

CRITICAL STUDY

DUMMETT AND REVISIONISM¹

BY CRISPIN WRIGHT

Michael Dummett, *Truth and Other Enigmas*. London: Duckworth. 1978.
Pp. lviii+470. Price £18.00.

This volume of 25 papers gathers together all Dummett's philosophical essays published before August 1976 save a few he did not consider worth reprinting and the two "What is a Theory of Meaning?" pieces.² It contains in addition two previously unpublished papers: "Realism" and "Platonism", and an English translation of "Frege's Distinction between Sense and Reference", originally published in Spanish. The text of the essays amounts to 458 pages; the author includes a 42-page philosophical preface and a 7-page note on two purely technical papers in formal logic which are not reprinted here.

Dummett's writings are justly respected for their profundity, insight and argumentative power. And, if anything, the articles in the present collection gain in stature from publication in this format: for one thing, the reader is made more vividly aware of the absolutely fundamental, and intensely difficult, character of the philosophical questions on which Dummett has concentrated; the volume bears witness not merely to an already exceptional philosophical achievement but to an intellectual courage unusual in any area of scholarship. The continuity of concerns running through the papers is also remarkable: most especially, they are dominated by the issues to do with realism, and with the place of the theory of meaning in philosophy, of which Dummett more than anyone has made us aware. The two most extensive subsidiary themes concern ontology and time. As the author himself remarks, there is not much evidence of changes of mind in this book; thus, with caution and the guidance of the Preface, it is practicable to read various groups of the papers as though they constituted the chapters of a single text.

The general level of Dummett's writing is difficult. This is partly the inevitable result of difficulty of subject matter and the complexity of the thought necessary to cope with it; it may also be a reflection of a certain fluency—for many of the more lengthy sentences would be much more immediately comprehensible if heard spoken, with emphases which the written sentence cannot mark. However that may be, philosophers cannot expect, any more than mathematicians or physicists, to be able to ingest work at the highest levels in their field with no more struggle than if it were a Sunday newspaper. And it is only very occasionally that one can spot what seems to be a decisively better way of formulating a sentence.

¹I am indebted to the late Gareth Evans, and to Christopher Peacocke and John Skorupski, for helpful comments on an earlier draft of this paper.

²In, respectively, *Mind and Language*, Wolfson College Lectures 1974, ed. S. Guttenplan (Oxford, 1975); and *Truth and Meaning: Essays in Semantics*, eds. G. Evans and J. McDowell (Oxford, 1976). (These papers are, apparently, to form the basis of a monograph of the same title.)

I want, in this paper, to single out the idea, recurrent throughout the writings in *Truth and Other Enigmas*, that to abandon the realism with which we regard so many kinds of statement will involve us in abandoning the belief that classical logic holds valid for them.³ There is no question that much of the interest which Dummett's writings have excited is directly consequent on this notion: we are confronted by the prospect of being constrained by pure philosophical considerations to revise and modify not merely philosophical preconceptions which we hold, but substantial sections of our basic "first order" linguistic habits and practices. My concern here is thus not with the strengths or weaknesses of realism but with these putative revisionary implications of anti-realism: what, if any, outlets are open to someone who feels the force of the anti-realist arguments which Dummett has expounded, but who desires, for whatever reason, to conserve as much of our, apparently realism-inspired, linguistic practices as he can?

I

What exactly is the connection between those principles of classical logic which the Mathematical Intuitionists jettison, for example excluded middle and double negation elimination, and realism? A superficial answer would be that the Principle of Bivalence would appear, on certain natural assumptions, to entail the validity of both those examples. If every proposition, *P*, is determinately either true or false, and if the negation of *P* is true just in case *P* is false, then matters have to arrange themselves in such a way that, one way or the other, the disjunction of *P* with its negation is true; likewise, if the double negation of *P* is true, the negation of *P* will have to be false, so that *P* itself will be something other than false—and, by Bivalence, truth is the only remaining possibility.

Of course, for all that it may illustrate the frame of mind in which distinctively classical principles can seem unassailable, this reasoning tacitly appeals to various presuppositions: the orthodox introduction and elimination rules for disjunction, the convertibility of '*P* is true' and '*P*', Modus Tollendo Ponens, the principle that no proposition can simultaneously be true and false, and the transitivity of negation across the biconditional. But these presuppositions are not merely natural; they would all be acceptable to an intuitionist, so that the status of the reasoning as an explication of how Bivalence enjoins the validity of certain classical principles is in no way compromised by their part in it. The superficiality rather resides in the fact that no explanation has so far been given of why the realist should endorse Bivalence.

Often Dummett writes as though acceptance of Bivalence was absolutely constitutive of realism.⁴ And it is true that if somebody accepts Bivalence for a class of statements for whose truth-values we cannot in every case guarantee means of decision, then he is at least committed to holding that we cannot guarantee that truth everywhere coincides with decidable truth. But, unless he accepts the transition from 'we cannot guarantee that *P*' to 'it is a possibility that not-*P*', he has not thereby committed himself to the possibility of verification-transcendent truth. This transition is intuitionistically suspect: of any mathematical statement which is not effectively decidable it would be intuitionistically correct to say that we cannot guar-

³See, for example, pp. 18, 155, 167-8, 225-6, 288, 305, and 367. (All page references are to *Truth and Other Enigmas* unless otherwise stated.)

⁴For example, pp. xxxii, 146, 175, 228, 274, 315, and 358.

antee the existence of means of verifying or falsifying it, but it is not, in view of the intuitionists' account of negation, acceptable as an intuitionistic possibility that there should simply be no means of verifying or falsifying the statement in question. There is therefore a doubt whether endorsement of Bivalence for other than effectively decidable statements is of itself an admission of the possibility of verification-transcendent truth. Conversely, as McDowell has argued,⁵ to allow that the truth or falsity of a certain class of statement may elude our capacities for detection would seem to carry no immediate commitment to Bivalence for them.

One reason why it could look as though Bivalence will be an important part of the realist's equipment is because we think of the truth-conditional conception of declarative-sentence meaning as involving not merely that each well-defined sentence is associated with determinate conditions of truth, but, more, that the information which an ideal explanation of its meaning will get across, that is, the information which anyone who understands it grasps, is of this form: S is true if and only if conditions ϕ obtain, and is false in *any other circumstances*. For now it appears that the very mode whereby we confer a determinate sense upon a declarative sentence guarantees that the world must exemplify one of just two possible kinds of states of affairs; those which make that sentence true, and those which make it false. But the thought here is inconclusive. Bivalence requires a declarative sentence to be *determinately* true or false, so it fails for vague statements; but there is no reason why our understanding of a vague declarative sentence should not take the shape just described—it is just that the distinction between ϕ -circumstances and others will be vague. Thus 'X is bald' is true if circumstances obtain constituting X's baldness, and is false, *pace* Frege, Strawson *et al.* in circumstances of any other kind. If a realist is one who thinks that our understanding of all or most of the statements which we normally think we perfectly well understand is something that exemplifies the above truth-conditional schema, then he will commit himself to certain statements' having truth-conditions which we cannot guarantee to be able to recognise when they obtain, and, in some cases perhaps, can guarantee not to be able to recognise when they obtain. But he will not have committed himself to Bivalence; nor, therefore, at any rate by the above route, to an endorsement of the unrestricted validity of classical logic.

