MICHAEL DUMMETT ON TRUTH

Michael Dummett subscribes to a verificationist[1] theory of meaning for natural language which is a generalisation of the intuitionist's theory of meaning for the language of mathematics. Again he advocates intuitionistic logic which, he thinks, is a consequence of this antirealism, a semantic theory, as described by him. In all of these three different aspects of his philosophy of language [i.e., (a) in the theory of meaning, (b) in logic and (c) in the semantic theory] the notion of truth plays a very important role. Dummett's views in these different fields is ultimately rooted in the notion of truth introduced by him as opposed to the classical notion of truth. There are some serious misconceptions about the Dummettian notion of truth and its place in his philosophy of language which are again roots of many other misconceptions about his philosophy of language. My aim in this paper is to explain what exactly the Dummettian notion of truth is and the role it plays in his philosophy of language.

A popular reading of Dummett's theory of meaning and the place of the notion of truth in it is that Dummett advocates a verificationist theory of meaning - a theory of meaning in which the central place is not occupied by truth but by verification. But we shall see that this reading is suspect.

While criticising the truth conditions theory of meaning (henceforth TTM) Dummett says, "The question before us is whether the concept of truth is the right choice for the central notion of a theory of meaning...."[2]. The TTM in which the notion of truth is the central notion has been vehemently criticised by Dummett. To understand Dummett's real charge against the TTM we should start with what Dummett thinks about the interrelation between the different aspects of the philosophy of language - the theory of meaning (sense), semantics (or the theory of truth/reference) and logic, because the significance

of his charge lies in some results from this interconnection and this interconnection constitutes the background for comprehending the role of truth in his philosophy of language. He emphasises that part of semantics to which he thinks the question of realism is related. So, let us put, very briefly, Dummett's semantic interpretation of it first and then come back to the interrelation between the different aspects of his philosophy of language in the background of which Dummett's charge against TTM can be understood. His critique of TTM leads him to advocate the view he advocates regarding the nature of the notion of truth and its place in his theory of meaning.

Dummett thinks that the term 'realism' is not a blanket term. The question of realism arises only with respect to a given class of something[3], allowing thereby a possibility of one's being realist in one field and not in another which is almost undisputed in recent thinking. The traditional metaphysicians want to regard them as entities and dispute over the question whether or not they really exist in the world. So it may be labelled as 'entity realism'. This class may consist, on this veiw, of material objects, mathematical entities, universals and so on. They used to say that realism concerning a given class of entities is the belief that these objects exist independently of our knowing them. This is a material mode of presenting the matter. The formal mode which is also in vogue is that this class consists of terms. So, realism concerning a class of terms is the belief that the elements of this class have genuine references. Dummett contends that this formulation of realism in both of these modes is inadequate and misleaing. There are some fields where the dispute arises meaningfully but the dispute over realism cannot be formulated in these fields if realism takes the form of entity realism. Realism in morality, realism about the past are among such fields. We cannot conceive of moral entities or past entities which could constitute the references of the terms of the concerned disputed class. Again, there are some fields where the real issue will be deflected if realism is characterised as entity realism, e.g., realism in mathematics and realism about mental states. This critique has been elaborated by Dummett[4].

Dummett prefers to say that the disputed class consists of statements, and not of entities or terms. This, he thinks, enables him to overcome the difficulties encountered by entity realism. He characterises realism as the belief that every statement of the disputed

class is either (determinately) true or (determinately) false (i.e., the principle of bivalence applies generally to these statements). Dummett's formulation of realism may be referred to as statement realism or semantic realism.

We see that Dummett quite significantly characterises realism in terms of the semantic principle that every statement is either true or false. Although in his earlier writings Dummett equates realism with acceptance of bivalence, in his later writings he takes this acceptance of bivalence to be only one of the necessary conditions for realism[5]. Anti-realism is accordingly characterised as the denial of any of the necessary conditions for realism.[5] Since, the principle of bivalance involves the concept of truth, Dummett calls the realism/anti-realism issue a semantic one. The principle of bivalence with respect to a disputed class is a peculiar feature of the classical conception of truth. By 'the classical conception of truth' I mean the Tarskian conception of truth of which two remarkable features are (i) A statement is true by virtue of the things as they are in the world. (ii) Truth is recognition transcendent.

