

Forthcoming in *Philosophical Topics*, special issue.

On the Connection between Semantic Content and the Objects of Assertion

Una Stojnić

**Department of Philosophy
& Center for Cognitive Science**

Rutgers University

Abstract:

The Rigidity Thesis states that no rigid term can have the same semantic content as a non-rigid one. Drawing on Dummett (1973, 1991), Evans (1979, 1982), and Lewis (1980), Stanley (1997a, 1997b, 2002) rejects the thesis since it relies on an illicit identification of compositional semantic content and the content of assertion (henceforth, assertoric content). I argue that Stanley's critique of the Rigidity Thesis fails since it places constraints on assertoric content that cannot be satisfied by any plausible notion of content appropriately related to compositional semantic content. For similar reasons, I also challenge a recent two-dimensionalist defense of Stanley by Ninan (2012). The moral is far-reaching: any theory that invokes a distinction between semantic and assertoric contents is unsatisfactory unless it can plausibly explain the connection between them.

Keywords: semantic content; assertoric content; compositionality; intensional operators; rigidity; two-dimensionalism.

0. Introduction

The *Rigidity Thesis* (RT) is the claim that no rigid term has the same content as a non-rigid one.¹ RT requires that if the two sentences differ only insofar as one contains a rigid term where the other contains a corresponding non-rigid one, they differ in content. *Prima facie*, the thesis is corroborated by intuitions about the modal profiles of sentences containing rigid terms, and corresponding non-rigid ones. Intuitively, while (1) is informative, and contingent (false in some circumstances), (2) is trivially true and necessary.

1. Aristotle is the last great philosopher of the antiquity.
2. Aristotle is Aristotle.

But (1) and (2) only differ insofar as one contains the non-rigid term ‘the last great philosopher of the antiquity’, and the other the co-referring rigid one, ‘Aristotle’. By RT, it follows they have different contents, which, in turn, explains why they intuitively differ in modal profiles.² However, other examples support counter-intuitions.

Relative to a context, (3) and (4) seem to communicate the same content:

3. The actual author of *Waverly*, if there is (a unique) one, is Scott.
4. The author of *Waverly*, if there is (a unique) one, is Scott.

What you would learn in a normal conversation from (3) – the recoverable information – seems exactly what you would learn from (4). The occurrence of ‘actual’ seems redundant. But (3) contains a rigid, while (4) a corresponding non-rigid, term. By RT, they differ in content, and so, that they seem to communicate the same content is puzzling.

¹ RT goes back to Kripke’s (1980) arguments against the descriptivist theory of names, and was one of the central underlying assumptions in the anti-descriptivist tradition.

² See Kripke (1980).

² See Kripke (1980).

³ Similar considerations are in Davis & Humberstone (1980).

Following Dummett (1973, 1991) and Evans (1979, 1982), Stanley (1997a, 1997b, 2002) argues that this puzzle rests on an implicit assumption of what I shall call *Identification*:³

(Identification): The compositional semantic content (henceforth, semantic content) of a sentence S of a language L in a context c = the proposition that a normal assertive utterance of S expresses in C (its *assertoric content*, for short).

With Dummett and Evans, Stanley rejects Identification.⁴ He is drawing on an argument from Kaplan (1989) and Lewis (1980), both of whom, starting with the widely held assumption that the objects of propositional attitudes are propositions,⁵ argue that propo-

³ Similar considerations are in Davis & Humberstone (1980).

⁴ Ninan (2010), Rabern (2012a, 2012b), and Yalcin (2007, 2012, 2015) have all recently rejected Identification, albeit not only for reasons about rigidity (though Ninan (2012) defends Stanley's argument against RT from criticism by King (2003, 2007)). Others, such as Bach (2003), Borg (2004), Cappelen and Lepore (2005), as well as some Relevance Theorists (Sperber and Wilson, 1986) have also argued for a separation of compositional semantic content from assertoric content, though for different reasons. These critics are guided by the belief that context has only minimal effects on compositional semantic content. Although my focus is not on this type of rejection of Identification, considerations I raise provide a challenge for these authors as well.

