable to be too weak. Granted Quine’s holism, *every* true sentence is liable to fit the bill: every true sentence is liable to be rejectable without a change of view, provided that enough compensatory re-assignments are made elsewhere to cast the change as one which must, willy-nilly, be regarded as a change of meaning. I say “liable to” because there is nothing in the underdetermination/indeterminacy distinction itself to prevent Quine from saying that certain privileged truths cannot be rejected without a change of view. He may, as far as the underdetermination/indeterminacy distinction goes, say this about any truth that does not involve such words as “denotes”, or other similarly troublesome vocabulary. He may indeed say it about any truth that is not one of the small cluster of artificial cases:  $\mathbf{I}_2 \rightarrow \mathbf{I}_1$  and its ilk. The problem with this is that it is tantamount to saying that the truths in question are synthetic. It sets them apart from the artefacts (and perhaps from other sentences too) as lacking that which makes the latter analytic. And even if Quine is committed to nothing more than the relatively innocuous claim that all but a tiny selection of grotesquely artificial truths are synthetic, that is bad enough for him. Quine’s hostility has always been to the analytic/synthetic distinction itself, not to any particular view about where it lies. (This is why he has always disowned the view that *every* true sentence is synthetic.<sup>45</sup>) So I shall take for granted that the new clause (ii) *is* too weak, and that, granted Quine’s holism, every true sentence does indeed satisfy it.

Incidentally, the objection to (D1) and (D2) is not just that they are indiscriminate. The objection is that they are indiscriminate in a way that violates their own rationale. True, we know that (D1) must be wrong because of the artefacts: we know that there are *some* sentences which Quine is committed to regarding as analytic. But that does not indicate *what* is wrong with (D1). What is wrong with (D1) is that, although it specifies a sufficient condition for  $S$ ’s being analytic, this condition cannot

possibly be necessary given how much scope there is, even without flouting any evidence, for rejecting  $S$  at the same time as misrepresenting the facts. Similarly, what is wrong with (D2) is that it specifies a condition that cannot possibly be sufficient given how much scope there is for rejecting  $S$  at the same time as *correctly* representing the facts.

What we are witnessing here is a basic consequence of Quine's holism: namely, how large the range of empirically warranted evaluations is, and how much, therefore, is demanded by universal quantification over the range, how little by existential quantification. This prompts the following thought. Perhaps there is a more suitable definition which involves mixed quantification, a definition in which clause (ii) takes the following form: "for any empirically warranted evaluation  $v$  there is an empirically warranted evaluation  $v^*$  such that  $\neg S - v \text{ --- } v^*$ ". I think this suggestion is right. In fact, I think that mixed quantification of this kind is precisely what is required to capture the idea that the rejection of an analyticity *always* involves *some* change of meaning. (I shall have more to say about this below.) However, I shall deviate from the suggestion in one respect. I shall propose a definition which involves quantification over *all* evaluations, not just empirically warranted evaluations. This is because I believe that what would make the definition work for evaluations that are empirically warranted will make it work also for evaluations with any other empirical content. Here is the definition:

(D3a)  $S$  is analytic = Def. (i)  $S$  is true, and (ii) any evaluation in which  $S$  is false is physically equivalent to one in which  $S$  is true.

And of course:

(D3b)  $S$  is synthetic = Def. (i)  $S$  is true, and (ii)  $S$  is not analytic.

There are two things to note about this definition straight away. First, the mixed quantification ensures that it will never be possible, simply by adducing a single evaluation, either to prove or to disprove that a given true sentence is analytic by this definition. The only way to secure such a proof, or such a disproof, would be by reflection on the contribution that the sentence makes to the content of any arbitrary evaluation. It is as if the definition forces us, in spite of any holism, to think about sentences in a neo-atomistic way. The second thing to note is the rôle of physical equivalence in the definition, or at least one aspect of that rôle. Consider: if the expression "is physically equivalent to" in (D3a) were replaced by "is empirically equivalent to", then, trivially on a holistic view, every true sentence would satisfy the specified condition for analyticity. If it

were replaced by “is identical to”, then, even more trivially, none would. So it is only if physical equivalence lies between empirical equivalence and identity that the definition stands a chance of effecting an interesting distinction. But, as I observed in Section 1.1, to say that physical equivalence lies between empirical equivalence and identity is, in effect, to affirm the underdetermination/indeterminacy distinction. Hence, if I am right to think that, granted such an affirmation, the distinction which the definition effects is the traditional analytic/synthetic distinction, then we are shown very graphically how the one distinction yields the other.