The realist is a propounder of the classical notion of truth. If one is to be a realist concerning a disputed class of statements then one must admit the classical objective truth for the statements of that class. Given a statement A of the disputed class, A is either true or false only if truth neither depends on our recognition nor on our recognisability. One the other hand, to be an anti-realist one must deny at least a particular feature of the classical notion of truth associated with the principle of bivalence, viz., the feature of recognition transcendence. In other words, he must admit a non-classical conception of truth.

Let us now explain, after Dummett, the interrelation between a semantic theory (or a theory of truth), a theory of meaning and logic. According to him, a semantic theory forms the base of a theory of meaning[6]. What shape would a theory of meaning take depends upon the kind of theory of truth which forms the base of it. So the acceptability of a theory of truth depends upon the acceptability of the theory of meaning of which it forms the base. If a classical notion of truth forms the base of a theory of meaning then the theory of meaning may be called a classical truth conditions theory of meaning (henceforth, CTTM). If a non-classical theory of truth, i.e., a theory of truth which does not

capture the classical conception of truth as specified above, forms the base of a theory of meaning then the theory of meaning may be called a classical theory of meaning. It can further be said that if a non-classical theory of truth, where truth is defined in terms of verification/ falsification, forms the base of a theory of meaning then the theory of meaning may be called verificationism/falsificationism. Although from the point of view of constitution the theory of truth leads to the theory of meaning, the acceptability or justification of a theory of truth depends upon the acceptability or justification of the corresponding theory of meaning. Dummett holds that which notion of truth is appropriate for a class of statements depends upon which theory of meaning exploiting a notion of truth explains satisfactorily our understanding of those statements[7]. Thus we see that acceptance of the CTTM leads to the acceptance of the classical conception of truth, and so to that of the principle of bivalence. On the other hand, acceptance of verificationism leads to the acceptance of the non-classical conception of truth and so to the denial of the principle of bivalence, i.e., antirealism. So, Dummett justifies the theory of truth on the basis of the theory of meaning.

Regarding the relation between a semantic theory and logic, on the other hand, Dummett has explicitly stated that acceptance of the semantic principles determines acceptance of the logical laws[8]. Dummett seems to borrow this idea from Frege[9]. He has stated some semantic principles and the corresponding logical laws some of which are given below :

1. Every statement A is either true or false - this semantic principle is called the principle of bivalance.

The corresponding logical law is :

(1') A or not A, in symbols, A v $\neg$ A —this is known as the law Excluded Middle.

2. No statement A is true nor false.

-this semantic principle is called by Dummett the principle of tertium non datur.

The correspondinng logical law is :

(2') It is not the case that neither A nor not A, in symbols, $\neg$ ($\neg$ A V $\neg$ A) —This logical law has been called by Dummett the Law of Excluded Third.

We can note first that there is a use/mention difference in the formulation of a logical law and the corresponding semantic principle. In stating logial laws the schematic letter 'A' has been used while in stating the semantic principles the schematic letter 'A' has been mentioned. However, the important thing in that Dummett centends that acceptance of semantic principles entails acceptance of the corresponding logical laws, but not vice versa[10]. In a semantic theory truth may be defined in such a manner that the principle of bivalence holds. If such a semantic theory forms the base of a theory of mening then the resulting theory of meaning will be the CTTM. The logical counterpart, i.e., the logic determined by this semantic theory will include the law of Excluded Middle. This logic is called the classical logic. Contrariwise, if truth is defined in such a manner that the principle of bivalence does not hold in general, and if such a theory of truth forms the base of a theory of meaning then it is called the non-CTTM. If truth is defined in terms of verification so that the principle of bivalence does not hold in general and such a theory of truth forms the base of a theory of meaning then the resulting theory of meaning is called the verificationist theory of meaning. The corresponding logic does not include the law of Excluded Middle. The logic resulting from the verificationist theory of meaning is, says Dummett, intuitionistic. The interrelation between the different aspects of Dummett's philosophy of language, as explained above, can be represented through a diagram[11].
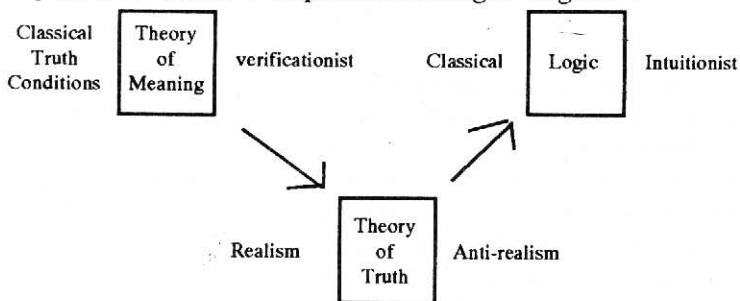
Here '→' designates the order of justification and the visible physical position suggests the order of determination or constitution of the different aspects. Here it is to note that a theory of meaning justifies a theory of truth in the sense that only that theory of truth is acceptable which enables us to construct a right theory of meaning. A theory of truth justifies a logic in the sense that only that logic would be accepted if it is grounded in a right theory of truth.

