Discussion

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Imagine the following situation. The logic of Kitty and the logic of Leo are different: the logical forms of inferences and the logical statements they respectively endorse are different, but the words they use are the same. In particular, the symbols that play the role of logical constants are the same. To simplify our picture we can imagine that Kitty accepts a principle **L** as a fundamental logical law while Leo does not accept **L** as a logical law. **L** might be the rule *ex contradictione quodlibet*, the law of excluded middle, the distributive law, the modal axiom B, the modal axiom 4 or the Barcan Formula.

Can Kitty and Leo resolve their disagreement in a rational way? Is a rational dispute over the validity of a fundamental logical law possible? In his lecture "Logics and Metalogics" Timothy Williamson answers in the affirmative. He says: "We reasonably expect such disputes to be hard to resolve. But they have not been put beyond the reach of reason." (Williamson 2010, p. 7). On this point there is no divergence between Williamson and Michael Dummett. There is divergence, however, about the way in which a disagreement concerning fundamental logical laws can be rationally resolved. A shallow or overly hasty reading of Williamson's 'Logics and Metalogics' might suggest that Williamson attributes to Dummett the following view: i) Leo and Kitty can resolve their disagreement by simply exhibiting a semantic theory **S** in which **L** can be shown to be valid or invalid; ii) the semantic theory should be formulated in such a way that the validated logic of the object-language is maximally insensitive to the logic adopted in the meta-language. I will call the conjunction of (i) and (ii) 'the criticized view.'

Williamson criticizes thesis (ii): "It may be quite unreasonable to demand that friends of [a fundamental logical law **L**] explain why it is valid in the object-language without invoking [**L**] in the meta-language" (Williamson 2010, p. 6). But this is not Williamson's most important point: he also criticizes thesis (i). Thesis (i) is wrong, Williamson says, because "the task for a semantic theory is to explain the semantic facts, given the non-semantic facts. It is not to explain the non-semantic facts, even when they are logical facts" (2010, p. 8) and because "logical principles in general are not metalinguistic in content, and so should not be explained in semantic terms" (2010, p. 25). I will term Williamson's thesis that semantic theories do not provide a way of settling disputes over the validity of fundamental logical laws 'the deep point.' Williamson also advances another argument in support of the deep point. A semantic theory is only a mathematical way of characterising a relation of logical consequence. But the choice between one or the other (mathematically characterized) relation of logical consequence depends on further considerations, which go beyond the semantic theory. What kind of

considerations? Williamson takes as a case study the controversy over the validity of the Barcan formula in quantified modal logic. The formula is valid if we adopt a possible worlds semantics where the domain of quantification is the same for all possible worlds in a model. But the choice between a constant domain semantics or a variable domain semantics "returns us to the metaphysical question of the contingency or otherwise of being" (Williamson 2010, p. 17). The decisive considerations, therefore, are metaphysical considerations solving the problem of whether everything that exists exists necessarily or whether some existing beings are contingent.

My first comment is that the criticized view does not coincide with Dummett's view. Dummett would agree that considerations which go beyond a semantic theory are necessary in order to resolve a dispute over the validity of a fundamental logical law. Dummett would also agree that these further considerations are metaphysical considerations, but he would add that "the theory of meaning underlies metaphysics" (Dummett 1978, p. xl). Williamson quotes a passage in which Dummett does not say that the two participants will resolve the dispute by merely considering a proof within the semantic theory that the disputed law is valid or invalid. Dummett says that a semantic theory as insensitive as possible to the logic of the meta-language is necessary in order that the two participants "*understand* each other" so that "they may find a common basis on which to conduct a discussion of which of them is right" (Dummett 1991, p. 55).

From Dummett's perspective, how should we describe a rational dispute over the validity of a fundamental logical law? Suppose that Leo refrains from endorsing the excluded middle, whilst Kitty thinks that it is necessarily true. The first stage of the dispute might go as follows. **a)** For Kitty the excluded middle is a fundamental logical law. She does not understand why Leo does not accept it unrestrictedly. Therefore the first thing Leo must do is to explain his standpoint. **b)** He can try to explain his standpoint by providing a semantic theory **S**, a corresponding notion of validity and a metalinguistic proof in **S** that the excluded middle is not valid. **c)** The proof should be such that Kitty can understand and accept it. Thus it must be a proof whose result does not depend on refraining from endorsing the excluded middle in the meta-language. A proof which violates this requirement would be useless, because Kitty does not yet understand why Leo refrains from endorsing the excluded middle. The aim of the proof is precisely to make Leo's attitude intelligible to Kitty. So the metalinguistic proof in **S** should be intelligible and valid for both the disputants, despite the fact that they accept different logical principles.