But is not (D3a) vulnerable to pretty much the same objection as (D2)? Take any true sentence  $S$  and any evaluation  $v$  in which  $S$  is false. If  $v$  has null content, then it can trivially be transformed into an evaluation in which  $S$  is true, without change of physical content - without change of view. If, on the other hand,  $v$  does not have null content, then are we not still guaranteed that a view-preserving re-assignment to  $S$  is possible, provided that enough compensatory re-assignments are made elsewhere to cast the change as one which must, willy-nilly, be regarded as a change of meaning?

I think not. The objection to (D2) was based on the idea that any true sentence, be it a highly general scientific formula, or a detailed account of various local goings-on, or something else again, could be rejected in holistic vein as a result of what a traditionalist would regard as a change of meaning. But that simple idea cannot be adapted without further ado to the situation under consideration here – where  $v$ , the evaluation in which  $S$  is false, is already at one remove from the truth. Let us suppose, to allow the objection its most favourable case, that  $v$  is empirically warranted. Even so, the physical content of  $v$ , underdetermined as it is by its empirical content, is liable to differ radically from the physical content of the truth:  $v$  might tell a story in which the very structure and constitution of the universe are of some fundamentally alien kind, or in which the most bizarre sceptical possibilities are realized, so that there is no longer even any locus for those various local goings-on. Given that all the sentences being evaluated are sentences in *our* language, as *we* understand them, there is no reason whatsoever to suppose that the very same physical content can attach to an evaluation in which  $S$  is restored to its original status as true. It may well be that, by the time other compensatory re-assignments have been made in order to re-establish even that much overlap with the truth, some of  $v$ 's eccentric physical content will automatically have been lost.

This highlights the basic idea behind (D3a). In applying the definition to any true sentence, we confront the following question: what can *guarantee* that the rejection of this sentence is never vital to telling some particular



story, a story according to which the facts are thus rather than so? The only answer, as far as I can see, is: the sentence's being true in a way that is impervious to the facts, however they may be; in other words, the sentence's being true by virtue of meaning, on the traditionalist's conception of meaning. Any holistically inspired rejection of the sentence has then to be seen as involving a change of meaning. And whatever story is told by means of the rejection, there is a meaning-preserving way of telling the same story which allows the sentence to remain true.

An example may help to clarify this. Consider a sentence that would traditionally be regarded as analytic, say:

- (1) All bachelors are unmarried.

And consider a sentence that would traditionally be regarded as synthetic, say:

- (2) All bachelors are less than ten feet tall.

Suppose that (D3a) and (D3b) are in line with tradition here. In other words, suppose that, according to (D3a), (1) is analytic while, according to (D3b), (2) is synthetic. How so?

There are all sorts of evaluations in which each of them is false, some of which have quite different physical content from the truth. For example, in the case of (1), there is an evaluation  $v_1$  in which each of the following sentences is true:

Among men, the correlation between being misogynistic and being unmarried is very high

Among men, all and only bachelors are misogynists

A tiny number of married men are misogynists

and in which (1) is accordingly false. In the case of (2), there is an evaluation  $v_2$  according to which the universe has some bizarre geometry, empirically indistinguishable from our own, whereby things rapidly increase in size as they move away from the centre of the earth, and in which (2) is false because of those bachelors currently in aeroplanes.

What makes (1) analytic, according to (D3a), is that its rejection is *incidental* to the physical content of any evaluation in which it is false, and thus, for example, to the physical content of  $v_1$ : exactly the same content attaches to at least one evaluation,  $v_1^*$  say, in which (1) is true. Intuitively, the only way to explain this is by appeal to the fact that the

rejection of (1) involves a change of meaning. Any story told by means of that rejection could just as well have been told without the change of meaning. Thus it may be that, in  $v_1^*$ , the sentence “Among men, all and only bachelors are misogynists” is false. The difference between  $v_1$  and  $v_1^*$  is basically a matter of whether the application of “bachelor” is tied to being unmarried or to being misogynistic. There is no *fact of the matter* to determine which of them is the truth. It does not devolve on physicists to make sense of the issue’s being resolved one way rather than the other. (1) is analytic, according to (D3a), because *any* rejection of it generates just such an indeterminacy.

