THE LIAR AND THE PROSENTENTIAL THEORY OF TRUTH

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A common approach to resolving the Liar paradox rests on the claim that the liar sentence fails to express a proposition. Since the liar sentence lacks content, the question of its truth or falsity does not arise. Dorothy Grover's (1977, 1992) application of the prosentential theory of truth to the Liar paradox presents a novel approach to working out this idea.([1]) She claims that the paradox can be eliminated once we recognize that 'true' is a constituent of prosentences rather than a property ascribing predicate. In section 1, I explain briefly the fundamental idea of the prosentential theory of truth, and I present Grover's proposed resolution of the Liar paradox. In section 2, I argue that Grover's approach is open to the objection that the paradox has not been resolved, but rather, relocated.

<div align="center">1.</div>

The basic claim of the prosentential theory of truth is that 'true' is a constituent of prosentences.([2]) Prosentences function similarly to anaphoric uses of pronouns. For example, in

(1) Mary went to work and she took the bus.

'she' is anaphorically tied to 'Mary' and acquires for its referent whomever is the referent of 'Mary'. Consider the sentences:

(2) Grass is green.
(3) That is true.

On the prosentential theory, (3) is a prosentence. It is anaphorically tied to

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([1]) An earlier and brief presentation of this approach is given in Grover (1976). For a discussion of the Berry paradox see Grover (1983).

([2]) For a detailed presentation of the prosentential theory of truth and its motivation see Grover, Camp, and Belnap (1975).

(2) and acquires for its content whatever is the content of (2). What (3) says is that grass is green. It should be noted that it is the complete sentence, 'That is true,' which is the prosentence and is anaphorically tied to (2). In cases such as these a prosentence acquires for its content whatever is the content of the expression to which it is anaphorically tied. In addition to these cases, there are quantificational uses of prosentences as in

(4) Everything Janet says is true.

On the prosentential theory (4) is read as

(5) For any proposition, if Janet says that it is true then it is true.

In (5) the occurrences of 'it is true' are prosentences, and they acquire for their content whatever is the content of their substituends. Grover provides the following characterization of prosentences:

(A) Prosentences can occupy the position of a declarative sentence.
(B) Prosentences can be used anaphorically in the ways described above.
(C) Prosentences, when used anaphorically, have an antecedent from which they derive an anaphoric substituend or a family of anaphoric substituends (quantificational cases). The substituends are sentences.
(D) Prosentences are 'generic' in that in one use or another any declarative sentence might be an anaphoric substituend.

Prosentences also can be modified as in 'That is not true.' In this case the prosentence acquires for its content the contradictory of its antecedent's content. For example, consider

(6) Snow is purple.
(7) That is not true.

(7) acquires for it content

(8) Snow is not purple.

It should be noted that on the prosentential theory 'true' is not treated as a property ascribing predicate but rather it is analyzed as a constituent of prosentences.

Grover's resolution of the Liar paradox centers on the claim that the liar sentence lacks propositional content. On Grover's approach, a prosentence is grounded if it is tied through antecedents to a sentence that can acquire content independently, and it is well-grounded if the sentence, in a given context, does have content. For example, 'The present king of France is wise' can acquire content independently, but in the present context it lacks content. Grover does not provide an explicit characterization of the notion of a sentence acquiring content independently, but it seems that we can take these sentences to be those which do not contain any semantical terms or prosentences.([3])

The prosentential diagnosis of the Liar proceeds as follows. Consider

(9) This sentence is not true.

If we assume (9) has content then since (9) contains a modified prosentence it acquires for its content the contradictory of its antecedent's content. Since the antecedent of (9) is itself, (9) would seem to acquire for its content: This is true. But if this is the content of (9) then since (9) acquires for its content the contradictory of its antecedent's content, we can conclude that (9) acquires for its content: This is not true. In this case, we are once again led back by similar reasoning to our original conclusion that (9) has for its content: This is true. In trying to determine the content of (9) we are caught in an unending circle. What this suggests is that the assumption that (9) has content is mistaken. Since (9) is a prosentence and is its own antecedent, (9) cannot acquire content independently. (9) is an ungrounded prosentence.

Grover also considers paradoxical cases involving sentences with quantifiers, such as

(10) Anything that is identical with this sentence is such that it is false.

On the prosentential theory, (10) is a quantified prosentence, and it acquires its content from the contents of its substituends. Grover calls a substituend 'crucial' if excluding it from the set of possible substituends for a quantified prosentence would change the content (if any) of the sentence. A quantified prosentence lacks content if it has a crucial substituend that lacks content.

([3]) Grover (1977., p. 599) briefly remarks that the set of grounded sentences corresponds roughly to the set of sentences which are assigned a truth value in Kripke's (1975) smallest fixed point.