Suppose that Leo succeeds in carrying out the first stage of the dispute. He has explained to Kitty why, if the semantic theory **S** is correct, the excluded middle is not valid. So Kitty has gained some understanding of Leo's view. However, this is

not the end of the story. Now Kitty and Leo have "a common basis on which to conduct a discussion of which of them is right" (Dummett 1991, p. 55), but the discussion has just begun. Williamson is aware that this is not the end of the story, because he writes: "the dispute may thereby evolve into one over the choice of semantic theory" (Williamson 2010, p. 21). But Williamson does not tell us how the story continues according to Dummett.

In this context it is important to note that Dummett denies that a genuine semantic theory is merely a mathematical characterization of a relation of logical consequence. A semantic theory does provide a mathematical characterization of the relation of logical consequence, but that is not all it must do: "for something to be a semantic theory, it is essential that it be at least plausible that it can be extended to a complete meaning-theory for a language, so that it forms the base on which such a meaning-theory can be constructed" (Dummett 1991, p. 81). And it is "the meaning-theory that supplies a rationale for the appropriate semantic theory" (Dummett 1991, p. 78).

The discussion between Kitty and Leo over the validity of the excluded middle can be developed on the basis of the semantic theory, but it must move onto a higher level: the theory of meaning. Leo has provided a semantic theory **S** and Kitty has understood that if **S** is the correct semantic theory, then Leo is right and the excluded middle is not valid. Is Leo right? To answer, one must determine whether **S** is the correct semantic theory for the language. **S** is a correct semantic theory, Dummett says, only if it can be extended to an adequate meaning theory.

The second stage of Leo's argument therefore consists of two steps: **d)** Leo must show that **S** can be extended to a complete meaning theory **M** for the language; **e)** Leo must show that **M** is the correct meaning theory for the language. Clearly (d) would not be sufficient, and the crucial task is (e). The task of showing that a meaning theory is correct is entirely different from the task of devising a semantic theory. A semantic theory is a theory of *logical consequence*. A meaning theory is a theory of *understanding*.

Analogously, suppose that Kitty has provided a semantic theory **T** and that she has proven in **T** that the disputed law is valid. In this case Leo will understand why Kitty treats the excluded middle as a fundamental logical law, but he will not agree with Kitty unless he can be rationally convinced that **T** is the right semantic theory for the language. To be rationally convinced that **T** is the right semantic theory is to see that it can be extended to a complete meaning theory for the language and that the meaning theory is the right meaning theory for that language.

It is now sufficiently clear that Dummett's view is that a semantic theory *alone* cannot settle a dispute over the validity of a fundamental logical law. Dummett's view is different from the view criticized by Williamson. However, Dummett and Williamson differ greatly in the importance they attach to the notions of meaning

and understanding. For Williamson our understanding of logical constants is not problematic: "neither side has much difficulty in understanding what the other is strictly and literally saying" (Williamson 2010, p. 22). For Dummett "any disagreement over the validity of a [fundamental] logical law […] always reflects a divergence in the meanings each attaches to some or all the logical constants" (Dummett 1991, p. 193). The decisive issue for Dummett is whether a meaning-theory of a certain general form gives a correct picture of what it is to understand the language (and in particular the logical constants). This issue depends on whether the meaning-theory satisfies various requirements that a theory of understanding must fulfil, and in particular the requirements of learnability and manifestability. To return to our example, Leo is an antirealist who advocates intuitionistic logic and refrains from endorsing the excluded middle unrestrictedly. He will argue that Kitty's classical bivalent semantics is untenable by maintaining that it cannot be extended to a plausible meaning theory. Leo will challenge Kitty to show that she can give meaning to problematic sentences like 'Jones was brave' in such a way that 'Jones was brave or Jones was not brave' is necessarily true (cf. Dummett 1959). Leo can even use inferences that from his viewpoint are invalid. In the meaning-theoretical discussion between the realist, Kitty, and the antirealist, Leo, the logic used is not necessarily neutral. Dummett's position on this point is unequivocally revealed by his response to an objection raised by Crispin Wright. Crispin Wright (1987, p. 2) objected that the transition from 'we cannot guarantee that p' to 'it is a possibility that non-p' "is intuitionistically suspect." Dummett (1987, p. 230) countered: "The step is indeed intuitionistically invalid; the point of Wright's argument nevertheless escapes me. The inference is needed (if at all) only as part of an *ad hominem* challenge by the antirealist to the realist; since the step is classically valid, and the realist accepts classical logic, he must agree to the possibility."