By contrast, what makes (2) synthetic, according to (D3b), is that its rejection is *vital* to the physical content of at least one evaluation in which (2) is false. Let us suppose that  $v_2$  is a case in point. Intuitively, this is because the story  $v_2$  tells is so bizarre that there is no way of telling that story without rejecting (2). In order for an evaluation  $v_2^*$  to make (2) come out true, *and* to have the same physical content as  $v_2$ , it must differ in so many other compensatory ways from  $v_2$  that it cannot, after all, have the same physical content as  $v_2$ . That is, in order to ensure that all bachelors are less than ten feet tall,  $v_2^*$  must stay sufficiently close to the truth to prevent itself from spinning the same wild geometrical yarn as  $v_2$ . And the only way to explain this is by appeal to the fact that  $v_2$  does not involve any change of meaning in (2): (2) has its own factual content, repudiation of which cannot always be masked by suitable compensatory meaning changes that enable it still to come out true.

(D3a), I suggest, is a suitable generalization of what we found with the sentence  $\mathbf{I}_2 \rightarrow \mathbf{I}_1$  constructed in Section 2. This sentence, to recapitulate, was so constructed that its rejection could not be regarded as a change of view. The choice between  $\mathbf{I}_1$  and  $\mathbf{I}_2$ , on which any rejection of  $\mathbf{I}_2 \rightarrow \mathbf{I}_1$  would have to turn, was indeterminate. That is, concerning whether  $\mathbf{I}_1$  was true as opposed to  $\mathbf{I}_2$ , there was no fact of the matter. The assignment of falsehood to  $\mathbf{I}_2 \rightarrow \mathbf{I}_1$ , therefore, would never be crucial to the physical content of an evaluation. If, in a given evaluation,  $\mathbf{I}_2 \rightarrow \mathbf{I}_1$  were false, there would always be a physically equivalent evaluation in which it was true. It is this feature which has now been culled from the example and identified as the distinguishing feature, among truths, of analyticities.

(D1) and (D2) already involved generalization from features of the Section 2 example. But they failed because they inappropriately fastened on one peculiarity of the example, or rather, on one peculiarity of one particular extension of the example, namely that in which the subsequent rejection of  $\mathbf{I}_2 \rightarrow \mathbf{I}_1$  involved *only* change of meaning.<sup>46</sup> (D1) picked out truths whose rejection *always* involved only change of meaning. This

proved to be too demanding: any sentence could be rejected as a result of a change of meaning *and* of view. (D2) picked out sentences whose rejection *sometimes* involved only change of meaning. This proved to be not demanding enough: any sentence could be rejected as a result of a change of meaning alone. What was required, as I indicated, was a definition which picked out truths whose rejection *always* involved *some* change of meaning. But to capture the force of the “some”, in holistic terms, it was necessary to look to relations between evaluations - in particular, the relation of physical equivalence which holds between evaluations whose differences are, precisely, differences of meaning. Hence (D3a).

Of course, the conception of meaning involved here is the traditionalist’s conception of meaning which emerges from the definitions, not the holistic conception of meaning which is fed into them. It is the notion of the factual implicit in the underdetermination/indeterminacy distinction which combines with the latter to produce the former. The facts are thought of as going beyond the evidence, but not far enough to fix an answer to every question that we can raise. So it becomes a real issue, what contribution the facts make to determining the truth, or certain parts of the truth; and, holism notwithstanding, we can sometimes separate the contribution made by the facts from the contribution made by meaning. This must, however, be a more robust conception of meaning than is involved merely in giving the truth its empirical warrant. That is, it must be a more robust conception of meaning than Quine’s holistic conception. It is this that is captured in the proposed definition of analyticity.

“But how exactly,” someone will ask, “are we supposed to *apply* the definition? Consider a problematic case such as Quine’s ‘Everything green is extended’.<sup>47</sup> Is every evaluation in which this is false physically equivalent to one in which it is true?”

I have no idea. Nor, for that matter, do I have any idea whether “All bachelors are unmarried” satisfies this condition, or whether “All bachelors are less than ten feet tall” fails to. I earlier proposed these things, in order to see how the definition worked if they were true. But I made no effort to show that they were true. What I have tried to argue in this essay is that asking whether a given sentence satisfies the specified condition is the same thing as asking whether it is analytic, on the traditional conception. But I offer no independent criterion for telling whether a sentence does satisfy the condition. And I hold no special brief for the traditional conception. I am free to endorse the *modus tollens* from Section 1.3. However, that is by the by. My concern has been to establish an incompatibility between two of Quine’s doctrines.