We have, in fact, to distinguish at least four non-equivalent elements in realism as Dummett has described it:—

- (i) endorsement of Bivalence for statements which are not effectively decidable (henceforth 'non-ED statements');
- (ii) admission of the possibility of verification-transcendent truth;
- (iii) acceptance that our understanding of all statements fits the truth-conditional schema;
- (iv) acceptance that for any true statement, there must be something in virtue of which it is true.

If the foregoing reflections are correct, then (i) and (ii) are two-way independent; and (iii), though it entails (ii), does not entail (i). It would be interesting to explore the relations between the four strands further—but here we must be content to notice that an endorsement of (iv) would seem to be essential to the revisionary power of the thesis that pure mathematical

⁵"Truth-conditions, Bivalence and Verificationism", in Evans and McDowell, *op. cit.*

truth cannot intelligibly transcend proof. I shall from here on take it that (ii) is the cardinal doctrine of realism, simply because it is (ii) that Dummett's anti-realist arguments most directly attack.

II

Since the thesis to be considered is that to abandon realism involves abandoning classical logic for a large class of statements, it is arguable that what we ought to be enquiring is not whether realism sanctions classical logic but whether, conversely, to endorse classical logic for non-ED statements commits one to realism about them; if, and only if, that is so, is the thesis correct.

The natural argument here is parallel to the attempt, sketched above, to discern a commitment to verification-transcendent truth in an endorsement of Bivalence for non-ED statements. Suppose someone asserts of Dummett's now-dead, untried Jones that either he was brave or he was not. This is a disjunction, so, like any disjunction, if true, one of its disjuncts must be true. But the case is so constructed that there can be no question of evidence, let alone verification, for either disjunct; so surely the assertor has straightforwardly committed himself to the existence of a well-understood verification-transcendent truth.

The argument has fared better than its counterpart above merely because we have picked an example where the intuitionistically contentious transition, from 'we cannot guarantee to be able to verify or falsify P' to 'it is a possibility that we can neither verify nor falsify P', does not need to be negotiated; the context of the example has been specified to ensure that we can achieve neither verification nor falsification of it. But then, with Dummett, we have surreptitiously parted company with anything resembling the intuitionistic account of negation. Intuitionistically, the negation of P is counted as proved just in case we have a construction of which we can recognise that it would enable us, were we to obtain a proof of P, to construct a proof of a contradiction. Since, for the intuitionist, there is no question but that his mathematical thought is consistent, the account is tantamount to the stipulation that a proof of the negation of P is any construction which we can recognise to rule out the possibility of a proof of P. A natural generalisation to ordinary, contingent statements, would therefore be:

(N) A total state of information (hereafter, a TSI) justifies the assertion of the negation of P just in case it justifies the assertion that a TSI justifying the assertion of P cannot be achieved, no matter how thoroughgoing an investigation is conducted.

But, on this account, there would be no question that a TSI might justify the assertion that no subsequent TSI could justify the assertion either of P or of its negation; rather, the description of the Jones example would entail that we were in a position to assert the negation of 'Jones is brave'. (So that, in general, it would no longer be possible to see the negation of a counterfactual conditional as another, contrary counterfactual.)

At this point it would appear that the crucial issue is whether (N), or something like it, is the appropriate form for a generalised anti-realist account of negation to take. If it is, there will be no recognisably undecidable contingent statements; and it will be impossible, because of the intuitionistically contentious nature of the transition involved, to argue directly that someone who accepts the validity of classical logic for non-ED statements thereby

commits himself to the possibility of their possessing verification-transcendent truth values. But if it is not, and recognisably undecidable statements are a possibility, it appears that the argument may succeed and that Dummett's revisionary contraposition may have to be allowed.

In fact, it is hard to see what sort of considerations might persuade someone with general anti-realist sympathies to plump for (N). In mathematics the intuitionist can—I do not say “should”—be seen merely as having adapted the classical conception of negation to the constraint that mathematical truth be in principle humanly recognisable truth. Classically, the negation of a well-defined mathematical statement, P, is true just in case (it is true that) no aspect of mathematical reality is so constituted as to make P true; but if mathematical truth is understood as in principle humanly recognisable truth, then the classical account collapses into the stipulation that the negation of P is provable just in case it is provable that no proof can be achieved of P—whence, since there are no assertion grounds for the claim that P is provable save actual possession of a proof of P, precisely the intuitionistic account of the assertion-conditions of mathematical negation issues. (N), however, cannot be seen, comparably, as simply an adaptation of the classical account to an anti-realistically purified notion of truth; for, in contrast with proofs, the assertion-grounds of contingent statements tend to supply a *defeasible* warrant for the assertion of those statements and thus cannot be construed as truth-conditions.⁶ There is no clear sense, therefore, in which (N), in contrast with its mathematical analogue, can be seen merely as an adaptation of the realist account which it is proposed to supersede. Add to that the obvious difficulties in the way of achieving a satisfactory formulation of what (N) intends—it is not clear, for example, that the present formulation succeeds in excluding the suggestion that enrichment of our present TSI by the Four Minute Warning would entitle us to assert the negations of virtually all hitherto undecided statements!—and it is clear that the question, how best to frame a generalised anti-realist account of negation, is still open.⁷

III

Even if (N) were to fall by the wayside, however, there is a further problem with the sketched argument from excluded middle to realism—its outright reliance on the distributivity of truth over disjunction: the principle that in order for a disjunction to be true it is necessary and sufficient that at least one of its disjuncts be true. For this principle is open to question in a familiar class of cases. One kind of case is where truth is consequent

⁶We cannot in general, that is to say, attempt to construe the *truth* of a contingent statement as consisting in the availability of a total state of information which justifies its assertion; for if a state of affairs is sufficient to constitute the truth of a statement, it ought to continue to be so no matter how augmented—which is not the situation in the case of the best type of grounds we can have for asserting almost all types of contingent statement.

⁷If the anti-realist refuses to equate the content of the assertions ‘P’ and ‘P is justifiably assertible’ (note 6 contains the germ of an argument why he should so refuse; see section V of my “Truth-Conditions and Criteria”, *Aristotelian Society Supp. Vol.* 50 (1976)), an apparently different tactic on negation, suggested to me by John Skorupski, would be: (N)* A TSI justifies the assertion of the negation of P just in case it leads, in conjunction with the hypothesis that P, to absurdity. I say “apparently different” because (N)* would seem to identify the assertibility conditions of ‘not-P’ with those of ‘if P, then Q’, where Q is some absurdity; so that the effect of (N)* depends upon what account is given of the assertibility-conditions of the conditional. I cannot pursue the issue further here.

upon decision, or convention, of some sort; if, for example, we have the conception that fictional characters have exactly those properties which, either explicitly or implicitly, their authors give them, then it is going to be a possibility that an author assigns some disjunctive property to one of his characters yet omits to determine which of the disjuncts holds of that character, so that a disjunction will be truly assertible although none of its disjuncts is.⁸ It is, likewise, acceptable English to say of an intermediate shade of colour that it is either red or orange while recognising that it could not happily be described as either in particular (cf. pp. 255-6). And if, following, for example, Fine,⁹ we take it that a (compound) colour predicate definitely applies to an object just in case it would still apply to it if the constituent predicates were made completely precise in such a way as to respect existing cases of their correct application, then one could correctly assert of objects of which no definitely correct *simple* colour description can be given that they are, say, definitely either red or not red.