⁵ This assumption is contested by contemporary relativists (e.g. Egan (2010) and MacFarlane (2005)), who nevertheless endorse Identification, by virtue of making the objects of the attitudes non-propositional. It has also been contested by expressivists (Yalcin, 2007, 2012), who deny Identification. Since my interests here will be only with a (dis)analogy between Stanley's and Lewis' arguments, and its bearing on the Dummett-Evans-Stanley rejection of Identification, and since both Stanley and Lewis accept the assumption, I can grant it for the sake of argument.

sitions cannot be the compositional semantic values of sentences on occasions of use, for any such identification would violate compositionality.⁶

In what follows, Section 1 presents an argument from Lewis (1980) and Kaplan (1989) intended to establish that certain sentential operators, in particular, temporal and locational ones, require attributing semantic contents to sentences (in a context) that are ill-suited as objects of propositional attitudes. Lewis (1980) concluded that these operators must operate on semantic, but not assertoric, contents. (A similar argument is in Kaplan (1989).⁷) Section 3 presents Stanley's argument that modal operators are likewise of this sort, thereby concluding that semantic, but not assertoric, content exemplifies modal properties. Since rigidity is a modal property, it is exemplified only by semantic content;⁸ two sentences differing only insofar as one contains a rigid

⁶ One cannot straightforwardly characterize Kaplan as rejecting Identification, since he often speaks of semantic content as 'what is said' not only in a technical, but also in a pre-theoretic, sense. This is especially pressing since he motivates his account by drawing on intuitions about the (pre-theoretic) notion of what is said. (See Kaplan 1989, pp. 489) However, Kaplan also recognizes the tension provoked by a commitment to Identification, and his main argumentation for distinguishing propositions from semantic contents is present in Kaplan (1989, pp. 503-4). Thus, I group him with Lewis for simplicity, but add a *caveat* that there is tension in Kaplan regarding Identification.

⁷ Although, as noted earlier, the question of whether Kaplan actually denies Identification, is more complex. Cf. fn. 6.

⁸ Thus, insofar as one agrees that we have direct intuitions about rigidity even in the absence of an explicit modal operator, as in examples such as (1) and (2), these intuitions would naturally be understood as tracking semantic, not assertoric, content. Stanley (1997a), in fact, argues that these intuitions are not intuitions about assertoric content.

term and the other a corresponding non-rigid one can share assertoric content, establishing that RT is false.

The failure of Identification is remarkable because most theorists assume it to explain how communication is possible. We can communicate with the use of a sentence in a given context because what is expressed by that use just is the semantic content of that sentence in that context.⁹ Thus, a failure of Identification leaves us in a quandary – if semantic content is distinct from assertoric content, then how is the assertoric content of an utterance determined given its semantic content? Section 2 presents Lewis' account of how to derive assertoric content from semantic content, but Section 4, on the contrary, argues Stanley has no way to reestablish the connection via Lewis' strategy, and surprisingly, neither can the recent two-dimensionalist reconstruction of Stanley's account proposed by Ninan (2012) establish the connection.¹⁰ Indeed, there is sufficient reason to believe that there is no plausible and sufficiently constrained way to reestablish the connection between the two levels of content for a Stanley-type view. That is because, as I will argue, there is no plausible notion of content that can play the role of Stanley's assertoric contents, given a presumed connection between assertoric and compositional semantic content.

⁹ This is, of course, compatible with the expressed content – what is said – being an input to further pragmatic reasoning.

¹⁰ That Stanley's view can be interpreted as two-dimensionalist is suggested by King (2003, 2007) as well. Stanley (2002) considers this interpretation, but does not explicitly endorse it.

1. The Operator Argument

1.1. The Operators and Compositional Semantic Content

Since natural languages in general, and English in particular, are riddled with context-sensitivity, sentences express semantic content only relative to a context, where a context is usually understood as a location (time, world, and spatial location) of the utterance, and as such, it comprises parameters and features that help determine the semantic content of a given utterance. According to the picture Lewis is challenging, the semantic content of a sentence in a context is a *proposition*. A sentence is true in a context c iff at c it expresses a true proposition. Since propositions are true/false relative to worlds, a sentence is true at c iff the proposition it expresses in c is true relative to the world determined by c (a.k.a. 'the world of utterance'). However, relativizing truth to just a context, Lewis argues, is insufficient,¹¹ since the truth of some sentences at a context depends on the truth of the proposition expressed by *another* sentence in *that* context, relative to a world *other than* the world of utterance. For example, the truth of, 'It is possible that there are five coins in my pocket,' uttered in c , depends on whether at a world w' accessible from the world of utterance w_c , the proposition expressed by 'There are five coins in my pocket' in c is true.¹²

The point is that sentential operators such as 'it is possible that' shift the world parameter of the context. A sentence containing a 'shifty' operator is true in a context and a world of utterance iff the proposition expressed by the embedded sentence in that context is true relative to a world(s) other than the world of utterance. To capture that the truth of a sentence in a context can depend on the truth of a proposition expressed

¹¹ This idea is, of course, not new with Lewis. See Kamp (1971) and Kaplan (1989).