## 4. APPENDIX

My argument in this essay has depended on attributing to Quine the following view. There can be truth and falsity even where there is indeterminacy. In other words, of two incompatible accounts, each of which is compatible with the facts, one can be true and the other false. Truth outstrips factuality.

“Small wonder”, it will be said, “that Quine seems to be committed to the existence of analytic truths. Surely he has been misrepresented. When he says that there is no fact of a given matter, does he not mean that there is no *truth* of the matter? The choice between the two relevant accounts (as it may be, the choice between two manuals of translation) is supposed to be a practical affair, like the choice between driving on the left and driving on the right. Truth and falsity do not come into it.”

I do not know of anything in Quine’s writing that decides between this alternative interpretation and mine.<sup>48</sup> Later in this Appendix I shall argue that it does not in the end matter: if I am wrong on this exegetical point, only the letter of my argument is affected, not its spirit. But there is plenty to suggest that Quine is at least committed to the view which I have attributed to him.

First, observe that we are dealing with cases in which, on narrowly grammatical criteria, declarative sentences are used. (“‘Rabbit’ denotes rabbits” is an example.)<sup>49</sup> There are passages in which Quine suggests that, given his disquotational theory of truth, such grammatical criteria are decisive for truth-aptitude. Here is a revealing passage on Austin:

[Suppose] we think of truth in terms of Tarski’s paradigm. The paradigm works for evaluations... as well as for statements of fact. And it works equally well for performatives. “Slander is evil” is true if and only if slander is evil, and “I bid you good morning” is true of us on a given occasion if and only if, on that occasion, I bid you good morning. A performative is a notable sort of utterance, I grant; it makes itself true; but then it is true. There are good reasons for contrasting and comparing performatives and statements of fact, but an animus against the true/false fetish is not one of them.<sup>50</sup>

Still, it might be protested that the grammatical criteria are decisive only in the case of sentences which make sense. Quine cannot be expected to acknowledge something as true or false just because of its grammatical form, if, say, it incorporates the expression “is synonymous with”. Will he not say that the sentences in cases of indeterminacy do *not* make sense?

“Making sense” here is not straightforward. There is a danger of question-begging. The sentences in question have a perfectly acceptable *use*, even by Quine’s lights. (They have a use in a way in which sentences about synonymy, or indeed sentences of phlogiston theory, do not.) There are plenty of places in which Quine himself is seen using them.<sup>51</sup> Not only that. To accept the disquotational theory of truth is itself to endorse the

use of such sentences. For “‘Snow is white’ is true if and only if snow is white” is a case in point: there are physically equivalent theories of truth on which this sentence is rejected.<sup>52</sup>

But perhaps Quine is taking for granted a suppressed relativization to the homophonic manual of translation, which restores determinacy?

There are two points to be made in reply to this. First, it is unclear, in Quine’s own terms, whether any such relativization does restore determinacy.<sup>53</sup> Secondly, Quine allows that sentences of this kind can be used without relativization as a way, simply, of “opting” for a particular manual.<sup>54</sup> What we need is an explanation of what it is to “opt” for a manual, which (i) does justice to the fact that opting for a manual involves using declarative sentences, (ii) shows how opting for a manual nevertheless falls short of stating truths, and (iii) does not beg the principal question. Of course, an account can be provided which does beg the principal question. It can be said that truth stops where the facts stop. But then we are back at square one.

Does Quine perhaps think that the sentences involved in cases of indeterminacy are truth-*apt* but neither true nor false?