More generally, assume any formal deductive theory, and the following constructive notion of model for it: a model will be considered to be well-determined if and only if it is decidable of an arbitrary well-formed sentence of the language of the theory whether or not it holds good in the model. Let such a sentence be considered *true* (absolutely) just in case it is true in every constructive model of the theory. Obviously, a disjunction of any statement in the language of the theory with its negation will now be absolutely *true*, since one or other of its disjuncts will be true in any particular constructive model which we happen to consider. But the theory need not, for all that we have said, be negation-complete; so some statements in the language of the theory may be true in some constructive models and false in others. Excluded middle will thus be valid for this theory even in cases where neither of its disjuncts is absolutely *true*.

More specifically, we can envisage the following stipulations:

- (i) ' $A \vee B$ ' is *true* iff $(\forall M)$ ' A ' is true-in-M or ' B ' is true-in-M;
- (ii) ' $\sim A$ ' is *true* iff $\sim(\exists M)$ ' A ' is true-in-M;
- (iii) ' $A \rightarrow B$ ' is *true* iff $(\forall M)$ if ' A ' is true-in-M, ' B ' is true-in-M;
- (iv) ' $A \& B$ ' is *true* iff $(\forall M)$ ' A ' is true-in-M and ' B ' is true-in-M.

If to the above we add orthodox recursive clauses for truth-in-M (so that, for example, ' $A \vee B$ ' is true-in-M if and only if either ' A ' is true-in-M or ' B ' is true-in-M) then it is notable that the ordinary introduction and elimination rules for disjunction will preserve absolute *truth*. This is apt to seem surprising in the case of the elimination rule, since one might have supposed that only if the *truth* of a disjunction requires the *truth* of at least one of its disjuncts would it be an adequate ground for attributing a certain consequence to a disjunction that it followed separately from each of its disjuncts. But if ' $B \vee C$ ' is absolutely *true*, then either ' B ' or ' C ' is true in any particular constructive model of the theory; so if the conditionals ' $B \rightarrow D$ ' and ' $C \rightarrow D$ ' are both absolutely *true*, (iii) above immediately yields that ' D ' must be true in every constructive model, so absolutely *true*. (I leave it to the reader to verify the more general transition: $A \rightarrow (B \vee C)$, $(E \& B) \rightarrow D$, $(F \& C) \rightarrow D \vdash (A \& E \& F) \rightarrow D$.)

⁸To see this kind of example as a genuine failure of truth to distribute over disjunction, it is, of course, necessary to see the author's fiction as constituting a kind of *truth*; otherwise, the undoubted failure of an appropriate 'in fiction' operator to distribute over disjunction is not to the point.

⁹"Vagueness, Truth and Logic", *Synthese*, 30 (1975).

To describe the shape of an example is not to give one. What the foregoing description shows is how it *might be* that, without any appeal to Bivalence, the use of classical logic could be validated for a particular theory in the eyes of an anti-realist, even though the sentences of that theory were not effectively decidable. 'Truth-in-M', for particular M, is, to be sure, an effectively decidable notion—but that is precisely why the anti-realist ought to have no objection to the role it plays in (i) - (iv). And there is nowhere any assumption that absolute *truth* may transcend our capacity to recognise it. Absolute *truth*, however, need not be an effectively decidable notion; indeed, for all the constraints we have put on the shape of the example, theoremhood in the theory need not be decidable either. So it cannot be correct to suppose without further ado that the endorsement of classical logic for certain non-ED statements involves a commitment to realism; it is necessary to show in addition, at least for the particular class of statements at issue, that no semantics can be found, other than the traditional truth-conditional brand or others involving essential play with recognition-transcendent notions, which validates the application of classical logic to those statements. Our formal example shows, in general terms, how that might not be so.¹⁰

In fact, we can go some way toward giving a concrete example by following through a suggestion of Dummett himself in "The Reality of the Past" (pp. 366-7). Let us treat 'M' in the above clauses as ranging over *sufficiently specific presently acceptable world-histories*: where a world-history, that is, a finite enumeration of statements concerning the past, is sufficiently specific with respect to a statement A just in case it contains either A or its negation, and is presently acceptable just in case it is consistent and we presently lack any reason to doubt any of its constituent statements. Then an atomic statement is true-in-M just in case it is a member of M; a compound statement is true-in-M under the conditions specified by the orthodox recursive clauses; an atomic statement is *true* just in case it holds in every sufficiently specific presently acceptable world history; and a compound statement is *true* under the circumstances stipulated in (i) - (iv). (It seems inapposite to talk of "absolute" truth in this case, since the ephemeral character of present acceptability is going to generate the possibility of statements becoming, and ceasing to be, *true*.) There is now every promise of validating classical logic for statements about the past. But do we do so in an anti-realistically acceptable way? Certainly it is decidable of an ordinary statement whether or not it is a member of any sufficiently specific world-history which is *given* to us as presently acceptable. But the consistency of a world-history need not be an effectively decidable issue; and that in turn involves that it need not be effectively decidable whether our present state of information justifies doubt about any of its constituents. So whether or not a particular world-history is presently acceptable need not be an effectively decidable question. That, however, is no objection, from an anti-realist point of view, to the use being made of the notion provided we know what it is to be entitled to claim that a particular world-history is presently acceptable, and are capable of recognising certain world-histories as being so. If that proviso is granted, then the non-revisionary anti-realist has a strategy for making good a title to the use of classical logic for statements about the past which involves no appeal to Bivalence, respects their not being effectively decidable and

¹⁰See Hartry Field, "Logic, Meaning and Conceptual Role", *Journal of Philosophy*, 74 (1977), for a quite different validating semantics for classical logic, based not on truth but on the notion of subjective probability.

makes no play with verification-transcendent assumptions.¹¹ How the strategy would ultimately fare we can enquire no further here.

IV

A natural reply to the foregoing is that it overlooks the positive character of much of Dummett's argument: the revisionary anti-realist has no need of the assumption that an endorsement of classical logic commits one to an unacceptable realism about a large class of statements if, as Dummett does, he can argue directly that the correct anti-realist semantics enjoins a non-classical logic. Whether or not some semantics not distributive of truth and free of verification-transcendence can be cobbled up to validate the use of classical logic in what have been taken to be anti-realistically contentious areas, no one—the reply continues—is going to be tempted to think for a moment that we shall thereby successfully characterise the notion of truth that actually governs talk in such areas, or the meanings of the logical particles. Rather, here is the place for the battery of considerations, associated by Dummett with the later Wittgenstein's slogan that meaning is use, which are intended to “dethrone the concepts of truth and falsity” from the central place which they have traditionally occupied in the philosophical theory of meaning and supplant them with *warranted assertion* and *warranted denial*. In particular, when we embark on an assertibility-conditions account of the meanings of the logical constants, it becomes clear that once non-ED statements come within the range of the propositional variables, certain of the cardinal principles of classical logic cease to be acceptable.

In order to rehearse how this comes about, let us consider the examples of excluded middle, and double negation elimination, in the light of the generalised intuitionistic account of negation, (*N*), proposed earlier, and the following corresponding proposals for disjunction and the conditional:

(D) A total state of information (TSI) justifies the assertion of the disjunction of A with B just in case it (a) justifies the assertion of A, or (b) justifies the assertion of B, or (c) can be recognised to be capable of effective transformation into a TSI of one of the types (a) and (b).¹²

(C) A TSI justifies the assertion of a conditional whose antecedent is A and whose consequent is B just in case it can be recognised that its enrichment into a TSI justifying the assertion of A would *eo ipso* transform it into a TSI justifying the assertion of B.¹³

¹¹Bivalence, in fact, will very likely be actually counterexemplified in a large class of cases: we have only to recognise that our present state of information provides absolutely no purchase either on A or its negation, to be in a position to construct sufficiently specific and (plausibly) presently acceptable world-histories some of which contain A and some of which contain not-A; so that neither is *true*. That statements about the past are not effectively decidable is respected by the consideration that the effective decidability of *truth* (i.e., of the question whether A is *true* or not) would require that of ‘our present state of information provides reason to doubt that . . .’; which, as noted, is dubious.