The discussion, therefore, is rather free, but the disputants should not take for granted and leave unexplained our understanding of linguistic expressions: they must explain what it is to understand those expressions, what it is to know their meanings. This is the task of the theory of meaning. Within the theory of meaning, Dummett thinks, the disputants can resolve their disagreement concerning the form of a correct meaning-theory for a language, thereby determining the correct logic.

Williamson rejects Dummett's idea that disputes over logical validity should be settled by the theory of meaning. I too reject this idea. My reasons for rejecting it can be summarized as follows. A theory of meaning is a theory of understanding. Dummett thinks that a theory of understanding can decide whether a form of inference is correct. This is a reasonable tenet if we believe that logical laws are analytically valid: valid only in virtue of the meanings of the logical constants. But there is a decisive reason for rejecting analyticity: the understandability of a

language does not guarantee its correctness. Cozzo (1994) describes a theory of meaning (centred on a notion called "immediate argumental role") according to which understanding and correctness are two different issues, which should be considered separately (cf. Cozzo 1994, ch.V; 2002, pp. 38–43; 2008, pp. 313–5). To understand a fragment of language is to master its use. But though we know perfectly well how to use a fragment of language, we can realize that it is not rational to use it in the epistemic situation in which we find ourselves. In that situation, for example, we can realize that the language is paradoxical, as Frege did. So, we can reach the conclusion that we ought to abandon the language in question and that some forms of inference that belong to it are rationally unacceptable and incorrect, even though they are meaning-constitutive. To clarify the conditions under which a language is understood is one thing. To clarify the criteria for evaluating the rational acceptability of a (fragment of) language and its logic in a given epistemic situation is quite a different thing. These criteria are multifarious: consistency, simplicity, fruitfulness, empirical adequacy etc. To evaluate a fragment of language rationally we must aspire to an ideal balance between these different criteria. Since the criteria are often in conflict with one another, the evaluation takes the form of a cost-benefit analysis in the given epistemic situation. This is not the business of a theory of understanding. Therefore it is not the business of a theory of meaning.

In his lecture Williamson rejects the idea that disputes over logical validity should be settled by the theory of meaning. But he does not criticize this idea in the way I outlined above. He takes as a case study the controversy over the status of the Barcan formula. According to Williamson the controversy should be resolved by arguments that do not belong to a semantic theory, nor to the theory of meaning. But these arguments do not amount to a cost-benefit analysis of the kind I outlined above. Williamson suggests that the controversy over the validity of the Barcan formula should be solved by a metaphysical argument. In a beautiful essay, "Necessary Existents," Williamson expounds a metaphysical argument, a proof that Spinoza and Leibniz would have admired. He proves that everything exists necessarily. The proof is very simple. It has three premises: 1) necessarily, if I do not exist then the proposition that I do not exist is true; 2) necessarily, if the proposition that I do not exist is true then the proposition that I do not exist exists; 3) necessarily, if the proposition that I do not exist exists, then I exist. The rest of the proof runs as follows. By the transitivity of strict implication (1), (2) and (3) entail: 4) necessarily, if I do not exist then I exist. Since "I do not exist" implies both "I exist" and "I do not exist," "I do not exist" implies a contradiction and is therefore impossible. Hence (4) entails: 5) Necessarily, I exist. Williamson adds: "we can generalize the proof by substituting a variable for 'I' to derive the result that for every *x*, necessarily *x* exists (a result which we may prefix with a further

'necessarily')" (Williamson 2002, p. 234). It is beyond the scope of the present note to discuss this intriguing proof. What I should like to highlight, however, is the justification of premise (3) provided by Williamson. He writes that it is a special case of a more general principle: 3+) necessarily, if the proposition that *P(o)* exists, then *o* exists. In support of this principle Williamson says: "A simple defence of (3+) is based on the Russellian view that the proposition that *P(o)* is a structured entity of which one constituent is the object *o*. [...] On this view the terms that may replace '*o*' are *directly referential* in David Kaplan's sense. [...] However (3+) is plausible even independently of the direct reference view. For example, on a more Fregean view of propositions [...]" (Williamson 2002, p. 241). Here I stop and pose a question. Williamson's metaphysical proof depends on acceptance of a Russellian or a Fregean view of propositions. The issue of whether such views are correct is therefore essential for estimating the value of the proof. Should we not say that this issue belongs to the theory of meaning? Michael Dummett would answer that it does belong to the theory of meaning, and I think many would agree. If this answer is right, our assessment of Williamson's metaphysical argument depends on the theory of meaning and, at least in the present case, metaphysics fails to free itself from the theory of meaning.

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