¹² As usual, 'accessible' worlds are determined by a contextually supplied accessibility relation.

by *another* sentence in *that* context relative to a world *other than* the world of utterance, truth has to be relativized not merely to contexts, but also to worlds.¹³

Following Lewis, call an n-tuple of parameters of a context that can be shifted in this manner an *index*.¹⁴ The truth of sentences (of a language in a context) can then be relativized to indices. So far, an index need only contain a single parameter – a world. A sentence *S* of *L* is true relative to a context *c* and an index *i* iff the proposition expressed by *S* in *L* at *c* is true relative to *i*. We define the truth of *S* at *c* as: *S* is true at *c* iff *S* is true relative to *c* and the index determined by the context *i_c*, i.e., iff the proposition expressed by *S* at *c* maps *i_c* to *true*.¹⁵

To see Lewis' argument that, given certain natural language operators, the semantic content of a sentence cannot be a proposition (in the traditional sense), consider the pair (5)-(6):

5. Mary is drowsy.
6. From time to time, Mary is drowsy.

¹³ Lewis (1980) denies we can avoid relativization of truth to worlds by making the truth-value of the sentence embedded under a modal operator dependent on a context just like the context of utterance except that the world of utterance has possibly been shifted. He argues that what results from switching just one parameter of a context, while holding other parameters fixed, is not a context. Contexts require their agent to be located at a world of utterance at a time of utterance; but this requirement is not preserved once we shift a world of a context. ('Necessarily, I am here now' is false.)

¹⁴Lewis' index is Kaplan's (1989) *circumstance of evaluation*.

¹⁵ Since (so far) indices only contain a world, we can still treat propositions as functions from worlds to truth-values.

Suppose that, syntactically, 'from time to time' is a sentential operator.¹⁶ Assuming, (5) and (6) are uttered in the same context, 'Mary is drowsy' should make the same semantic contribution in both. Lewis' initial assumption, *per reductio*, is that the semantic content a sentence expresses, relative to a context of utterance, is a proposition. Then (6) intuitively depends for its truth at a context *c* and a world *w*, on the truth of the proposition expressed by 'Mary is drowsy' in *c*, *at times other than the time of c*. However, since, on the standard picture, the truth-value of a proposition depends only on worlds, and not on times, 'Mary is drowsy,' if true (in a context and a world), is true *at all times*. But, then, the semantic contribution of 'from time to time' is vacuous. That is, (5) should express whatever (6) does, and (6) should be true (in a context, at a world) iff (5) is. But since 'from time to time' is *not* semantically vacuous, the semantic content of 'Mary is drowsy' must be, or determine, a function from worlds *and times* to truth-values. Since, propositions, traditionally construed, are not functions of this type, they cannot be the semantic content (5) contributes to (6). But, then, to hold that the semantic content of a sentence *not embedded* under a temporal operator is still a proposition would violate compositionality, since then the semantic content of, e.g., (6) would not be derived as a function of the semantic contents of its parts. This completes Lewis' argument.¹⁷

¹⁶ Though this assumption is controversial (see King (2003)), we grant it for the sake of argument.

¹⁷ With parallel arguments, Lewis argues (compositional) semantic contents should be (or determine) not only functions from worlds and times to truth-values, but (at least) functions from worlds, times, locations and standards of precision to truth-values.

1.2. Operators and Assertoric Content

The kind of objects suitable to enter semantic composition (assuming with Lewis that these determine functions from richer indices to truth-values) is not suitable to play the role of objects of assertion and propositional attitudes. Lewis' thought is that, since propositions are what we believe and assert, and since propositions do not enter into semantic composition, semantic content cannot be assertoric content. And so, Lewis concludes, '[I]t would be a convenience, nothing more, if we could take the propositional content of a sentence in a context as its semantic value. But we cannot. The propositional contents of sentences do not obey the compositional principle, therefore they are not semantic values.' (Lewis, 1980; pp. 39, reprint)¹⁸

In summary, a Lewis-style argument takes the following general form: for a sentential operator *O* to have a non-vacuous semantic contribution, the semantic content it

