The source of the concept of truth

MICHAEL DUMMETT

Hilary Putnam began his 1976 John Locke Lectures on “Meaning and Knowledge” by observing that “the nature of truth is a very ancient problem in philosophy”. It is certainly a problem that has greatly preoccupied Putnam himself; in my opinion, he is an outstanding member of that minority of philosophers who have grappled with what makes the problem so intractable. It is not this problem that I intend to address in this essay, however, but, rather, an antecedent question, namely: how do we ever come by the concept of truth?

If the concept of truth is as central to the content of a thought as Frege maintained, and as Wittgenstein, after him, maintained in the *Tractatus*, how is it that there is uncertainty about its application? The most striking example of such uncertainty is the still unresolved question concerning the truth-conditions of indicative conditionals of natural language. For Frege, for the *Tractatus* and, indeed, for Davidson, any difference about the conditions under which a statement should be accounted true must reflect a difference in the interpretation placed upon it, or in the thought it is taken to express. Yet, surely, the philosophers who engage in disputes about indicative conditionals all understand such conditionals in exactly the same way; what they disagree on is how the concept of truth ought to be applied to them. How, if Frege and the rest are right, could any uncertainty arise about this, given agreement in practice about what the conditionals mean?

Only the boldest of philosophers – Ryle, for instance – have attempted to resolve the problem of indicative conditionals by denying that they admit assessment as true or false at all; but this has been a thesis frequently advanced concerning other large classes of utterances that we should normally classify as statements. There is, however, an important distinction to be made between such claims, according to whether the utterances of the given class are admitted to be informative or not. A straightforward emotivist account of ethical statements, for example, does not allow any informative content to such an utterance as “Rape is wicked”: according to it, such an utterance merely registers an
attitude that the speaker has to rape. By contrast, Hilbert’s way of construing arithmetical propositions involving quantification over all natural numbers concedes to them a great deal of informative content: it merely denies that they are statements assessable as true or false. Suppose that “A( )” is a decidable predicate of natural numbers. For any particular natural number, say 103, the proposition “A(103)” is then uncontroversially an informative statement. The existential proposition, “For some n, A(n)”, is taken by Hilbert to be an incomplete communication of any particular such instance: one is entitled to enunciate it if one knows of any specific number of which one can show that it satisfies the predicate “A( )”. So understood, the utterance of an existential proposition obviously conveys information: there is no specific statement that one who accepts the utterance as justified is in a position to assert, but the justification requires the speaker to be in a position to assert some one of an infinite range of informative statements. The same holds good, on Hilbert’s account, of the utterance of the free-variable form “A(x)”, or, what is the same, of the form “For every n, A(n)” with an initial universal quantifier. Such an utterance is justified if the speaker has an effective means of arriving, for any given natural number n, at a proof that it satisfies the predicate. We can view this as another kind of incomplete communication. Someone who cited a specific effective means of finding a proof of each instance of the proposition would be making a particular kind of informative statement, even if it should be classified as a metamathematical statement rather than an arithmetical statement proper. One who merely enunciates the universally quantified proposition is making an incomplete communication of such a metamathematical statement. Here the informative character of the utterance is even less in doubt, since one who accepts the utterance as justified is now in a position to assert each of infinitely many arithmetical statements, namely the instances of the quantified proposition.

Why, then, on Hilbert’s view, are such propositions not to be classed as genuine statements, true or false? Plainly because the condition for someone to be entitled to make any such utterance is inseparably connected with his own cognitive position: lacking such an entitlement does not provide an entitlement to enunciate any alternative proposition. The mere fact of not being in a position to cite a true instance of “A(n)”, for instance, does not entitle anyone to assert the negation “Not A(x)” of the free-variable statement, which would be tantamount to asserting “For every n, not A(n)”; and likewise, the mere fact of lacking any means of showing, for each n, that “A( )” applied to it, does not entitle one to assert “For some n, not A(n)”. Hilbert assumed
that the sentential operators are to be explained by the two-valued truth-tables: for this reason, an arithmetical proposition involving unrestricted quantification over the natural numbers cannot be subjected to such operators, if the outcome is to be a meaningful statement. Such a proposition is to be explained in terms of what justifies an utterance of it, not in terms of the conditions for its truth and falsity; although informative, it is therefore not a statement proper, and the operations of negation, disjunction and conditionalisation cannot be applied to it.