¹²Obviously ‘transformation’ must here be interpreted so as to exclude manipulation of the relevant aspects of the world; otherwise my present TSI will justify me in asserting any disjunction the truth of one of whose disjuncts I know it to be within my power to bring about. It is a very nice question just how the needed distinction should be formulated.

¹³There is nothing inevitable about either ‘enrichment’ or ‘*eo ipso*’. We could have proposed: (C)* A TSI justifies the assertion of a conditional whose antecedent is A and whose consequent is B just in case it can be recognised that its *modification* into a

Consider any non-ED statement A. Excluded middle is valid for A just in case ' $A \vee \sim A$ ' is justifiably assertible in any TSI whatever. So we have to consider whether, whatever our TSI happens to be, it is bound to be of one of the following three kinds:

- (i) It justifies the assertion of A
- (ii) It justifies the assertion that no TSI justifying the assertion of A can be achieved
- (iii) It can be recognised to be capable of effective enlargement into a state of information of type (i) or of type (ii).

But now, bearing in mind that A is not effectively decidable, it is clear that there is no reason why any of these three cases should obtain. It is perfectly possible that we are not in a position to assert A, but that, while having no reason to expect that we cannot get into a position to assert A, we have nevertheless no effective way of turning up grounds for the assertion of A or grounds for asserting that grounds for its assertion cannot be achieved. An example of a statement in this situation would be, I suggest, 'Travel at close to the speed of light will one day be possible'; we have no grounds for asserting that statement, no grounds for denying that its assertion may one day be justified, and no way of effectively securing either type of ground. So we have no alternative but to accept that excluded middle is no longer unrestrictedly validly assertible (which is not, I stress, to allow that it may be validly denied).

What of double negation elimination? We have to consider whether our TSI is bound to be such that, for an arbitrary non-ED statement A, its enrichment into a TSI justifying the assertion of the double negation of A would *eo ipso* transform it into a TSI justifying the assertion of A itself. Now, to be justified in asserting the double negation of a statement is to be justified in asserting that no TSI justifying the assertion of its (single) negation can be achieved; that is, it is to have one's TSI justify one in asserting that no TSI can be achieved in which one would be justified in asserting that no TSI can be achieved in which one would be justified in asserting A. Consider, therefore, the statement, 'There exists intelligent anthropoid life outside this galaxy'. To be justified in denying that statement would be, on the present account, to be justified in asserting that no TSI can be achieved which would justify its assertion; so it is arguable that not merely are we not in a position to deny the statement but that we are in a position to deny its denial, for we surely have grounds now to reject the suggestion that we shall ever have adequate grounds for ruling out the possibility that evidence of the existence of intelligent anthropoid life outside this galaxy will come our way. But, if that is correct, then we can be in a position to assert the double negation of the statement while in no position to assert the statement itself; for our grounds for asserting the double negation are manifestly not evidence of the existence of life of the appropriate kind.

Granted, then, that (N), (D) and (C) satisfactorily capture our intuitive understanding of the relevant logical constants, it appears that our logical practices outside the domain of effectively decidable statements, insofar as they are prevailingly classical, are indeed in disharmony with our under-

TSI justifying the assertion of A would result in a TSI capable of effective transformation into one justifying the assertion of B. There are some complex issues here, but they are not relevant to the discussion of double negation elimination in the text.

standing and ought to be revised. But, as noted earlier in the case of (*N*), the assumption is a major one. In particular, since the revisionist is prepared to allow from the outset that our linguistic practice can be out of line with the correct account of the meanings of certain crucial terms, it is a particularly awkward question how the *correct* account is to be conceived as recognisable — for mere *observation* of our practice will clearly not do. The classical truth-conditional account of the logical constants is, if the anti-realist is right, incoherent when given its intended wide application; but while philosophical considerations may put us in a position to recognise that circumstance, and even, perhaps, to see that conditions of warranted assertion should play a central role in the theory of meaning, nothing has so far been done to explain how we are to know what precise cast to give our assertibility-conditions explanations of the logical constants. Nowhere does Dummett attempt this. Until the *lacuna* is filled the idea that an assertibility-conditions approach to meaning is bound, when given its widest application, to prove revisionary of classical logic, is just an assumption.

V

An inexorable course, then, from anti-realism to revisionism has yet to be mapped out. But there is, as it seems to me, a deeper assumption operating in Dummett's thought in this area. The non-distributive approach was a suggestion about how an anti-realist might coherently attempt to *explain* his acceptance of classical logic for certain non-ED statements. Someone who explored that line would be continuing to suppose that logic needs validation in terms of a philosophically acceptable semantics. That is Dummett's deeper assumption, implicit also in the idea that our inability to validate, say, excluded middle in terms of a satisfactory assertibility-conditions account of the logical constants would call into question the validity of the principle.

Now, what is to prevent someone from accepting the anti-realist complaints about classical semantics while refusing to seek a *semantic validation* of logic at all? If we grant, for the sake of argument, that it is by reference to conditions of warranted assertion and denial that a satisfactory account of the understanding of declarative sentences should proceed, the fact remains that the assertion or denial of a statement may be warranted by *inference* — so why should it not simply be *classical* logic that determines this class of assertion- and denial-conditions? It is true that there is no *justification* for certain principles of classical logic in terms of the sort of generalised assertion-conditions semantics prefigured in the preceding section; but why is justification necessary?

To put the matter another way: suppose we come across a community whose language contains a binary sentential operator, ϕ , competence in whose use appears to subserve the following descriptive hypothesis:

' ϕ (AB)' is considered justifiably assertible just in case it is believed that there are sufficient grounds for asserting A, or for asserting B, or for believing that one can get grounds of one of the first two kinds, or B is the negation of A, or B is believed to be a consequence of the negation of A.

Evidently there could be such a practice—it is designed closely to resemble our own practice with 'or'. The pattern of use seems clear and coherent enough; so what can be wrong with it?

A natural thought is that the symbol, ϕ , so used, is merely ambiguous; whereas we do not ordinarily conceive of there being such ambiguity in the sense of 'or'. But it is only a necessary condition of ambiguity that a characterization of the assertion-conditions of sentences involving a putatively ambiguous symbol should embrace a seemingly heterogeneous variety of cases. Provided the inferential connections and, to put it loosely, pragmatic consequences of relevant statements are appropriately invariant, then, variation in their assertibility-conditions notwithstanding, we shall regard the symbol as univocal. So we can suppose that the deductive liaisons of ' ϕ (AB)' are the same irrespective of which, if any, type of ground characterised is prompting its assertion; certainly that is how it is with 'or' in our ordinary inferential practice.

In classical semantics the presupposition was that the validity of a logical schema had to be traceable to the Principle of Bivalence and the truth-conditional explanations of the logical constants; and a corresponding assumption is made in intuitionistic semantics, and illustrated in the examples of the preceding section. What is now being mooted is a style of semantic theory in which the validity of certain schemata will simply be taken as *primitive*. Preference for such a style would fit nicely with the view that the validity of these schemata does not *flow from* the meanings of the logical constants—rather, their acceptance as valid contributes towards determining those meanings.