¹⁸ As noted above, a version of the Operator Argument is present already in Kaplan (1989), who also takes the semantic content of a sentence in a context to be (or to determine) a function from richer indices to truth-values. Kaplan is likewise sensitive to the fact that such semantic values might *not* be suitable as the objects of propositional attitudes. He writes: "Technically, we must note that intensional operators must, if they are not to be vacuous, operate on contents which are neutral with respect to features of circumstance the operator is interested in. Thus, for example, if we take the content of *S* to be (i) [the proposition that David Kaplan is writing at 10 a.m. on 26 March 1977], the application of a temporal operator to such a content would have no effect; the operator would be vacuous" (pp. 503–4, n. 28). And, "[t]his functional notion of the content of a sentence in a context may not, because of the neutrality of content with respect to time and place, say, exactly correspond to the classical conception of a proposition" (p. 504). As noted above, it is less clear whether these considerations ultimately lead Kaplan to reject Identification. (Cf. fn. 6.)

operates on cannot be specific along the O dimension, on pain of loss of compositionality. Since O's contribution is not vacuous, semantic content is not specific along the O dimension. However, the contents of beliefs and assertions are specific along the O dimension. Hence, the compositional semantic contents are not the contents of beliefs.¹⁹

Lewis does not offer an independent argument for thinking only propositions, and not semantic contents of the kind he advocates, are suitable objects of propositional attitudes.²⁰ He takes this for granted. However, there are familiar arguments for this view.

¹⁹ Of course, one could deny that English, in particular, and natural languages, in general, contain temporal, locational and other types of intensional operators (except perhaps modal ones). In fact, a growing number of linguists have grown dissatisfied with the intensional treatment of alleged temporal and locational operators. (See King (2003) for arguments against the intensional treatment of tense and location.) An alternative treatment might involve treating temporal and locational expressions as quantifiers over times and locations in the object-language, rather than in the meta-language. Going into the details of such extensional treatment would unnecessarily complicate our dialectic, since the distinction between semantic and assertoric contents that exactly parallels the distinction made by Lewis could be made in an extensional framework (Cf. Ninan 2012; Rabern 2012a, 2012b.), and the disanalogy I want to draw between the Stanley-type argument and Lewis' argument could be drawn in a purely extensionalist framework.

²⁰ In fact, in 'Attitudes *De Dicto* and *De Se*', published a year before 'Index, Context and Content,' Lewis endorses a view according to which compositional semantic contents (of the kind he endorses) *are* suitable as objects of the attitudes. This view rejects not the claim that propositions violate compositionality, but rather the claim that propositions are the objects of the attitudes. What's asserted and believed on this type of account is (or determines) a function from richer indices (that contain more than just a world coordinate) to truth-values. Such an approach is embraced by modern relativists (see, e.g., Egan (2010), McFarlane (2005)). The jury is still out

One might think that while compositional semantic contents (of the Lewis variety) vary in truth-value (at least) with times and locations in addition to worlds, beliefs do not share this feature. The contents of our beliefs (and assertions) are not time- or location-neutral; our beliefs don't seem to change truth-value with times and locations. To illustrate the type of argument those attracted to this view advance, suppose that on April 15th, 2015, it is raining, and I believe and say that it is raining. The argument goes, it would seem false to say on April 16th, 2015, that what I believed and said yesterday is false. You cannot challenge me on April 16th, 2015, by saying: 'Yesterday you said something false'. And parallel arguments can be constructed against the idea that assertoric contents vary in truth with location. Sitting in my office, I believe, and I say to you, that the North Pole is 3428.72mi away. Once at the North Pole, it would be odd for me to say what I believed in my office is false. And it would be odd for you to challenge me by saying: 'Back in your office, you said something false'.²¹

Of course, other examples in the literature pull intuition in the opposite direction. I do not here wish to assess the success of such arguments, or take a stand on the nature of the objects of propositional attitudes. That is a topic for another day. My present interest is the analogy between Lewis-type and Stanley-type arguments. Thus, my strategy will be to grant, for the sake of argument, that semantic content is as Lewis takes it to be, and that assertoric content is also as he takes it to be. I will show that, while there is still, as Lewis argues, a clear connection between the two levels of content in the Lewis-

on whether this kind of object is suitable to play the role of an object of assertion and propositional attitudes. I will not pursue this issue here, since the only thing that matters for my purposes is the analogy between the Lewis-type and the Stanley-type arguments.