Now we should come back to the original issue - the notion of truth in the theory of meaning as viewed by Dummett. His view about truth in a theory of meaning has got two parts - the negative and the positive. In the negative part we find some major points -(i) refutation of realism or at least putting realism at stake. (ii) refutation of the principle of bivalence (iii) refutation of the feature of recognition trancendence of the classical conception of truth and (iv) refutation of the classical truth conditions theory of meaning. In the positive part either he replaces truth by verification or he gives a new definition of truth. In the negative part he first proves (iv), then on the basis of it (iii). Here his general thesis is that a semantic theory is justified by the corresponding theory of meaning. Proof of (ii) depends upon the proof of (iii). Here it is presupposed that bivalence is implied only by the classical conception of truth. By definition of realism, (i) is established immediately after the proof of (ii) is given.

(iv) is established with the help of a reductio.

The informal reductio proof

Dummett derives a contradiction from the supposition that meaning is truth condition where truth is conceived classically and that we know the meaning of undecidable sentences in the following manner :

First of all, he takes as a premiss, the truth of which will be proved later, that knowledge of truth conditions of sentences is the ability to recognise that the truth conditions have obtained when they have obtained. The second premiss is that meaning consists in truth conditions. Now, if meaning consists in truth condition and the first premiss is true then to know the meaning of a sentence is to have the ability to recognise that the truth conditions have obtained when they have obtained. In particular, the knowledge of the meaning of an undecidable sentence must also consist in the ability to recognise that the conditions which make it true have obtained when they have obtained. But undecidable sentences are, ex hypothesi, such that we can not recognise that their truth conditions have obtained when they have obtained. This is a fact admitted by the truth condition theorist and so can be admitted as a primiss. So we are to say, on this theory, i.e., the theory that meaning consists in truth conditions, that we do not know the meaning of undecidable sentences. But it is a fact that the

meaning of undecidable sentences too are known by us. This too can be treated as a premiss because it is admitted by the truth condition theorist. Thus, we are to say that we know and do not know the meaning of undecidable sentences which is a contradiction in terms. So, meaning does not consist in classical truth conditions.

In this grgument the crucial point is that knowledge of truth conditions consists in the ability to recognise that the truth conditions obtain if and when they do. Dummett has established it separately. Let us explain this point in some more detail. Dummett holds that CTTM cannot be a theory of understanding, i.e., the CTTM cannot account for the knowledge of truth conditions of all sentences. The recalcitrant set consists of undecidable sentences. For Dummett a satisfactiory theory of meaning is a theory of understanding, i.e., it can account for, among other things, the knowledge of that in which meaning consists of any sentence. But CTTM cannot explain the knowledge of meaning of undecidable sentences. For knowledge may in principle be either explicit or implicit. Knowledge is explicit when the person can state what he knows, i.e., when he can assert some sentences that express the content of his knowledge; and then, of course, it is implied that he knows the meaning of the sentences that he asserts. Dummett thinks that knowledge of truth conditions must be implicit. Since to explain all knowledge of truth conditions as explicit knowledge would necessarily be circular, because any such explanation presupposes what it is to know the truth conditions of some sentences. An ascription of implict knowledge must always be explainable in terms of what counts as a manifestation of that knowledge, viz. the possession of some practical ability. When it is a knowledge of the meaning of a sentence that is in question, the practical capacity which constitutes the knowledge must itself be a linguistic ability. Now, if a person knows implicity the truth conditions in knowing the meaning of a sentence then the practical ability to which this knowledge is correlated would be the ability to decide that the truth conditions of this sentence have obtained, when they have. The undecidable sentences are such that we can never devise any effective procedure for deciding the truth of them. Since we cannot have any practical ability for deciding whether or not the truth conditions of those sentences have obtained in a particular situation, CTTM fails to be a theory of understanding in the case of undecidable sentences.