The intended distinction, whether or not ultimately coherent, is easy enough to illustrate. A training in the use of foot and yard rules, normal in all respects save that it involved no explicit definitions, would put someone in a position to recognise the falsity of '4 feet = 1 yard'—so that the truth of the negation of that statement can be seen as flowing from the meanings of 'foot' and 'yard' as explained in this operational way. But our trainee would not be in a position to recognise the truth of '3 feet = 1 yard'; it would be consistent with everything that he was in a position to determine that 3 feet should equal 0.9981 yards—or whatever. So here the role of '3 feet = 1 yard' would be to determine further the meanings of 'foot' and 'yard' as fixed operationally; that sentence would be a well-motivated but nevertheless independent explicit convention. (Likewise, to take an example of Dummett's (p. 169), there is nothing in the ostensive training which we give our children in the use of 'green' and 'blue'—in contrast with the situation with 'green' and 'red'—to prevent their intelligently receiving a description of some suitably intermediate shade of colour as 'green and blue all over'. So, that nothing can be correctly so described is again an independent and explicit convention.)

What is being suggested, then, is that it is open to an anti-realist to regard those aspects of classical logic which resist elucidation in terms of his favoured substitute for classical semantics as independent and explicit conventions; whose effect is further to determine the meanings of the logical constants as fixed by the basic explanations—the drills whose import the recursions of an appropriate theory of meaning would aim to codify. It is proposed, in short, that whatever the philosophical defects of realism and of classical semantics, there is no need to seek an anti-realistically acceptable validation for classical logic, nor, therefore, failing to find one, to propose changes; rather, it is open to us to see certain principles of classical logic simply as implicitly definitional of the concepts which feature in them and so as immune to revision or reproach in terms of semantical considerations.

VI

What objections are there to such an approach? In particular, what objections can be elicited from Dummett's writings? There are two principal ones: a worry about *soundness*, and a worry about whether the position does not involve a slide into an (incoherent?) *holism*.

Dummett's occasional remarks about holism¹⁴ are among the least satisfying in the collection. The holist is represented as advancing theses like: there is no mastering a mere fragment of a language, there is no such thing as correct assignment of content to an individual sentence of a language.¹⁵ The possible motivation for the holist stance is not discussed in detail in any of these papers; but it would presumably have to involve the belief that no account can be given of the correct use of a declarative sentence — the conditions under which it might legitimately be held to be true, or false — save by reference to an indefinite number of background assumptions, i.e., sentences held to be true. And to these sentences the same point would apply, so that accounting for the correct use of one sentence would rapidly become a matter of accounting for the correct use of every sentence in the language.

What truth there might be in this idea is a matter of some urgency to understand. In particular we need to be clear whether it really follows that there is no fully understanding a particular sentence outside the context of mastery of a whole language. (What, for the purposes of this point, would be a 'whole language' here? How much of the language of kinetics or the theory of Complex Numbers is part of English? With the meanings of what proportion of, or which, words in the OED must an English speaker be familiar?) The important point for Dummett about the purported corollary, however, is this: someone who endorses it can attach no sense to what otherwise seems a very natural constraint on acceptable systems of logic and mathematics — that they *keep faith with* correct use of the sentences among which they regulate inferences. The holist, Dummett supposes, will not allow that there is, in the relevant sense, anything for logic and mathematics to keep faith with here. For in order for there to be any issue whether or not a particular logic keeps faith with the use of a particular class of sentences, we have to suppose it a possibility that someone who has as yet no grasp of the vocabulary of the logic can nevertheless understand those sentences fully and perfectly. We have to be able to ask whether uses of those sentences regulated by correct inferences in the logic really are *correct*, so it must be possible to understand what correct use of those sentences consists in independently of a mastery of the logic. But that is just to say that it is possible to achieve a perfect understanding of no more than a fragment of the language, which is precisely what Dummett's holist denies.

For the holist, then, the question whether or not a particular system of logic, over and above being consistent, is *sound* — preserves truth, or

¹⁴See especially pp. 134-40, 218-21, 300-305, 309, and 378-9. Also pp. 363-70 of the "Concluding Philosophical Remarks" in *Elements of Intuitionism*, Oxford Logic Guides Series (Oxford, 1977).

¹⁵"On such a [holistic] view, it is illegitimate to ask after the content of any single statement, or even after that of any one theory . . . ; the significance of each statement or of each deductively systematised body of statements is modified by the multiple connections which it has . . . with other statements . . . of our language taken as a whole, and so there is no adequate way of understanding the statement short of knowing the entire language. [A statement's] meaning simply consists in the place which it occupies in the complicated network which constitutes the totality of our linguistic practices" (p. 218). Cf. p. 382, lines 19-22.

inference-independent assertibility, or whatever we take the semantically central notion to be — fails of full intelligibility. On a molecular view of language, in contrast, it has to make sense to ask whether new uses of sentences, which become possible when a fragment of a language is extended in a certain way, fit the meanings previously assigned to those sentences. A good illustration is provided by Dummett's example of the people who count as we do but have as yet no other arithmetical operations (pp. 173-5). These people will possess certain observational criteria for judgements of the form, 'X miscounted'; but if we now teach them to add and subtract, there will be a new range of cases in which they will be prepared to make judgements of this type: cases where, without observing any particular error in counting, they now assert that an error has nevertheless occurred just on the basis that a pool of results does not "total up" properly. Now, on the molecular view, the issue of soundness here arises, to take just one example, in the form of the question: is it or is it not a possibility that, notwithstanding the arithmetically discordant character of a set of results, no error in counting — nor shift in the size of the groups of objects being counted — has occurred? Only if the answer is 'no' is the set of techniques which we have taught these people sound, and the extension of the range of uses of judgements of the form, 'X miscounted' which they have come to accept a *conservative extension*¹⁶ of their previous practice. (Our natural belief, of course, is that our arithmetic *is* in this way sound, that its necessity, and utility, both reside in its fidelity to the meaning of numerical expressions as fixed by counting and observation.)

So far as I can see, the type of holism just adumbrated would simply have to reject this example as misconceived. If our language is (in a sense that now needs explaining) richer than that of Dummett's people, it simply makes no sense to suppose that there is a coincidence in meaning between a fragment of their language and a fragment of ours. For there will be no accounting for the correct use of the relevant numerical fragment of our language save by reference to the whole language in which it is embedded; and the same will go for the relevant numerical fragment of their language. So the example cannot be used to subserve the intelligibility of the question whether our techniques of addition, etc., conservatively extend their use of sentences in the relevant fragments of their language.

Holism, then, has no motive for an interest in soundness. But a demonstration of soundness surely is the motive for seeking an interesting and philosophically respectable semantics for a logic. So holism has no motive for seeking an "interesting and philosophically respectable" semantics. What is not clear is whether Dummett is right to assert the converse: that the stance of disavowing semantical foundations for logic — that is, foundations designed to explicate the validity of all schemata deemed to be valid — must, in the end, inflate into holism (p. 218). How, in particular, would the anti-realist sympathiser who proposed to regard otherwise inaccessible classical postulates, like excluded middle, as implicitly definitional of the relevant connectives have committed himself to a holist view?