²¹ For arguments along these lines, see Richard (1981) and Salmon (2003).

type case, the connection does not carry over to what would have to be Stanley-type contents.

2. The Connection

A semantic theory without any connection between assertoric and semantic content would leave unexplained how by making an assertion, a speaker manages to convey information to others or to modify their beliefs in a more or less systematic way. Without an account of how semantic content can play a role in fixing assertoric content, it becomes an idle wheel in a theory of communication, and how assertoric content is expressed becomes completely mysterious. Moreover, a chief reason for a compositional semantics is to explain how language users can understand and produce indefinitely many novel sentences. Yet, since compositionality only governs semantic content, without a clear connection between semantic and assertoric content, these capacities would be mysterious, and left unexplained by appeals to compositionality of semantic content.

Luckily, recovering assertoric from semantic content is easy for Lewis (and Kaplan). To see how, represent the semantic content of an utterance of a (unembedded) sentence φ in a context c as follows:

$$\mathbf{SC-L:} \quad \lambda w. \lambda t. \lambda l. \llbracket \varphi \rrbracket^{c, \langle w, t, l \rangle}$$

where c is the context, and $\langle w, t, l \rangle$ an index (where w, t and l are world, time and location parameters, respectively).²² According to **SC-L**, the semantic content of φ in c is a function from possible worlds, times and locations to extensions – here, truth-values. The assertoric content is then easily recovered by letting the context ‘fix’, i.e., supply the location and time parameter. Thus the assertoric content for Lewis is **AC-L**:

²² I take ‘ $\llbracket \]$ ’ to denote an interpretation function of the model that takes an expression, a context, an index and an assignment function to extensions. For simplicity, I suppress the assign-

AC-L: $\lambda w. \llbracket \varphi \rrbracket^{c, \langle w, t_c, l_c \rangle}$

where t_c, l_c are the time and location parameters fixed by context c . The function in **AC-L** takes a possible world and returns a truth-value. That is, it is a good old proposition.

Lewis' lesson is that, although semantic and assertoric contents do not coincide on his story, semantic content nevertheless *determines* assertoric content, since, given a semantic content, we can recover the assertoric content by letting the context saturate the time, location and possibly other parameters of the index. Thus, a Lewis-type account does not leave mysterious how we get such content across. We turn directly to Stanley's analogy.

3. Assertoric Content, Semantic Content and Rigidity

As noted above, Stanley (following Evans and Dummett) differentiates assertoric from semantic content for reasons distinct from those in Lewis and Kaplan. His goal is to challenge RT. His main argument can be sketched as follows: pairs of sentences like (3)–(4), (repeated below as (7) and (8)) differ only insofar as one contains a non-rigid term, and the other a corresponding rigid one, yet both typically seem to communicate the same content relative to the same context.

7. The actual author of *Waverly*, if there is (a unique) one, is Scott.

8. The author of *Waverly*, if there is (a unique) one, is Scott.

ment function argument throughout. Note that one could argue against Identification on the grounds that the standard semantics for quantification and variable binding would require semantic contents to vary in truth-value with assignment functions (that quantifiers operate on), whereas assertoric contents are typically not taken to be variable in this way (see Rabern (2012a, 2012b)). Even if this is right, importantly note that one can establish a connection between the two types of content in a Lewisian way by saturating the assignment function parameter with a contextually supplied value.

Indeed, in any context, (7) is true just in case (8) is. But, nevertheless, they manifest distinct behavior when embedded under modal operators, e.g., (9) is true and (10) is false:

9. Necessarily, the actual author of *Waverly*, if there is (a unique) one, is Scott.

10. Necessarily, the author of *Waverly*, if there is (a unique) one, is Scott.

The actual author of *Waverly* (i.e. Scott) could not have failed to be Scott, but Scott might not have authored *Waverly*. Similar considerations, Stanley argues, hold for so-called *descriptive proper names*. Suppose 'Julius' has been introduced into the language via a reference fixing description (S):

(S) 'Julius' refers to whoever invented the zip.

Suppose further with Stanley that linguistic competence with 'Julius' presupposes knowledge of (S).²³ Then consider (11)–(12):

11. Julius invented the zip, if anyone uniquely did.

12. The inventor of the zip invented the zip, if anyone uniquely did.

As with (7)–(8), uttered in the same context, assuming competence with 'Julius', (11) and (12) communicate the same thing. Further, assuming, as Stanley does, that competence with 'Julius' requires knowledge of (S), in every context in which interlocutors are competent with 'Julius', (11) is true just in case (12) is.