There is certainly a gap between being truth-*apt* and being either true or false, provided we reject bivalence. But can that which is truth-*apt* *and* which has the kind of use which these sentences have fall short of being true?<sup>55</sup> Quine is in any case wedded to bivalence. He has always been attracted to bivalence by its power, its simplicity and its familiarity. He is well aware of the pressures that bear on it. In particular he acknowledges some pressure coming from indeterminacy of various kinds. But he denies that either rules the other out. Here is another revealing passage:

Bivalence requires us . . . to view each general term... as true or false of objects even in the absence of what we in our bivalent way are prepared to recognize as objective fact. At this point . . . the creative element in theory building may be felt to be getting out of hand, and second thoughts on bivalence may arise. For those of us who are inclined still to rest with bivalence for its undeniable merits, this heightened awareness of the props that sustain it can still be salutary.<sup>56</sup>

There are three further points that I wish to make before resting my case in favour of my interpretation of Quine. First, this interpretation provides by far the simplest gloss on what is meant by incompatibility in cases of indeterminacy. What is meant by incompatibility in such cases is precisely what is meant by incompatibility in cases of underdetermination: two accounts are incompatible when there is a sentence which is true according to one and false according to the other.<sup>57</sup> Other glosses on what is meant by incompatibility are available, *apt* for other interpretations. But they are, by comparison, *ad hoc*.

Secondly, although the examples we have focused on have been examples concerning truth and denotation, they are only examples. Remember that Quine also thinks that there is indeterminacy in the higher reaches of mathematics.<sup>58</sup> To say that there is no truth or falsity in these matters would not be at all in keeping with his views about the enmeshment of mathematics with the rest of science.

My third point is simply that the view which I am attributing to Quine is by no means absurd. It may have seemed absurd. We tend to hear “It is a fact that . . .” as a variant on “It is true that . . .”. But once we concede that there is more to be said about the factual, then we need not shrink from the idea that, given our linguistic resources, we can frame questions that are not settled by the facts and need to be settled instead by *fiat*. Thus, for example, it is true that electrons have negative charge, and that positrons have positive charge; even so, there is no fact of the matter to determine that it should be this way round.<sup>59</sup>

But the most important point that I want to make in this Appendix is this. Even if I am wrong on the exegetical issue, I still have an argument to indicate internal tension in Quine. More specifically, I have an argument to show that, given the underdetermination/indeterminacy distinction, there is a distinction, among declarative sentences which are “acceptable” (in a suitably neutral phrase), between those whose rejection must involve a change of meaning and those whose rejection need not. ( $\mathbf{I}_2 \rightarrow \mathbf{I}_1$  is an example of the first kind, provided that  $\rightarrow$  is allowed to figure in such contexts; “‘Rabbit’ does not denote any animal that weighs more than 100 pounds” is an example of the second kind, as of course is “No rabbit weighs more than 100 pounds”.) This is no longer a distinction among truths. But I do not see why it should be any the more congenial to Quine for that. Indeed on some conceptions – not on what I have been calling the traditional conception, but on conceptions which are traditional enough – the distinction’s not being a distinction among truths brings it that much closer to the analytic/synthetic distinction. Friedrich Waismann, who viewed sentences such as “Red and green exclude each other” as “rules of grammar”, and who argued for the “autonomy of grammar”, wrote, “If we give the rules of . . . grammar we are not making any assertion,” and again, “What misleads us, when we are looking for justification for rules, is thinking that what we want are proofs of their *truth*.”<sup>60</sup>

There is a related point. On this alternative interpretation, Quine must believe each of the following about opting for a manual of translation: it can consist in the use of declarative sentences; it does not consist in stating truths; it provides a framework within which there is room for a distinction between what is and what is not in accordance with the facts.<sup>61</sup> Does this

not bring him too close for what he ought to regard as his own comfort to Carnap with his doctrine of external questions? Consider the following quotation from Carnap.

[The settling of external questions] . . . does not need any theoretical justification because it does not imply any assertion of reality. We may still speak . . . of “the acceptance of the new entities” . . . [But this] must not be interpreted as referring to an assumption, belief, or assertion of “the reality of entities”. There is no such assertion. An alleged statement of the reality of the system of entities is a pseudo-statement without cognitive content. To be sure, we have to face at this point an important question; but it is a practical, not a theoretical question; it is the question of whether or not to accept the new (entities). . . . The acceptance cannot be judged as being either true or false. . . .<sup>62</sup>

I am not saying that, on this alternative interpretation, Quine is committed to Carnap’s doctrine. But I do think that the arguments which persuade Quine to reject Carnap’s doctrine put considerable pressure on the view currently being attributed to him. Suppose, to revert one last time to the example from Section 2, that we have accepted  $I_1$ . If that provides us with the possibility of saying things that are in violation of the facts (see note 61), then why not admit that those things are false? And if those things are false, then why not be done with and admit that  $I_1$  is true?