The intuitionists in effect accepted the Hilbertian characterisation of the meanings of the existential and universal quantifiers, but denied that statements formed by means of them were incapable of being subjected to negation or the other sentential operators. For them, it was necessary only to explain the sentential operators in the same manner, rather than by truth-tables: that is, to give the meanings of the sentential operators by specifying, for each operator, what would justify the assertion of a statement of which it was the principal operator. With all the logical constants explained in this same manner, rather than by a stipulation of the conditions for the truth or falsity of statements involving them, there would be no obstacle to forming by their means statements of indefinitely high complexity.

There are two components of the intuitionists' claim: (1) that an intelligible use of all the logical constants could be attained by an explanation along these lines; and (2) that our existing use of the logical constants ought to be explained in this way, or, at least, (2a) that one of our existing uses of them should be so explained. (1) is incontestably plausible within mathematical discourse; whether it is plausible when extended to empirical discourse is less clear. The case to be made for (2a), when applied to negation, is far from negligible. For a linguistic practice involving the making of claims, to be assessed as justifiable or unjustifiable, rather than as true or false, must still involve a recognition of the incompatibility of claims. The claim to be able to cite a number to which the predicate “A( )” applies is, for example, incompatible with the claim to have a means of showing, for any given number n, that the predicate does not apply to it; and any workable linguistic practice involving the making of such claims must incorporate a recognition of this incompatibility. For this reason, such a practice has, as it were, a place already prepared for the introduction of a non-classical negation, according to which the negative utterance “Not B” expresses a second-order claim to be entitled to make a claim incompatible with the claim that would be made by the utterance of “B”. Such a negation would easily be recognised as having the characteristics of intuitionistic negation. For instance, it would easily be seen that “Not: for some n, A(n)”
was equivalent to “For every \( n \), not \( A(n) \)”; but that from “Not: for every \( n \), \( A(n) \), “For some \( n \), not \( A(n) \)” would not follow.

For the present, however, this is a side-issue: our immediate concern is with the picture of the genesis of the concept of truth supplied by Hilbert’s discussion of the quantifiers. The concept of truth is born from a more basic concept, for which we have no single clear term, but for which we may here use the term “justifiability”. We have seen that, even if we operate with the classical conception of a large class of utterances that constitute assertions of statements with determinate truth-conditions, we shall still need to acknowledge that not all informative utterances belong to that class. Other informative utterances may be classified, not as assertions of statements, but as expressions of claims: statements are to be assessed as true or false, but claims as justified or unjustified. Such claims are clearly illustrated by Hilbert’s account of arithmetical propositions involving unrestricted quantification. The claim may be justified by the speaker’s ability to cite a true statement from some large range, or by his possessing an effective means of establishing the truth of any given statement from such a range, or, as on the intutionistic interpretation of the conditional, to establish the truth of some one statement, given any means of establishing that of a certain other statement. In these cases, the condition for the justification of a claim has been formulated in terms of the truth of certain statements; but it does not follow that the notion of the truth of a statement is prior to that of the justifiability of a claim, since the conditions could just as easily have been formulated in terms of the justifiability of certain other claims (as the intuitionists would insist that they should be).

From this it is clear how it is possible that a certain form of statement, such as the indicative conditional, should be well understood, and yet disagreements arise about its truth-conditions. What is well understood, and what is sufficient for grasping the use of that form of statement in practice, is the condition for an assertion of it to be justifiable. More exactly, such an understanding of it does not yet require it to be construed as a statement, nor an utterance of it as an assertion, in the strict sense in which the terms “statement” and “assertion” were used above. Such an understanding amounts to a mastery of the use of that form of sentence to express a claim. That does not rule out its being taken as amounting to a statement with determinate truth-conditions, since an assertion is a particular species of claim; but it leaves it open whether it can be so construed, and, if so, what its truth-conditions should be taken to be.