It is obvious that this failure on the part of CTTM is a direct consequence of a particular feature of the classical conception of truth, viz. the feature of recognition transcendencce which is associated with the principle of bivalence. So, this particular feature of the classical conception of truth is to be rejected, because for Dummett a semantic theory is justified by the theory of meaning of which it forms the base. Thus (iii) is proved. It has already been shown that the principle of bivalence can be accepted only if this particular feature of the classical conception of truth is admitted. Since this particular feature is rejected by Dummett, consequently the principle of bivalence is also rejected. This establishes (ii). Now, since the principle of bivalence defines realism and bivalence fails, realism is refuted or at least realism has been put at stake by Dummett. So (i) is also established.

Thus, we see that Dummett explains the failure of the principle of bivalence on the basis of the failure of CTMM (i.e., the truth conditions theory of meaning of which the classical conception of truth forms the base). This has been possible for him because he thinks that a semantic theory is justified by the theory of meaning of which it forms the base. Consequently, the Law of Excluded Middle cannot be accepted as a logical law in our natural language, since for Dummett semantics determines logic and the Law of Excluded Middle is the logical law corresponding to the semantic principle of bivalence. Dummett's refutation of realism is extremely important because this refutation in its turn suggests revision in the classical logic.

In his earlier writting[12] the arguments for rejecting bivalence were not made explicit. The arguments have been made explicit in his later writings. One of these arguments has already been put forward. Another argument, very close to the one given above, is that if meaning is given in terms of the classical notion of truth conditions then the obvious fact that meaning is always communicable will be neglected. "An individual cannot communicate what he cannot be observed to communicate"[13]. So the meaning of a statement is determined solely by use. But if CTTM is adopted for natural language then meaning and use will be segregated in the case of undecidable sentences. This concludes the negative part of Dummett's view regarding the notion of truth in the theory of meaning.

Before coming to see what Dummett says in the positive part of the view about the notion of truth in the theory of meaning let us now

concentrate on what emerges from Dummett's critique in the negtive part including the possible ways out and the solution actually given by Dummett. Dummett rejects the particular feature of the classical notion of truth which is associated with the principle of bivalence - the feature of recognition transcendence. The most direct argument he has given for rejecting this feature is that the CTTM fails to account for the knowledge of meaning of statements of a kind of the natural language, and so is inadequate. This inadequacy is due to this particular feature of the classical notion of truth. So, he rejects this particular feature of the classical conception of truth. CTTM has got two parts.- (i) Meaning consists in truth conditions, (ii) Truth is classical. It seems that Dummett rejects (ii) but retains (i). It is impossible for Dummett to deny the obvious fact that a sentence is true iff what the sentence means obtains, i.e., the fact that the meaning of a sentence and the condition the obtaining of which makes the sentence true are identical. To quote him: "The sense of a statement is determined by knowing in what circumstances it is true and in what false"[14]. Here by 'sense', which he uses interchangeably with 'meaning', he means the content of a sentence, or more specifically the content of an assertion. We have already seen that among the different features of the classical notion of truth two are remarkable ones: (a) Truth consists in correspondence (b) Truth is recognition transcendent. Of these two, the former is for Dummett unobjectionable[15]. He thinks that the Achilles' Heel in the CTTM is the latter feature of the classical notion of truth, i.e., the feature of recognition transcendence which is associated with the principle of bivalence.