Part of Dummett's idea here may be this: that if no semantical evaluation of a particular schema is sought, if it is simply laid down, then there is no giving any substantial account of its content; it will function purely, as it were, as an *inferential mechanism*. If we simply lay it down, for example,

¹⁶This adaptation of the technical proof-theoretic notion is Dummett's; see pp. 221-2, 302, and 315-7.

that 'A or not-A' is always validly assertible, we have, to be sure, done enough to enjoin a certain pattern of use; but we have done nothing to say what 'or', in this case, *means*. If disjunction is explained as in (D), then the content of the assertion of 'A or B' is seemingly clear: it is that our total state of information justifies the assertion of one of the disjuncts in particular, or that it can be recognised to be capable of effective enlargement into such a state of information. But this is not what we are saying when we assert 'A or not-A' on the view that allows it to be a special case; and there then appears to be no prospect of an account of what we *are* saying. But, on any molecular view of language, it has to be possible to give some sort of account of the content of any particular assertion; so the proponent of the implicit-definition view must either climb down or sever links with molecularism. Only holism can supply a framework within which the impossibility of giving an account of the content of a particular assertion is not immediately sufficient for the conclusion that we do not genuinely understand it.

It needs examination, however, just what sort of *account* of the content of an assertion it is proper to request on any view, molecular or holist. First, as noted earlier, it cannot be right to think that the assertibility-conditions theorist can regard the content of an arbitrary statement as being that conditions justifying its assertion obtain. His claim is, to be sure, that grasping the content of a statement is grasping its assertibility-conditions; but this cannot be held to imply the former idea unless he is to be committed to the absurdity that no justified assertion can ever be *revised* as new information becomes available. It is true that the *sentence*, 'our present total state of information justifies the assertion that S', for example, will change in status; but that is not good enough since, on any plausible view, it expresses distinct statements at different times. It will not do, therefore, to assume that the content of "orthodox" disjunctions, whose use is explained along the lines of (D), can be taken to be immediately unproblematical—at least, if the thought is that, by offering (D), we have directly specified what they state.

Second, we cannot expect, obviously, to be able in general to state the content of a particular assertion without using the very same sentence to do so, and without recourse to another language. So there must be some sentences for whose assertoric content the best we can do by way of an account, unless we are satisfied to stop with a "homophonic" description, is to characterise their use. It therefore needs a special argument why an account which, for example, appends to (D) the clauses:

'... or (d) B is the negation of A, or (e) B is a consequence of the negation of A'

is insufficient to confer content on assertions of the form 'A or not-A'—supposing it succeeds, of course, as a characterisation of the use of disjunctive statements in general.¹⁷ *Truth and Other Enigmas* contains, so far as I have been able to determine, the basis of no such argument.

¹⁷An immediate doubt on this score is occasioned by the impredicative play made with the notion of *consequence* in clause (e). But we are justified, I think, in making no attempt to allay this particular doubt here, not because the problem is not very real but because it already infects in any case both the intuitionists' explanations of the connectives inside mathematics and our generalisations of them. (C), for example, appeals to the general notion of what it is for a state of information to justify the assertion of A—where A may be a statement of *any sort*; but if that notion may be presupposed, what need of (C)? The remedy, if there is one, has to lie in the availability of a base class of atomic statements whose assertion conditions and consequence relations

VII

Let us try a different approach. Reflect on the generalised anti-realist accounts of the logical constants mooted earlier and the rule of disjunction elimination. Suppose we are in a position to assert an "orthodox" disjunction, ' $A \vee B$ ', and to assert the conditionals, ' $A \rightarrow C$ ' and ' $B \rightarrow C$ '. Then the situation will be that we either are already in, or have recognised that we can effectively achieve, a total state of information in which we are entitled to assert A , or B , in particular; and that we have recognised that such is our present total state of information that any transformation of it into one justifying the assertion of A will succeed in transforming it into one justifying the assertion of C — ditto for B . It follows that we either are already in, or can effectively achieve, a total state of information justifying the assertion of C ; and that this will be a state of information whose justification of the assertion of C could be recognised by someone who overlooked its justification of the assertion of ' $A \vee B$ '. Of course, in a particular case such an oversight might be hugely implausible; but the important point is that such are the explanations being proposed of ' \vee ' and ' \rightarrow ' that inferences from assertible premises via disjunction elimination are constrained to lead only to conclusions whose justified assertibility is recognisable *independently of their so following*.

That is an informal illustration of how constraining a logic by a respectable semantics promotes soundness. But contrast what happens if, following the implicit-definition anti-realist, we let the constraint go. Now a disjunction, ' $D \vee E$ ', can be justifiably assertible without our having any reason to think that our total state of information can be developed so as to justify assertion of either disjunct in particular; so even if we are in a position to assert both ' $D \rightarrow C$ ' and ' $E \rightarrow C$ ', we have no guarantee that a state of information can be achieved of which someone who had overlooked the possibility of the inference from ' $D \vee E$ ' could recognise that it warranted the assertion of C . But that is just to say that certain grounds for asserting C — grounds which do not connect merely contingently, or symptomatically, with the justified assertion of C — may not be appreciable by someone familiar with every non-inferential type of ground for asserting it.

This possibility cannot be straightforwardly seen as that of *unsoundness* unless we take it that the content of an assertion of C is that non-inferential, or other canonical, grounds for its assertion are realised — which, as just noted, is not a view which it is open to the anti-realist to take. (At least, not outside mathematics; it is, obviously, different with the sort of permanent, indefeasible verification afforded by a valid proof.) But does this possibility entail that the content of C can no longer be accounted for by a molecular view of the language in question? What is clear is that, under these circumstances, no one can be a master of the full range of conditions which justify assertion of C who is not an explicit master of a certain amount of the vocabulary and practice of logic; otherwise he will not be aware of the conventionally acceptable status of ' $D \vee E$ ', or of what can be done with it. So it appears that any adequate training in the use of C , and of other statements in the same situation, is going to have to advert to the relevant aspects of *inferential* practice. That, however, is a far cry from saying that

may be taken as clear, and to which our explanations of the connectives may be applied, one by one and in endless rotation; so that a predicative account is always available of the assertion conditions and consequence relations of the statements so far accumulated at any stage in the resulting hierarchy.

the only adequate training in the use of C must be one which encompasses the use of the whole language.

The essence of the molecular view, as Dummett characterises it,¹⁸ is that mastery of a language can be acquired piecemeal, not just in the sense of permitting division into stages but in the sense that, at each stage, competences will be possessed which are, in a certain sense, *complete* at that stage — which continue unmodified into subsequent stages. Why should the idea that certain truths of logic have a primitive, postulational status be inconsistent with this picture? What the implicit-definition view may be inconsistent with is the capacity of any particular class of non-logical statements, among which the postulates in question mediate possible inferences, to determine a possible molecular stage *by themselves*; but that is not to say that there can be no such stages — it is merely that every molecular stage must involve a logical competence.