Why, then, if this is how things are, do we need the notion of truth, or that of a statement, in addition to those of justifiability and the
expression of a claim? Hilbert’s treatment of arithmetical propositions once more supplies the answer. We are here setting aside non-informative uses of language, such as questions, requests, commands and so forth, and concerning ourselves only with informative utterances, whether assertions or expressions of claims. To understand the use of a given sentence, considered as used on its own to make a complete informative utterance, we need only consider it as the expression of a claim: we need to know what counts as justifying such an utterance, and we need to know no more than this. If, however, we interpret any of the sentential operators of our language as truth-functional, we shall need to attribute more to the meaning of the sentence than the condition for the justifiability of an utterance of that sentence on its own, if we are to understand the result of applying any such operator to the sentence. For Hilbert, it was just because we can associate with a quantified arithmetical proposition only justification-conditions, and not truth-conditions, that we cannot intelligibly apply negation or any other sentential operation to it. If, then, we have in the language sentential operators which we construe as truth-functional, or as partly truth-functional, we must interpret sentences to which they are applicable as having determinate truth-conditions.

A sentential operator may be called partly truth-functional if the justifiability of an utterance involving that operator requires, for its formulation, mention of the truth or falsity of at least one of its subsentences. An operator’s being taken as even partly truth-functional, in this sense, is sufficient to force us to regard any sentence capable of occupying that position as endowed with conditions for its being true or false.

To speak more exactly, all this has been expressed the wrong way round. The concept of truth is far from being wholly a construct of theoreticians. Philosophers who discuss how the concept should be applied to the indicative conditionals of natural language are engaging in a theoretical discussion: it is just because we do not have any intuitive conception of how it should be applied to them that disputes arise over the matter. The philosophers who engage in such disputes are therefore asking how best the concepts of truth and falsity should be applied to such utterances in order to construct a semantic theory faithful to actual linguistic practice, one that derives the use we make of sentences of our language from a specification of their truth-conditions. But the concept of truth is not an invention of theoreticians: it is an intuitive notion with which we operate in natural language; and our linguistic practice is in part guided by our apprehension of conditions for the truth or falsity of what we say. We cannot be said intuitively to regard any sentential operators as truth-functional, since that is a
theoretical notion: ordinary speakers do not need, and can rarely pause, to ask which connectives yield sentences whose truth-value depends only on those of their subsentences. Still less can we be seen as intuitively regarding particular sentential operators of natural language as partly truth-functional: for this is not even a familiar theoretical notion (and, as such, awaits further explanation). Rather, it is the existing use of certain operators, which we learn as we acquire our language, that prompts us to form an intuitive conception of the truth of sentences to which they can be applied, as opposed to the justifiability of an utterance of such a sentence on its own. This occurs when an operator is used in such a way that the condition for the justifiability of an utterance involving it could not be framed in terms only of the justifiability of certain of its subsentences; we are then compelled to form a pre-theoretical notion of what it is for such a subsentence to be objectively true or false, independently of whether an utterance of it on its own would be justifiable or not.

At least if we subsume tenses to sentential operators, the point is easily illustrated by the future tense. We have two distinct uses of the future tense – what may be called the future tense proper, and the future tense expressing present tendencies. The latter is exemplified by the sentence, “There was going to be a meeting, but it will not now take place”; the former by “They are thinking of cancelling the meeting, but I feel sure it will take place”; to this one might add, “I have said all along that there was going to [or: would] be one”. What establishes the difference between these two uses of the future tense? More precisely, what allows room for a differentiation between them? The use of a simple sentence in the future tense, considered as uttered on its own, could not allow us to discriminate between the two uses: for such an utterance will be justifiable if and only if the tendencies prevailing at the time of utterance are for events to occur as stated. One way of distinguishing, however, is by the behaviour of the associated compound past-future tense “was going to . . .”, which we may view as the result of applying the past-tense operator to the original future-tensed statement. Another way is by the behaviour of a conditional whose antecedent is (tacitly) in the future tense. Usually, the antecedent is taken as being in the future tense proper: in a sentence like “If you go into that room, you will die before nightfall” (which, when translated into Italian, say, would have a future-tensed antecedent), the event stated in the consequent is predicted on condition of the truth of the antecedent (construed as in the future tense proper), not of its justifiability; otherwise stated, on its truth when understood as being in the future tense proper rather than as in the future tense that expresses present
tendencies. But the distinction between the two ways of construing a future-tensed sentence, and hence between the truth and the justifiability of an utterance of it on its own, arises only because of the behaviour of more complex sentences formed from it: conditionals of which it is the antecedent, and sentences with compound tenses.