If a quantified prosentence is a crucial substituend of itself then it also lacks content since as a substituend the quantified prosentence is ungrounded. Grover maintains that this is the case with (10). She argues that (10) is a crucial substituend of itself since it is the only sentence identical to (10) and therefore the only sentence from which the prosentence 'it is false' could acquire content.

The point of the prosentential treatment of Liar-type sentences is that these sentences do not infect natural languages with inconsistency, but rather, they are ungrounded expressions. The appearance of inconsistency apparently arises from our mistakenly treating 'true' as a property ascribing predicate rather than as a constituent of prosentences and in mistakenly assuming that Liar-type sentences have content.

2.

In this section I argue that the prosentential approach fails to resolve the Liar paradox. Consider the following sentence in which 'not' is taken as having wide scope:[4]

(11) It is not the case that there is a true content that (11) expresses.

Assume that (11) has content. If the content of (11) is true then (11) has a true content that it expresses and so (11), itself, is false. But if (11) is false then it does not have a true content that it expresses and so (11) is true. An obvious reply by the prosententialist is that (11) should be read as the negation of a quantified prosentence. Moving the negation sign inside the existential quantifier we obtain a quantified prosentence prefixed by a universal quantifier. (11) then lacks content since it is a crucial substituend of itself. But now consider the following:

(12) There is a true content that (11) expresses.

Since (11) lacks content, (12) is false. In this case we can assert the denial of (12):

[4] This example is an application, to the prosentential theory, of a brief criticism made by Gupta and Belnap towards those approaches which attempt to resolve the Liar paradox by claiming that paradoxical sentences fail to express propositions. See Gupta and Belnap, (1993, pp. 9-10).

(13) It is not the case that there is a true content that (11) expresses.

(11) and (13) are the same sentence. This suggests that they should be evaluated in a uniform manner. If we say that (11) is assertible because (13) is assertible then it seems that we should evaluate (11) as having content. This results in the reemergence of paradox. But if we say that (13) lacks content then, contrary to our intuitions concerning the above reasoning, we should say that (13) is not assertible. The problem for the prosentential theory is to provide an account which provides a coherent evaluation of (11) and (13).([5])([6])

Grover's (1981, 1990) remarks concerning the use of 'not' for expressing rejection suggest a line for developing a reply. In one sense we use 'not' to express the contradictory of a sentence. For example, 'Snow is not white' is the contradictory of 'Snow is white'. Grover suggests that 'not' also can be used to reject a sentence without this use expressing the contradictory of the sentence. This might be appropriate if asserting the contradictory of a sentence is in some way problematic. If we agree that there is something wrong with asserting the contradictory of 'The present king of France is wise' then we may still want to have available a means for expressing our rejection of this sentence. We might try, 'It is not the case that the present king of France is wise', where 'not' is to be understood as expressing rejection of the sentence but not expressing its contradictory. A prosententialist might then respond to the above argument by claiming we are mistaken in evaluating (12) as false since (12) simply lacks content. (12) lacks content since it has (11) as a crucial substituend and (11) lacks content. The failure of (12) to have content gives us reason for rejecting it. The use of 'not' in (13) should then be understood as simply expressing rejection of (12) rather than expressing its contradictory.

The problem with a response of this kind is that it seems counterintuitive

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([5]) The argument given above is very much the same as that given by Grim (1991, pp. 21-22) in discussing the Propositional Liar. Grim (pp. 60-63) also discusses the prosentential theory in terms of sentential operators. Although I was aware of Grim's work, I had not read his book at the time of writing this paper. I wish to thank a referee for this journal for bringing Grim's argument to my attention.

([6]) Sobel (1992) also argues for the claim that liar-type sentences lack content. He argues that the reemergence of paradox can be avoided by restricting the substitutivity of identicals. The argument I present above, though, does not rely on the substitutivity of identicals and so it also can be extended to Sobel's view.

to claim that (12) lacks content. (12) says that there is a propositional content that (11) has and it is true. The assumption that (11) lacks content is sufficient for us to determine that the first conjunct of the existential claim fails to hold and that (12) is false. This suggests that in some cases a quantified prosentence has content even if one of its substituends lacks content. Since we can determine that (12) is false even though it has a substituend which lacks content, we should be able to take (13) as asserting the negation of (12) and not simply as an expression of rejection. The prosentential theory still faces the problem mentioned above.