However, just as (7) and (8) exhibit different modal profiles, so too do (11) and (12), as evidenced in (13)–(14):

13. Necessarily, Julius invented the zip, if anyone uniquely did.

14. Necessarily, the inventor of the zip invented the zip, if anyone uniquely did.

(13) is false and (14) true.²⁴

²³ This is not a completely innocuous assumption, but I grant it for the sake of argument.

Again, (11) and (12) differ only insofar as one contains a rigid, and the other a corresponding non-rigid, expression. So, RT predicts they cannot have the same semantic content. And, indeed, the difference in modal profiles of (7)–(8) and (11)–(12) has led many (indeed, most) authors to conclude that neither (7)–(8) nor (11)–(12) share content.

Stanley, however, resists this conclusion, arguing that it rests on the unwarranted assumption of Identification. Following Lewis that temporal and locational operators do not operate on assertoric content, but on semantic contents, Stanley argues that modal operators likewise do not operate on assertoric contents, but on semantic contents.²⁵ He thereby recommends the following explanation of the data in (7)–(8): (7) and (8) share assertoric content, but differ in compositional semantic content. Because modal operators operate on compositional semantic values, (7) and (8) exhibit different behavior when embedded under modal operators. That (7)–(8) share assertoric content explains why they seem to express the same content with respect to the same contexts; that they differ on semantic content explains why they behave differently when embedded under modal operators.²⁶ *Mutatis mutandis* for (11)–(12). Thus, by drawing a distinction between assertoric and compositional semantic contents, Stanley seems to get the best of both worlds. However, once Stanley draws a distinction between these two levels of content, he needs to tell us how to connect assertoric content to semantic content.

²⁴ Similar examples are used to motivate the distinction between semantic and assertoric content in Dummett (1973, 1991), Davis and Humberstone (1980) and Evans (1979, 1982).

²⁵ This line of thought is challenged by King (2003, 2007). He argues the analogy is unwarranted, since intensional treatments of temporal and location expressions are mistaken. *Prima facie*, if King is right, that would seem to undermine Lewis' argument. However, Rabern (2012b) re-

4. (Dis)connection

According to Lewis, we need to distinguish between two types of content because contents that only vary in truth-value with worlds, but not times and locations, violate compositionality. Since assertoric contents, that is, for Lewis, propositions, only vary in truth-value with worlds, it follows that they cannot be compositional semantic contents. Stanley, we saw, inspired by Lewis, concludes that modals also are intensional operators operating on semantic, but not assertoric, contents. But how does he account for the connection between them?

cently argued that even if we assume an extensional framework, propositions (traditionally understood) would still not be able to play the role of compositional semantic values. Thus, if Rabern is right, even if Lewis is wrong about the nature of temporal and locational expressions, we might still be forced to draw the distinction between the two types of content for purely formal reasons (though, granted, not for reasons Stanley cites). One could then reconstruct the dialectic in an extensional framework.

²⁶ As Stanley points out, it's easy to find pairs of sentences that seem to convey the same content relative to the same context, yet behave differently when embedded under temporal and locational operators. Here's one example:

- (a) The Olympic champion in show jumping is Steve Guerdat.
- (b) The current Olympic champion in show jumping is Steve Guerdat.
- (c) It will always be the case that the Olympic champion in show jumping is Steve Guerdat.
- (d) It will always be the case that the current Olympic champion in show jumping is Steve Guerdat.

Stanley takes these data to further support extending Lewis' treatment of locational and temporal operators, to modal operators.

He can take semantic content to be Lewis' **SC-L**, i.e. a function from times, locations and worlds to truth-values, reflecting that temporal, locational and modal operators can shift the relevant parameters of the context.²⁷ Or, ignoring the time and location parameters, for simplicity, he can take it to be **SC-S**: a function from worlds to truth-values.

$$\mathbf{SC-S:} \quad \lambda w. \llbracket \varphi \rrbracket^{c, \langle w \rangle}$$

But, on either route, a crucial disanalogy between Stanley and Lewis emerges. Given Stanley's data, assertoric content must be world specific, because 'the actual author of *Waverly*' and 'the author of *Waverly*', relative to different worlds, have different extensions (the former is rigid, the latter is not). The truth-value of Stanley's assertoric content, then, cannot vary with worlds.