#### NOTES

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<sup>1</sup> This idea is not new. See e.g. Rorty, 1980, pp. 192 ff. But I think my argument is new.

<sup>2</sup> My appeal to truth in this formulation is already liable to raise some eyebrows. I have in mind an extremely thin conception of truth, whereby the truth predicate is a device of disquotation (as Quine himself puts it in Quine, 1970a, p. 12). To call a sentence or an account true (“the truth”) is a surrogate for coming straight out with it. Coming straight out with the account may in turn be a matter of making some arbitrary choice. For instance, if the account is an account of what the predicates in a given language denote, then coming straight out with it may mean opting for one manual of translation instead of opting for some equally acceptable alternative: see Quine, 1990a, p. 51. If so, then calling the account true is simply a way of registering which choice one has made.

There is much more to be said about this, however. These comments will not suffice to appease everyone’s worries. I have therefore added an Appendix in which I address the worries more fully.

<sup>3</sup> There are numerous references. But see e.g. Quine, 1969, pp. 302–303. Two pieces which are especially good on Quine’s distinction, and on where Quine wants to draw it, are Friedman, 1975, and Gibson, 1986. Also very helpful is Hookway, 1988, *passim*. but esp. Pt. III, pp. 125–182.

<sup>4</sup> Cf. Quine, 1990a, pp. 96–97.

<sup>5</sup> For further discussion of the relationship between underdetermination and scepticism see Bergström, 1993.

<sup>6</sup> Cf. Quine, 1990a, Section 40, pp. 94–95. Cf. also Quine, 1986c, p. 430 and Quine, 1995, pp. 56–57.

<sup>7</sup> We should not forget that there are such facts. It is to these that an assignment of denotations to predicates (say) is answerable. To say that there is an indeterminacy here is not to deny these facts. It is simply to say that they do not force the choice between empirically equivalent but incompatible assignments. Cf. Quine, 1986c, p. 429, and Quine, 1986d, pp. 459–460. I shall amplify on this in Section 2.

<sup>8</sup> Quine, 1981a, p. 23. (I have slightly simplified Quine's definition.)

<sup>9</sup> Identity of what? I have been talking about "accounts". I shall introduce a more refined notion in Section 3. Quine talks sometimes about "theories", sometimes about "theory formulations". He adopts the latter terminology whenever he allows empirical equivalence to suffice for identity of theory, or else when he wants to forestall the question of whether it does on the grounds that the question is basically verbal. See Quine, 1981b, p. 24, and Quine, 1990a, p. 96.

<sup>10</sup> See esp. Quine, 1981e, p. 98. See also, in more detail, Quine, 1977. For a good summary of the implications of this view of physics for indeterminacy, see Quine, 1986b, Section V, pp. 187–188.

<sup>11</sup> Cf. the final paragraph of Quine, 1986c, pp. 430–431. But see also Hookway, 1988, pp. 72–74 for the idea that this conception trivializes physics and that the trivialization can be resisted.

<sup>12</sup> This seems to go against what Hookway says in Hookway, 1988, p. 210. But Hookway is talking about *theories*, understood as having a coarser grain than theory formulations (see above, note 9). What is not clear is whether it makes sense to assess theories, on this construal, as true or false.

<sup>13</sup> See Quine, 1986a, pp. 156–157, and Quine, 1990a, Sections 41–42, pp. 95–101. Quine does not cite anything by Davidson in support of his attribution. But cf. Davidson, 1984, p. 237, where he seems to be taking for granted that a theory cannot be false if it is empirically warranted. Moreover, Davidson, unlike Hookway, is not talking about theories in the coarse-grained sense of the term (see above, note 12). N.B. There are additional issues about interpretation raised here, in particular issues that arise in connection with assessing other people's accounts. But these need not detain us now. See further below, Section 3.

<sup>14</sup> N.B. I understand the analytic/synthetic distinction to be a distinction between different kinds of true sentences. And by "sentences" I mean what Quine calls "eternal sentences", linguistic types which can be classified as true or false without reference to individual utterances of them (see eg. Quine, 1960, Section 40, pp. 191–195). I am not sure that Quine is entitled to think that there are such things. More to the point, I am not sure that Quine is entitled to think that there are, given other things he thinks, in particular given his rejection of the analytic/synthetic distinction: see Moore, 1996, Section 3.1; cf. Voss and Sayward, 1976. But I shall let that pass, since my concern here is purely expository.