Of course, Grover is aware of the objection that her account has not eliminated paradox but simply relocated it. She considers the following example:

(20) (20) is false, or (20) is ungrounded.([7])

By the usual reasoning we can show that (20) is paradoxical. Grover resolves this difficulty by claiming that the paradox arises only if 'true' and 'false' are taken as property ascribing predicates rather than as constituents of prosentences. She uses the Weak and Strong Kleene (1952) valuation schemes to show that on her approach (20) is assigned a unique valuation by these schemes. She discusses the following alternatives for extending the notion of groundedness to disjunctions. A disjunction is grounded$_1$ if and only if each disjunct can acquire content independently. On the Weak Kleene scheme an ungrounded$_1$ prosentence is assigned the value u. On the Strong Kleene scheme an ungrounded$_1$ prosentence is assigned the value t if its antecedent has a disjunct with the value t, otherwise it is assigned the value u. If a prosentence is modified by 'false' and its antecedent has the value t then the prosentence is assigned the value f. Consider

(20$_1$) (20$_1$) is false, or (20$_1$) is ungrounded$_1$.

On this approach (20$_1$) is ungrounded$_1$ since its first disjunct is not tied to an antecedent which can acquire content independently. So the disjunct '(20$_1$) is ungrounded$_1$,' is assigned the value t. On the Weak Kleene scheme (20$_1$) is assigned the value u since its first disjunct has the value u. On the

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([7]) This example and the ones that follow are Grover's (1977, pp. 602-603). I am following her numbering.

Strong Kleene scheme (20_1) is assigned the value t since its second disjunct has the value t. On the second alternative a disjunction is grounded$_2$ if and only if at least one disjunct can acquire content independently.([8]) Consider

(20_2) (20_2) is false, or (20_2) is ungrounded$_2$.

Concerning (20_2) Grover says, "(20_2) is grounded$_2$, so '(20_2) is ungrounded$_2$' has the value f. On both Weak and Strong Kleene (20_2), '(20_2) is true' and '(20_2) is false' have the value u." (1977, p. 603) Grover does not explain the reasoning behind these statements but it seems that they depend on the assumption that the second disjunct of (20_2) can acquire content independently. According to Grover, (20_1) and (20_2) are assigned unique values on her approach and the reemergence of paradox is avoided if we pay careful attention to the prosentential role of 'true' and 'false'.

It should be noted that this response does not apply directly to the problem I raised above. (11) through (13) involve quantified sentences while (20) through (20_2) involve sentences with singular terms. It is not clear how Grover's response is to be extended to the problem I raise. Also, there are difficulties with Grover's treatment of (20_1) and (20_2). First, consider Grover's remarks concerning (20_2). Since (20_2) is grounded$_2$ then (20_2) can acquire content independently. Does (20_2) have content in this particular case? Once it is granted that (20_2) is grounded$_2$ then the answer appears to be yes. (20_2) is unlike a sentence such as the 'The present king of France is bald' which can acquire content independently but can also lack content on a particular occasion of use when the definite description lacks a referent. The proper name in (20_2), though, does have a referent. Since (20_2) can acquire content independently, it is difficult to see what would deprive it from having content on this particular occasion of use. If (20_2) is grounded$_2$ then it seems that (20_2) expresses a proposition in this instance. But if (20_2) expresses a proposition then its first disjunct should have the contradictory of this proposition for its content. Since this disjunct has content, it should not be assigned the value u as Grover claims. But if (20_2) is assigned the value t or f then paradox reemerges. Grover's brief remarks concerning (20_2) need to be clarified before we can assess the relevance of this example to her claim that paradox does not reemerge on the prosentential treatment

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([8]) Grover briefly mentions a third alternative. A sentence is grounded$_3$ if and only if it is either truth or false. I do not discuss this alternative since she does not apply it to the example she considers.

of the Liar.

Now consider Grover's treatment of (20_1). According to her account of being grounded$_1$, (20_1) is not capable of acquiring content independently and so it lacks content in this particular case. Since (20_1) lacks content, it should not be assertible. On the Strong Kleene valuation scheme (20_1) has the value t. Since (20_1) has the value t, (20_1) should be assertible. We have the re-emergence of paradox. This problem is similar to the one I raised with sentences (11) through (13). In light of this problem it seems that we should use the Weak Kleene scheme for evaluating (20_1). Since (20_1) is assigned the value u on this scheme, (20_1) is not assertible. It should be noted, though, that this kind of a reply is similar to the one I considered in rejecting the claim that (12) lacks content. The intuitive reasoning that I presented there can similarly be applied in this case. Grover needs to provide an argument for rejecting this intuitive reasoning.

As presently formulated, the prosentential treatment of liar-type sentences fails to resolve the Liar paradox. My criticisms of Grover's approach, though, do not show that the prosentential theory cannot in principle provide an adequate resolution of this paradox. What they do show is that if an adequate account of the Liar paradox is to be given by the prosentential theory then this account must be worked out in further detail.[9]

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