The difficulty in a theory of meaning based on the classical conception of truth arises from the fact that the truth (and truth conditions) of many sentences of our language appears to transcend our powers of recognition. The difficulty can be resolved in at least two different ways. One may retain the concept of truth as it is in the classical thought, i.e., as recognition transcendent but replaces it from the central place in the theory of meaning by some other concept. Another possible way of resolving the difficulty is to retain the central position of the notion of truth (truth conditions specifically) which it has in CTTM but revise the notion of truth as understood classically. It has not been clearly indicated as to which of these two ways has actually been followed by Dummett. There are suggestions in his writings which lead us to think that Dummett favours the former alternative. But a large

number of Dummettian scholars tends to interpret Dummett as subscribing to the latter view for the reasons discussed above. The reasons are: (i) Dummett does not deny, rather defends, that meaning consists in truth conditions; (ii) he rejects the classical conception of truth. Let us quote some passages from the different writings of Michael Dummett : "Realism about a given class of statements.... is thus a thesis about the appropriate notion of truth for such statements ....."[16]. Again, "The solution is to abandon the principle of bivalance...... An understanding of a sentence may now be taken to consist in a knowledge of the condition under which a statement has been conclusively established to be true....."[16a].

The question still remains, on the part of these interpreters, to settle, about the significance of the texts where Dummett categorically dislodges the notion of truth from the central position of a theory of meaning. This problem is resolved in two different manners. Some of these interpreters hold that the texts where Dummett says this represent his earlier view. In his later writings he has changed this view[17]. In his later writings he recognises that in almost any theory of meaning "we can represent the meaning (sense) of a sentence as given by the conditions for it to be true"[18]. The other interpreters contend that these texts only suggest that the classical conception of truth is to be dislodged, not truth simpliciter.

There are at least four possible alternative ways of constructing a theory of meaning: (i) where meaning is given by something other than truth conditions; (ii) meaning is given in terms of truth conditions, where truth is understood classically and undecidable sentences are included in the set of meaningful sentences; (iii) meaning is given in terms of truth conditions where truth is understood classically and undecidable sentences are eliminated from the set of meaningful sentences; (iv) meaning is given in terms of truth cconditions, undecidable sentences are not eliminated from the set of meaningful sentences but truth is not understood classically. Dummett rejects (i) because it is counter-intuitive[19]. The argument for rejecting (ii) has already been given, (iii) is not accepted by him because it goes against the fact that undecidable sentences are meaningful. So, he advocates (iv).

Thus, we see that in the positive part of his view Dummett has retained the central place in his theory of meaning for the notion of truth.

So, even for him the core theory is the theory of truth. The role played by the notion of truth in his philosophy of language is very important. Briefly speaking, it makes his theory of meaning (sense) satisfactory[20], it also makes the construction of a viable theory of force (use) possible although it is not very clear how he proposes to build a theory of force on a theory of meaning. Furthermore, it gives rise to an adequate logic.

Although Dummett has retained the notion of truth in his theory of meaning he has not retained it as it was in the CTTM. We can try to comprehend what the notion of truth is like as understood by Dummett.

First of all, truth is not recognisability transcendent. Every statement of which truth can be predicated is recognisable as true, if it is true. The consequence of this feature is that we cannot accept the principle of bivalenc, i.e., the principle that every statement is either true or false. Secondly, this notion of truth does not allow the possibility of a statement's being neither true nor false. In other words, it admits the principle of *tertium non datur*, viz., no statement is neither true nor false. In his famous essayy 'Truth' Dummett has shown that violation of this principle leads to the violation of the equivalence thesis, viz., that a sentence 'P' is equivalent with the sentence "It is true that P" which he intends to defend because he thinks that if a theory of truth fails to maintain this then it will lead to infinite regress as suggested by Frege[21]. Again it is admitted that a statement is true by virtue of states of affairs[22]. Besides, it is also to be noted that the states of affairs by virtue of which sentences are true are recognisable.

Dummett observes that an intuitionist can develop a theory of truth for the language of mathematics in terms of proof incorporating all of these features. He extends the intuitionist's definitions at truth to the natural language weakening the notion of proof to verification. Dummett has modified the definition of truth through different stages. In his final version he says that an intuitionist can say that a mathematical statement is true iff there exists a proof of it [23]. Here the word 'exist' is to be understood intuitionistically[24]. While giving the final version of his definition of truth he says that an intuitionist need not say that a (mathematical) proposition A is true iff we have proved A. He should rather say that A is true iff we are able to prove A. If there exists a proof for a statement to the effect that we cannot have a