<sup>15</sup> Quine, 1961.

<sup>16</sup> See eg. the apparent concessions at Quine, 1960, p. 56, and Quine, 1970a, p. 81. Dummett, whose discussion of Quine's views we are about to consider, is a good example of someone who thinks that Quine has retracted some of his earlier more radical claims: see Dummett, 1978, esp. Section 1, pp. 375–384.

<sup>17</sup> *Ibid.*, p. 375.

<sup>18</sup> Some of what I am about to say is anticipated by Dummett later in his discussion, pp. 411 ff. Cf. also Carnap, 1990.



<sup>19</sup> See esp. Quine, 1961, Section 5, pp. 37–42.

<sup>20</sup> *Ibid.* p. 42.

<sup>21</sup> Cf. Quine, 1981c, p. 70.

<sup>22</sup> Cf. Dummett's references to what he calls Quine's "inextricability thesis", in Dummett, 1978, p. 387.

<sup>23</sup> One thinks here of the familiar definition of "analytic" as "true by virtue of meaning".

<sup>24</sup> For further discussion of the various issues raised here see Field, 1972, and Friedman, 1975, esp. Sections III and IV, pp. 360–373. See also Rorty, 1971–2, esp. p. 459. (Rorty is keen to endorse the *modus tollens*.)

<sup>25</sup> See Quine, 1986c, p. 430.

<sup>26</sup> Dummett, 1978, esp. Section 7, pp. 409–416.

<sup>27</sup> Consider here some of Rorty's claims, also concerned with the thesis of the indeterminacy of translation, at the beginning of Rorty, 1971–2, pp. 443 ff.

<sup>28</sup> *Ibid.*, p. 459.

<sup>29</sup> Cf. McGinn, 1984, p. 152. Cf. also Heal, 1989, p. 35. N.B. Though I disagree with Heal on this, I think Heal's book contains excellent material on Quine's position, *passim*.

<sup>30</sup> This picks up on note 7, above. See again the material cited there, esp. Quine, 1986d, the paragraph straddling pp. 459 and 460. And cf. Quine, 1990b.

<sup>31</sup> I shall soon mention the qualification referred to in Section 1.2.

<sup>32</sup> Cf. again the material cited in note 11 above.

<sup>33</sup> One is reminded of some of the things Hilbert said in connection with the use of ideal elements in mathematics: see Hilbert, 1967. Cf. again the material by Quine cited in note 6 above.

<sup>34</sup> For discussion of issues closely related to those in this paragraph see Field, 1975. On the uncomfortability for Quine of distinguishing between choices which amount to linguistic legislation and choices which are answerable to the facts, cf. Quine, 1961, pp. 44–46. Cf. also Quine, 1981f, pp. 93–94. For a related argument that Quine has problems here see Rorty, 1971–2, pp. 453–454.

<sup>35</sup> See Quine, 1986c, p. 427 and Quine, 1986e, p. 620. My worry is that Quine is begging important questions about finite axiomatizability (if I may use a precise term rather loosely). Note that in the first of these passages Quine also grants empirical content to what he calls observation sentences. I think this is a departure from the position of Quine, 1961, but I shall not argue the point here.

<sup>36</sup>  $\rightarrow$  is to be understood purely truth-functionally. (Note that the example could just as well have been, simply,  $\neg I_2$ . But I think  $I_2 \rightarrow I_1$  will illustrate the argument more vividly.)

<sup>37</sup> Cf. again the passage cited above, note 4.

<sup>38</sup> Cf. how Quine argues from the underdetermination of physical theory to the indeterminacy of translation in Quine, 1970b. For a further example of how the indeterminacy case and the case of mere underdetermination could interact in this way, imagine evidence which persuaded us to interpret other beings as manipulating us in various ways – I am assuming the indeterminacy of interpretation – and which thereby led us to adopt what had hitherto seemed just a crazy sceptical alternative to our view of the facts.

<sup>39</sup> Here and elsewhere in this essay I am prescinding from all complications concerning the meaning of  $\rightarrow$ : a change of logic would clearly add further problems, but we can afford to ignore these.

<sup>40</sup> See Quine, 1970a, pp. 1–3.