In essentials, all that is entailed in taking 'A or not-A' as a postulate is that every statement becomes assertible in certain circumstances in which its double negation is assertible. (For, whenever we can prove a statement, C, by means of a disjunction-elimination on excluded middle, we can prove its double negation independently using just the conditional rules and *reductio ad absurdum*.) Now consider any language for which an assertibility-conditions semantics is correct whose effect is to open up, for certain statements, a possible hiatus between conditions warranting the assertion of their double negations and conditions warranting the assertion of those statements themselves. The question is: if a molecular view of such a language is possible at all, how would it be compromised if the language were altered merely so as to obliterate this hitherto recognised distinction? From now on each statement is, if necessary (that is, if it is not effectively decidable), to be broadened in sense in such a way as to embrace among its own assertibility conditions those formerly of its double negation. There might be all sorts of things to be said against such a change, so all sorts of reasons why *we*, if the postulational view gives a correct account of our acceptance of classical logic, would do well to move in the direction of something more sensitive. But our present concern is only whether anti-realism makes such a move mandatory, with holism as the only saving option. And the answer, it appears, is 'no' — unless a language of which a molecular view is possible can be transformed into one of which it is not, merely by stipulating that the conditions of correct use of two hitherto non-equivalent types of expression shall henceforth coincide.¹⁹

¹⁸See pp. 222-3, 302, 304-5, 317-8, 378-9.

¹⁹As John Skorupski has pointed out to me, there is a *prima facie* powerful objection to the suggestion that (D), supplemented by (d) and (e), and (N) might rival their classical truth-conditional counterparts as explanations of our, apparently classical, logical practices. For, in the presence of the rule of *Modus Tollendo Ponens*, their conjoint effect would appear to be too *permissive*: if (N) is a correct account of our understanding of negation, and if the status of excluded middle were simply that of explicit convention, then we ought to be prepared, in the presence of MTP, to assert any statement P *wherever* we have adequate grounds to rule out our achieving a state of information which would entitle us to rule out acquiring justification for the assertion of P. Why, then, are we not prepared to advance the claim that there exists intelligent anthropoid life outside this galaxy purely on the basis of the case for its double negation made in §IV?

Evidently the problem is not special to (N) but will arise for any anti-realist account of negation sufficient to generate a *prima facie* doubt about the unrestricted validity of double negation elimination. Thus, if the "straightforward clauses" anti-realist winds up revising classical logic, the "implicit definitions" anti-realist winds up saving classical

VIII

Let us conclude by reflecting on the appeal which Dummett makes in this context to the notion of soundness, and to cognates like "conservative extension".

As noted, the motivation for the sort of semantical foundation for logic which the classical and intuitionistic approaches illustrate is to ensure that logic is faithful to the understanding which we have of the statements to which it is to be applied; the explicit vocabulary of logical inference, and of mathematics, is always to extend conservatively any language game to which it is added. The sort of holism adverted to by Dummett cannot, we noticed, find room for such a requirement; but, if the gist of the preceding section is correct, then to waive the requirement need involve no commitment to holism. There are, however, certain independent doubts about the status of the ideal of soundness which Dummett does not consider. And unless the ideal is in good order, there would obviously be no point in taking steps to promote its realisation — the central motive for the sort of philosophically inspired revision of classical logic which the intuitionists proposed would be inapposite. That is not to say that there could be *no* respectable philosophical motive for wanting the sort of harmony and simplicity of semantic theory and inferential practice which the classical and intuitionistic approaches essay. But it is a development which would take us closer to the later Wittgenstein's idea that philosophy can only expose error in *philosophy* — in the pictures and lay-philosophical conceptions with which we envelop aspects of our linguistic practice. It cannot show aspects of that *practice* to be mistaken, though it may provide motives of a different kind for revision of it.

We have to put on one side, of course, the case where the ideal is clearly violated: that of systems of inference which permit the derivation of mutually inconsistent statements from a consistent pool of premises. Clearly, provided only that we have assigned a coherent meaning to the statements in question, no such system can be seen as conservatively extending their use. But the sense which the ideal gets from this case is not, of course, germane. For what is to be avoided — what a philosophically well-founded semantics is supposed to ensure avoidance of — is an unsoundness that need not be reflected in inconsistency. From the point of view of an anti-realist who espoused an assertibility-conditions conception of meaning, what was to be avoided would be this: that from warrantably assertible premises conclusions could correctly be drawn for whose warranted assertion no other ground could be given and which deserved rather, on independent grounds, to be denied. In particular, if we are concerned with statements to which observational grounds of assertion have been assigned, what has to be avoided would be the correct derivability from observationally warranted premises of a conclusion for

logic at the price of misdescription of our conception of the assertibility-conditions of a large class of statements not effectively decidable.

The point is well taken as far as it goes, but not decisive. The "implicit-definitions" anti-realist can be convicted of misdescription of our linguistic practices only if our dispositions to assert are a function *purely* of the assertibility-conditions of a statement and are subject to no other (pragmatic) constraints. But that conditions obtain which *justify* assertion of a particular statement is unlikely to prove sufficient *tout court* for its assertion being deemed *appropriate*. The shift to an assertibility-conditions account of meaning does not squeeze out all space for the distinctions which Grice has taught us to draw. The topic is a large one, crucially important to the question whether realist conceptions can have a distinctive linguistic manifestation. We cannot pursue it further here.

whose assertion no warrant in observation could be found. The question is: could we ever *recognise*, inconsistency apart, that that was the situation which we were in?

Consider again Dummett's people who count as we do but do not add. Suppose they prove poor pupils: our best efforts to teach them systematic addition, multiplication, subtraction and division among zero and the positive integers are largely unsuccessful. But they do learn a number of explicit arithmetical equalities, conformity with which they now treat as necessary if counting is to be adjudged correct. So, bad pupils though they are, they will still be, as envisaged, on occasion prepared to say, 'I must have miscounted', or 'the size of the group must have changed', not because they have any directly observational grounds for saying so — the kind of ground they respected before and which we share with them — but because arithmetical rules which they have come to accept are infringed. But suppose that, as a result of who knows what misunderstanding, these people come to accept the rule that $17 + 29 = 45$. So if one of them correctly counts a mixed bag of hazelnuts and walnuts, finding 17 of the former and 29 of the latter, he will conclude, without counting, that there are 45 nuts in all — a judgement for which, in our view, no satisfactory observational warrant can be found.

In our view, the fragmentary, asystematic arithmetical rules on which these people have alighted are, in just the intuitively relevant sense, unsound. They permit the derivation from independently acceptable premises of conclusions with no independent warrant — indeed, for whose denial independent warrant can be found; for meticulous counting of the whole bag of nuts is going to yield, we are confident, the result 46. But what, exactly, entitles us to this point of view? For we have no *guarantee* that if all the nuts were counted — first the two separate groups and then the total — then either the results would "add up" by our arithmetical standards or we should notice a miscount or change in the constitution of the groups. It is, that is to say, a possibility that what we regard as arithmetically discrepant results collectively will *seem*, individually, to have been correctly arrived at. With what right do we claim that if things seem to go contrary to our arithmetic they cannot really be as they seem, so that independent observational warrant *must* emerge, if matters are sufficiently painstakingly examined, for any arithmetical conclusion correctly drawn by the lights of our arithmetic from premises for which there is such a warrant?

We are able to recognise, as we suppose, the unsoundness of these people's fragmentary arithmetic because it is inconsistent with our own. Which — of course — we know to be sound. So, we want to say, where results seem to go against our arithmetic, it cannot be that they really do so; and some hypothesis along the lines, 'I must have miscounted', 'An extra nut must have been smuggled in', etc., serving to dissolve the appearance of conflict, must be correct. So things were not as they seemed to be observed to be: it may have seemed as if all the counts were correctly conducted, that no nuts were smuggled in or out, etc., but it was not *really* so; and sufficiently painstaking observation would have revealed how it was, in particular, not so. But Dummett's people, in contrast, will rest content with their results in situations where *we* propose such a hypothesis — and will propose such hypotheses in situations where *we* rest content. And because of the strict *indefeasibility* of such hypotheses, occasioned by their open existential character, there will be no decisively proving the proposers wrong; indeed they may, in any particular case, be right.