This thesis must be distinguished from a related one for which I argued in my article of 1959 on “Truth”. There I claimed that the rationale for recognising certain forms of sentence as violating the principle of tertium non datur rested solely on the behaviour of such sentences as subsentences of complex ones, never on the use of them when uttered on their own. This is to say that, given concepts of truth and falsity, the incentive for regarding certain sentences as being, in certain circumstances, neither true nor false is always to achieve a means of systematising their behaviour as constituents of more complex sentences, usually by a tacit or explicit appeal to a three- or other many-valued semantics. Here I am making a stronger claim, namely that the very concept of the truth of a statement, as distinct from the cruder concept of its justifiability, is required only in virtue of the occurrence, as a constituent of more complex sentences, of the sentence by means of which the statement is made.

Which operators compel us in this way to replace the conception of justifiability by the more refined concept of truth? “And” plainly does not: the linguistic effect of uttering a conjunction of two sentences is barely distinguishable from that of uttering the two sentences in succession, each as a complete sentence. “Or” is a more promising candidate, but by no means a compelling one. Certainly, its ordinary use in natural language could not be captured by a straightforward intuitionistic explanation, to the effect that a disjunctive utterance “A or B” is justified just in case either the utterance of “A” or that of “B” would be justified; but a more complicated explanation might be given without appealing to the concept of truth. We must first recall that a non-classical negation can readily be introduced in terms of justifiability alone. The utterance of “A or B” may now be thought of as expressing a conditional claim to be able to justify the claim “A”, given a justification of “Not B”, or, conversely, to justify the claim “B”, given a justification of “Not A”: this is, in effect, to take the logical law modus tollens as giving the basic meaning of disjunction.

Given such an argument for dismissing the claims of the connective “or” to prompt us to recognise the concept of truth in addition to that of justifiability, it would seem natural to dismiss the claims of the connective “if” on similar grounds. It lies to hand, after all, to explain “if” in intuitionistic style: the utterance “If A, then B”, so understood,
would express a conditional claim to be able to justify the claim “B”,
given a justification of “A”; this would be to take the law modus
ponendo ponens as giving the basic meaning of the conditional. The fact
is, however, that such an explanation would signally fail to fit the use of
“if” in natural language.

Some may feel sceptical that there is any such difference between
“or” and “if”, as used in natural language; and it is not a major part of
my thesis that there is. If someone accepted the general lines of my
argument, but held that our use of “or” as effectively prompts us to
form the concept of truth as does our use of “if”, he would do little
damage to the argument as a whole. The interpretation of “or” pro-
posed above in effect equates “A or B” with “If not A, then B, and, if
not B, then A”, understood intuitionistically, a rendering of course
weaker than the ordinary intuitionistic interpretation of “A or B”. On
this interpretation, various statements would fail to be logically true
that are classically so: for instance, “Either for some \(n\), \(B(n)\), or, for
every \(n\), not \(B(n)\)”. It is, however, arguable that the use of the standard
logical constants in natural language embodies a great part, though not
the whole, of classical logic. Perhaps everyday linguistic practice is not
coherent in this regard, that is to say, not systematisable: perhaps
classical laws that would be intuitively rejected as invalid are neverthe-
less derivable from laws that would be intuitively accepted. However
this may be, it remains plausible that the classically valid schema cited
above would be recognised by the speakers of natural language as
logically compelling, and this calls in question the proposed interpreta-
tion of the “or” of natural language.

Such an argument exposes an ambiguity concerning the basis on
which the connective “if” was rated a better candidate than “or” for
being one whose use prompts us to form the concept of truth. We are
seeking to discern the genesis of this concept. The thesis that I have
been maintaining is that, for a mastery of the simplest part of linguistic
practice, a grasp of the concept of truth, however implicit, is not
required, but only of the coarser concept of justifiability; but that the
more refined concept is needed in order to master the use of certain
means of forming complex sentences from simpler ones. The problem
is, then, to seek an understanding of how the use of certain linguistic
constructions forces us to refine the concept of justifiability so as to
arrive at that of truth. It is no part of this thesis that the concept of
truth is spurious or redundant: we really do have such a concept, and
Frege was not far off target in saying that truth and falsity are known,
“even if only implicitly, to everyone who ever makes a judgement”. A
little more accurately, we may say that an implicit grasp of the concept
of truth is required for construing certain utterances as assertions of statements rather than mere expressions of claims.