<sup>41</sup> Carnap, 1983. See Quine, 1961, pp. 43–44, and Quine, 1960, Section 56, pp. 270–276. Cf. in this connection various strands in Hylton, 1982. (My essay overlaps with Hylton's at several points, though there are also significant points of divergence.)

<sup>42</sup> The definition of incompatibility for evaluations is the same as that for accounts: see the beginning of Section 1.1. This might seem to involve an illegitimate presupposition of our own logic. Will there not be some evaluations according to which some sentences are both true and false? Indeed there will. But the definition of incompatibility begs no questions. And our aversion to incompatibility – our resolve not to accept two incompatible accounts – remains as part of the naturalism.

<sup>43</sup> Quine, 1981b, pp. 28–29.

<sup>44</sup> For further material relevant to these issues see Quine, 1969, Section 5, pp. 308–311. I am assuming that “language has settled the sentences and what they mean” (see p. 309). The reason why I think that Quine has made a concession to atomism is related to what I said in note 35 above: his argument here presupposes that same notion of observability. N.B. The idea of an evaluation is nicely underpinned by Quine’s notions of assent and dissent: see Quine, 1960, pp. 29 ff.

<sup>45</sup> See eg. Quine, 1970a, pp. 98 ff.

<sup>46</sup> As I indicated in Section 2, rejection of  $I_2 \rightarrow I_1$  could certainly involve a change of view as well. Cf. note 38 above.

<sup>47</sup> Quine, 1961, p. 32.

<sup>48</sup> The closest I can find to evidence decisive in favour of the alternative interpretation is Quine’s enthusiastic reception of Gibson, 1986, where Gibson glosses “indeterminate” as “neither true nor false” (p. 152).

<sup>49</sup> N.B. Throughout this Appendix “sentence” must be understood in a more relaxed sense than in the main text (see above, note 14). Otherwise sentences will be by definition truth-apt, and the argument will be begged in favour of my interpretation.

<sup>50</sup> Quine, 1981d, p. 90. (But contrast Quine, 1970a, p. 10.)

<sup>51</sup> See eg. the passage from Quine, 1990b, cited in note 30 and Quine, 1981a, p. 20, for affirmations that “rabbit” denotes rabbits.

<sup>52</sup> There is a fascinating discussion of possible internal tension here in Boghossian, 1990.

<sup>53</sup> See Davidson, 1984.

<sup>54</sup> See the passage from Quine, 1990a, cited in note 2.

<sup>55</sup> Perhaps it can, by being false. Is it possible that Quine thinks all the sentences in question are false? No. In some cases there are alternatives which, granted truth-aptitude, are subcontraries, for instance that a given predicate denotes rabbits and that it does not denote rabbits.

<sup>56</sup> Quine, 1981f, pp. 94–95. Cf. Quine, 1970a, pp. 83–86, and Quine, 1987. My opponent may say that the indeterminacy with which Quine is concerned in this passage, illustrated by the example of the table, is very different in kind from the indeterminacy with which we are concerned. Is it? Let a *mable* be a table with an extra molecule. Then cannot Quine’s worry in this passage be captured more or less as follows? There is no fact of the matter concerning whether “table” denotes tables rather than mables.

<sup>57</sup> If we understand incompatibility in the same way in cases of both kinds, then we lend considerable force to the underdetermination/indeterminacy distinction.

<sup>58</sup> See the passages cited in note 6. (This connects with his claim, in the second passage, that factuality comes in degrees, something particularly hard to accommodate on the alternative interpretation.)

<sup>59</sup> Of course, put like that, the view appears un-Quinean. Just so. Here, I think, we are seeing a manifestation of precisely the tension in Quine’s views which I claim to have located.

<sup>60</sup> Waismann, 1965, pp. 35 and 40 respectively, his emphasis. (The example concerning red and green is given on p. 137.) Waismann’s position is, of course, essentially Wittgensteinian.

<sup>61</sup> See again note 7 above. We must not forget that, despite any indeterminacy, an assignment of denotations to predicates still has to answer to the facts. An entirely homophonic assignment would do so. An assignment for English that was entirely homophonic save that it included the sentence “‘Rabbit’ denotes helicopters” would not. Opting for the homophonic assignment for English would provide one with the possibility of using that sentence as a way of misrepresenting the facts.

<sup>62</sup> Carnap, 1983, p. 250.

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