mathematical construction which counts as a proof of it then the sentence is false. The so-called undecidable sentences which we may call undecidable$_1$ are, for the intuitionists really false ones. But we know their meanings, because to understand the meaning of a sentence is to know what counts as a proof of it. We have an ability to recognise such a construction for a so-called undecidable sentence. So, for the intuitionist if a sentence is not true, i.e., if we cannot have a mathematical construction which counts as a proof of it, it is tantamount to its being false. So the principle of *tertium non datur* is preserved. But this notion of truth does not allow the principle of bivalence. Because there are some statements for which we have not yet been able to construct any mathematical construction which counts as a proof of it or under which statements of this kind are assertible. Let us call these sentences undecidable$_2$. So, we cannot say that these statements are true, neither can we say that they are false. Because uptil now we have failed to prove that we cannot have such a construction. Neither can we assert them, nor can we deny them. So, the principle of bivalence does not hold for them. In this context let us take an example considered by Niel Tennant[25]. The example taken by Niel Tennant is Goldbach's conjecture, viz., that for every even number n greater than 2, there are prime numbers p, q such that $n = (p+q)$. We know the meaning of this statement. If a construction is proposed for being considered as a proof of this statement, we can determine whether or not it really constitutes a proof of it; we know what counts as a proof of it. A mathematical construction would constitute a proof of this statement if it provides two constructions of primes p,q such that their addition is 4 (this is the basis); and provides an effective prodcedure for constructing two primes p,q such that their addition is 2k, if two constructions of primes p,q are given such that their addition is $2(k-1)$ Where $k > 1$. But this statement (Goldbach's conjecture) is undecidable$_2$. Neither can we show that such a proof can be constructed nor can we show that it can not be constructed. By this is not meant that it is impossible to prove and impossible to refute it. 'Undecidable' means that we do not at present possess (an effective method for finding) either a proof or a disproof of it. Goldbach's conjecture, though undecidable$_2$, is meaningful. Since it undecidable$_2$, the principle of bivalence does not apply to it, but it obeys the principle of *tertium non datur,* for which the reason is given before.[25a]

Thus, we see that Dummett's notion of truth is not epistemic as it is usually supposed to be, because a statement's being true does not

depend upon a person's kowledge. A statement may be true even if we do not know it to be true. A statement may be true by the existence of a proof of it, a proof which may not be actually known by us. Note that Dummett does not say that a statement may be true even if we cannot know it to be true. Sometimes Dummett hesitates to define truth in terms of the existence of proof. The reason for his hesitation is that to admit the objective realm of proofs would be a betrayal of the principles that lead us to reject the classical truth- conditions theory of meaning in favour of a verificationist one, i.e., it would beg the question. Dag Prawitz removes this hesitation by saying that in the objective realm of proofs there can be no question of the existence of a proof that is not in principle recognizable by us [26]. This is so because a proof is by its very nature something that is related to our recognitional capacities, unlike the classical truth conditions that are understood as possible obtaining although we may be in principle unable to recognise that they obtain.

It is evident from the above exposition that even if Dummett is supposed to say that proof (or verification) is the central notion in his theory of meaning he cannot be said to replace the notion of truth by that of proof, because he defines truth in terms of proof (or in terms of the obtaining of proof conditions). Saying that Dummett replaces truth in his theory by proof is only half of the story. He replaces only classical truth, and not truth simpliciter. So, to say that the central notion in Dummett's theory of meaning is proof or verification in terms of which he defines truth and to say that the central notion in Dummett's theory of meaning is truth which is verificationist are two ways of saying the same thing.

Thus, we can say that it is not quite correct to say that Dummett is banishing the notion of truth from the central place in his theory of meaning. Even in his theory of meaning the notion ot truth occupies the central place. Dummett's charge against the TTM is that here the notion of truth is worngly supposed to be recognition transcendent. Actually the notion of truth is not, says Dummett, recognition transcendent, i.e., the states of affairs, which constitute the content of statements the obtaining of which make them true, are recognisable in principle. Dummett's theory of truth differs from that of Tarski which captures the classical conception of truth to the extent that while Tarski's theory allows the possibility of the states of affairs to be recognition

transcendent, Dummett's theory does not.