Now, once we have the concepts of truth and falsity, it is open to us to interpret such a connective as "or" truth-functionally; and it is unsurprising that we should at that stage be disposed to accept logical laws relating to it that are classically, but not intuitionistically, valid. Our doing so will then properly be called part of the practice governing the use of that connective in natural language; but it does not follow from this that it was the use of that connective which originally prompted us to form the concept of truth. Our mastery of common linguistic practice is, of course, acquired in stages. At a stage when we are implicitly operating only with the notion of justifiability, and not yet that of truth, we can, still without needing to form the latter notion, learn enough of the use of "or" to be able to utter disjunctive sentences appropriately, and to respond appropriately to disjunctive utterances of others. At that stage, we shall have only an imperfect grasp of the use of "or" in natural language, but one whose imperfection is unlikely yet to be apparent to us. Only after we have acquired the concepts of truth and falsity shall we be able to perfect our knowledge of the conventional use of the connective "or"; but, despite the imperfection of our knowledge at the earlier stage, it was not our introduction to the use of disjunctive sentences that forced us to form the concept of truth. What forces us to do so is the use of conditionals. Although there is indeed a way of understanding conditionals that can be explained in terms of justifiability, rather than of truth, it does not yield even a plausible approximation to the actual use of conditionals in natural language; and that is why it is their use that forces us to form an implicit notion of truth.

As already remarked, it is of minor importance whether or not I am right to think that the use of disjunctive sentences does not, of itself, have this effect: it is very clear that the use of conditionals does so. A conditional assertion is justified provided the speaker can offer a conditional justification of the consequent, but the condition under which the consequent needs to be justified is the truth of the antecedent, not the existence of a justification for it. We have already seen that this holds good when the antecedent is in the future tense; but it holds equally in all other cases, for example, when the antecedent is an existential sentence. In themselves, existential statements are like disjunctions. The fundamental justification for an existential claim is the ability to cite a specific instance. It is only after we have come to regard existential sentences as carrying truth-conditions and hence as expressible assertable statements that we acknowledge indirect demonstrations
of existential statements; as with disjunctions, this exemplifies the extension of a primitive use by appeal to a truth-conditional conception of content. But a conditional whose antecedent is an existential sentence "For some x, A(x)" cannot be interpreted in terms of the primitive notion of the justifiability of an utterance of the antecedent on its own: to justify the conditional assertion, we must be able to justify the consequent, not on the assumption that we can cite an object of which the predicate "A( )" holds good, but on the weaker assumption that there is such an object, known to us or not.

It is precisely because occupancy of the position of antecedent of a conditional constitutes that context which most clearly demands that a sentence be regarded as having truth-conditions rather than merely justifiability-conditions that it is the context invariably chosen by those, notably Peter Geach, who wish to appeal to the occurrences of sentences of a given class as subsentences of complex ones in order to refute a philosophical thesis that sentences of that class are not even informative. Geach holds that the admissibility of ethical sentences as antecedents of conditionals suffices to disprove the emotivist interpretation of them: according to him, such a sentence as "If lying is wrong, then it is wrong to get your little brother to lie" (his example) would be unintelligible unless the antecedent, "Lying is wrong", were a full-fledged assertoric sentence with determinate truth-conditions. The cogency of this argument is uncertain, since it is open to the emotivist to claim that a non-truth-functional explanation of conditionals of this particular type would be in place: in the present setting, we need note only that the selection of this particular context – as antecedents of conditionals – to be that in terms of which the argument is stated reflects the peculiar power of the context to demand interpretation in terms of truth-conditions.

It is now clear why it is that philosophers, who perfectly well understand indicative conditionals, as used in natural language, nevertheless find themselves involved in disputes about when they are properly to be called "true". The reason is that we possess no intuitive conception of truth for indicative conditionals. And the reason for that is that nothing in our actual use of such sentences forces us to form such a conception; and, more particularly, that we hardly have a use for conditionals whose antecedents are themselves conditionals, that is, for conditionals of the form "If, if A, then B, then C". They are not, indeed, completely ruled out. In particular, if "C" is a logical consequence of "If A, then B", for instance if "C" is "If not B, then not A", such a conditional would be accepted as making an intelligible and correct claim. In general, however, we should attach no clear content to