Before they had any arithmetical rules, these people will have had no criterion for the occurrence of an unnoticed error or other peculiarity in a count, save that someone else did notice it and reported as much; but now they will be in a position to say, groundlessly as it will likely seem to us, that *everyone* is overlooking something; just as we are. It is, that is to say, an aspect of the role of our logical and mathematical principles of inference to determine successful negotiation of the transition between appearance and reality, to determine when appearance must be discounted. The very idea, then, that our arithmetical rules are *sound*, whereas those of these people are not, embraces a commitment to the conception that the class of circumstances in which appearance should be discounted is in no sense a conventional notion, or one relative to a "conceptual scheme". Our arithmetical laws, our principles of inference in general, if sound, *get these matters right*; when inferential discord bids us reassess premises and conclusion, we can take it that our previous assessment really was mistaken; that, supposing we are concerned with, broadly speaking, statements assessable by observation, things really occurred which we overlooked. Notwithstanding the infeasibility, case by case, of the "saving hypotheses" which users of an unsound arithmetic, or logic, will advance, sound principles of inference enjoin the proposal of some such hypothesis only when it is really true, or independently warrantably assertible. So Dummett's people will be in the position of taking as veridical observations which are not so; and of discounting as spurious observations which are correct.

Now, what should be borne in mind at this point is that the concern with soundness was to be an anti-realistically possible concern; for it was to motivate the sort of systematic non-transcendent semantics which led the intuitionists to revision. A prospective tension, therefore, opens up in the following way: the anti-realist, following Dummett, has to be able consistently both to disavow the intelligibility of verification-transcendent truth and to affirm the intelligibility of the idea that there is a determinate objective class of situations in which things are (or are not) as they seem; a determinate objective class of situations in which warrant for a particular assertion cannot (or can) be overturned, no matter how, if a (sufficiently) painstaking investigation is carried out. For if there is no such determinate, objective class, how can the conclusion be avoided that it is only from *our* point of view that the saving hypothesis proposed by Dummett's people, or their contentment with a particular series of results, can be seen as mistaken? Whereas they are to be wrong not just from our point of view but *absolutely*. If these ideas are not to be inconsistent, the objective distinction between the two classes of states of affairs must not be a transcendent one. So we are owed an account of how we can recognise, or at least be justified in claiming, that a particular state of affairs comes on one side of it or that it comes on the other; where, to stress, what is to be accounted for is not how — by reference to what criteria — *we* are accustomed to determine a situation to be of one sort or of another, but how we are to recognise the *adequacy* of the criteria which we in fact employ. Nowhere in Dummett's writings is there an attempt at such an account.

There is, however, a natural response. If we focus once more on the example of elementary arithmetic, and ask, what *is* the source of our confidence in its soundness, the answer has to be: the susceptibility of its equalities to *proof*; if concord, or discord, with our arithmetic is one of our criteria for working the appearance/reality distinction, we recognise the adequacy of the criterion — if recognise it we do — by proving arithmetical equalities.

This, by hypothesis, Dummett's people will not be able to do. It is the proof of $29 + 17 = 46$ which brings it out that, the attitude of these people notwithstanding, their contentment with the results, 29, 17, 45, is misplaced; that if they investigate, or had investigated, sufficiently carefully, they would have turned up something which *they* would have regarded as invalidating their results.

Dummett complains (pp. 173 and 301) about the mysteriousness of the later Wittgenstein's conception of logical and mathematical proof, that a proof induces us to make a certain "decision", to relate concepts in certain ways which were hitherto not so related. But the depth, on the present suggestion, even of what we ordinarily regard as trivial pieces of mathematics, like arithmetical sums, is really no less mysterious; for the suggestion implicitly takes it that we can confer a meaning upon signs in such a way that the question whether they are correctly used in a particular situation is settled just by that meaning and the character of the situation, and is independent of our reaction to it. Just that is what is involved in the conception that Dummett's people, on occasion, are simply, if indefeasibly, mistaken in advancing a particular saving hypothesis. The assumed depth in our arithmetic is located at this point: arithmetic puts us in a position to recognise that, however convincing a series of counts may seem to be, either they were not all correctly arrived at or there was some kind of instability in the objects being counted; arithmetic puts us in a position to apprehend aspects of the correct use of certain signs which, however operationally skilled in their use, we would, if computationally virgin like Dummett's people, have been likely to overlook.

Whatever prevents our mythical people from cottoning on to arithmetic, it is hardly deniable that we too have certain limitations — if only of time, intellect and will. So how can we block the corollary that there may be certain aspects of the correct use of our signs which are opaque to us in turn, statements fidelity to the meaning of whose constituent terms requires their acknowledgement as correct, but which we shall *de facto* never be in a position to acknowledge as correct? Of course, this is an idea which we might have been inclined anyway unthinkingly to accept. But the requisite notion of objectivity of meaning gets virtually no attention in Dummett's writings. What is involved is neither more nor less than that it is fixed and predeterminate, and in no sense conditional upon our ratification, what use in a new context of an expression accords with our previous use of it, or of its constituents. It seems to me far from obvious that this idea can be satisfactorily explained without reinvocation of the transcendent objectivity whose intelligibility the anti-realist repudiates.

Where the requisite notion of objectivity does come in for critical attention is in Wittgenstein's later writings, particularly in the discussion of following a rule in the *Investigations* and in the *Remarks on the Foundations of Mathematics*. Dummett's thought on the philosophy of language is, for all its striking originality, redolent simultaneously of the influence of two very opposed sources: Frege and the later Wittgenstein. But he makes nothing of Wittgenstein's thought on this topic.²⁰ And the possibility seems to me still to be open that Dummett, at least when wearing his revisionary anti-realist hat, has essayed to occupy an incoherent middle position be-

²⁰Equally surprising, for all that he canvasses the prospect of taking conditions of warranted assertion as the central notion in the theory of the meaning of declarative sentences, Dummett makes nothing of the later Wittgenstein's notion of *art, criterion*.

tween those of his two great luminaries. This is not because his anti-realist ideas lead in the direction of a more radical revisionism than those of the intuitionists (though there is a powerful case for thinking that, if allowed to be revisionary at all, they do²¹), but because the explanation of why these ideas should be revisionary at all appears to need appeal to an objectivity of meaning to which the anti-realist's entitlement needs making out. If holism can make nothing of the possibility of consistent but unsound principles of inference, no more can anyone who does not believe that, in conferring meaning upon a sign, we thereby create indefinitely many never-to-be-ratified facts about its correct use.

★ ★ ★

Dummett's essays make a splendid book. There is stimulus and illumination throughout, and the effect of the work as a whole is to set up what promises to be one of the most fruitful philosophical research programmes of this century. At the end of the 1972 postscript to "Truth" (p. 24), Dummett complains that very few people seem to be thinking along the right lines about the issues concerning realism which have most exercised him. It is to be hoped that, if he would still make that complaint, the publication of *Truth and Other Enigmas* will speedily render it unjustified.

University of St. Andrews

²¹See pp. 248-9; pp. 123-128 of my *Wittgenstein on the Foundations of Mathematics*, (Duckworth, 1980); and my "Strict Finitism", forthcoming in *Synthese*.