If we look at the constraints, as admitted by Dummett, which a satisfactory theory of truth mist satisfy then we will see that one of them is the equivalence thesis, i.e., for any sentence S,S is true iff S. Now the question about the definition of truth as suggested by Dummett is whether it can satisfy this constraint. The final version of his definition of truth is, for any sentence S,S is true iff there exists that which counts as a proof (or verification) of S. In order to say that this definition satisfies the above constraint we have to admit the equivalence "S iff there exists that which counts as a proof (or verification) of S". But this equivalence is suspect even if 'exist' is understood intuitionistically[27].

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Notes

1.   Verification is a generalised concept of the concept of proof in mathematics.

2.   "What Is A Theory Of Meaning? (II)", in G. Evanns and J. McDowell (ed.): *Truth And Meaning*, Clarendon Press, Oxford, 1976, p.75.

3.   This class with respect to which the dispute over realism arises is called by Dummett ' the disputed class'.

4.   Cf. Dummett: "Realism", *Truth and other Enigmas*, Duckworth, 1978 and the preface toit.

5.   "Realism", *Synthese* 52, 1982.

6.   *Ibid.*

7.   See Dummett: "Realism", *The Interpretation of Frege's Philosophy*, Duckworth, 1981 pp. 434-435,446.

8.   Cf. preface to *Truth And Other Enigmas*.

9.   See Dummett: "Realism", *The Interpretation of Frege's Philosophy*, Duckworth, 1981,p.433.

10.   See preface to *Truth And Other Enigmas*.

11.   Cf.(i) Michael Dummett: *Elements of Intuitionism*, Clarendon Press, Oxford, 1977, pp. 370-371.

      (ii) Preface to *Truth And Other Enigmas*, pp. xxviii-xxix.

12.   Cf. "Truth", *Truth And Other Enigmas*, pp.14-15.

13.   "The Philosophical Basis of Intuitionistic Logic", *Ibid*, p.216.

14.   Cf. Truth, *Truth And Other Enigmas*, p.8

15.   "The text describes the principle ....recognisable circumstances determine it true or false" - postscript of "Truth", *Truth And Other Enigmas*, p.23.

16.   See Michael Dummett: 'Realism', *The Interpretation of Frege's Philosophy*, Duckworth, 1981, p. 434.

16a. Dummett: *Elements of Intuitionism*, Oxford, Clarendon Press, 1977. p.375.

17   Das Prawitz: "Dummett On A Theory Of Meaning", Berry M. Taylor (ed.): *Michael Dummett*, Martinus Nijhoff Publishers, 1986.

18.   Cf. Preface to *Truth And Other Enigmas*, p. xxii.

19.   See Note 18.

20.   See preface to *Truth And Other Enigmas*, p. xxiii.

21   cf. preface to *Truth And Other Enigmas*, pp. xx, xviii, xix.

22.   cf. "Truth", *Truth And Other Enigmas*, p.8 and also see note 15.

23.   "Realism", *Synthese* 52, 1982, p.91.

      Elements of Intuitionism, Oxford, Clarendon Press, 1977, p.19.

24.   For the intuitionist "there exists a proof of a mathematical statement" means that a mathematical construction can be given which counts as a proof of it. To know which mathematical construction counts as a proof of a statement is to know under what condition it is assertible. This is, for the intuitionist, nothing but knowing its meaning. So, for the intuitionist, meaning consists in assertibility conditions, or proof conditions. If such a condition obtains or exists (in the intuitionist's sense)

then the statement is true and vice versa. Thus, we see that for the intuitionist assertibility conditions, proof conditions and truth conditions are the same.

25.   Neil Tennant: *Anti-Realism And Logic,* Clarendon Press, Oxford, 1987.

25a   It is important to note that in the case of undecidable$_1$, the intuitionist can give a proof to the effect that no construction can be given which proves it. But in the case of undecidable$_2$, he neither can give such a proof nor can he give a proof to the effect that no construction can be given which disproves it.

26.   "Dummett On A theory Of Meaning", Berry M, Taylor (ed.): *Michael Dummett,* Matrtinus Nijhoff Publishers, 1087, p.154.

27.   This point was raised by my teacher, Professor Pranab Kumar Sen, Jadavpur University, while I was discussing with him about the definition of truth as suggested by Dummett.