So, given his data, Stanley needs to retrieve the assertoric content that does not vary in truth-value with worlds, from the world neutral semantic content in **SC-S**; following Lewis' strategy he would let the world parameter of the index be determined by the context, as in **AC-S**:

$$\mathbf{AC-S:} \quad \llbracket \varphi \rrbracket^{c, \langle w_c \rangle}$$

But **AC-S** cannot play the role of assertoric content. Since **SC-S** is a function from worlds to truth-values, once we saturate the world argument of the function **SC-S**, we get a truth-value. **AC-S** is just a truth-value. The objects of assertion and belief are supposed to be the bearers of truth-values, not the truth-values themselves. Distinctions between different beliefs and assertions are too fine-grained to be captured by truth-values.²⁸

²⁷ Bear in mind, Stanley grants that the time-neutral and location-neutral contents *cannot* figure as assertoric contents.

²⁸Of course, the same point holds if we saturate all three of the parameters in **SC-L**—a world, a time and a location—with a contextually supplied value: we just get a truth-value. In that sense,

Indeed according to this account of assertoric content there can be at most two beliefs: the True and the False. So, Lewis' way of accounting for the connection between the two types of content automatically fails.

The failure of extending Lewis' strategy to Stanley's account is instructive. It shows that Lewis' assertoric contents cannot be Stanley's, for the former vary in truth-value with worlds in a way that Stanley's cannot. So, assertoric content cannot be **AS-C**.²⁹ Alternatively, Stanley might try to treat assertoric contents as structured propositions—complex structured entities—rather than as functions from worlds to truth-values.³⁰ But fine-grained structured contents are not retrievable by **SC-S**. **SC-S** is too course-grained to deliver the relevant structured content; so, if this view is to get off the

it makes no difference whether we are working with **SC-L**, or the simplified **SC-S**. For the record, it wouldn't help to try to recover the assertoric content from **SC-L** by letting the context saturate only the world parameter of the index, but not the time, and location parameters. Such objects would fail to properly capture the truth-conditions of a sentence, which is something objects of assertion and belief are required to do.

²⁹ Note, it wouldn't help to argue that assertoric content is recoverable from the semantic content by some kind of pragmatic enrichment, where semantic content is understood as **SC-S** or **SC-L**. A standard variety of pragmatic enrichment takes the form of saturation of the functions that are semantic values – and it looks like, for the reasons given above, what results from such an enrichment of **SC-S** is a truth-value, rather than an entity suitable to be an object of assertion or belief. Thus, insofar as enrichment has to deliver a world-specific semantic value, it would run into the same problem as Lewis' strategy. Moreover, **SC-S** is neither “gappy” nor in need of expansion, so it isn't clear what would trigger enrichment.

³⁰ See, e.g., King (1995, 1996, 2007), Salmon (1986, 1989) and Soames (1986, 2010) for structured accounts of semantic content.

ground, we would also have to replace **SC-S**, a function from indices to truth-values, with structured contents—complex entities comprised of semantic contributions (in a given context) of parts of sentences expressing them (in that context).³¹ That is, we could take both the assertoric and semantic contents of sentences (relative to contexts) to be structured propositions.

But, this move, unfortunately, will not improve Stanley's position. The problem with employing structured propositions to try to forge a connection between semantic and assertoric contents is that structured semantic values are not compositional in Lewis' sense, since they do not compose in a function-argument way with operators, and so, no significant *semantic* composition occurs with them. The result of appending an operator to a structured content is another structured content. In a framework that employs structured contents as semantic values, compositionality enters in only at the level of the truth-definition for structured contents, *not* at the level of semantic contents themselves.³² Structured fine-grained semantic values are not compositional semantic values in the sense meant by Lewis. Thus, this route is a dead end for proponents of the distinction between assertoric and semantic content.³³

³¹ There is a further question of what gives structured propositions their structure. See e.g. King (2007) for a positive proposal and a further discussion.

³² For a helpful discussion see King (2007, pp. 113 and onwards).

³³ Note that even if it weren't for this problem, the view would still face problems. The view still needs to deliver world-specific assertoric contents and world-neutral semantic contents. A way to do this is to posit that structured propositions that play the role of assertoric contents contain the world of utterance as a part, and the ones that play the role of semantic content do not. The most straightforward way to achieve this effect is to posit a world variable in the LF of sentences and an obligatory wide-scope lambda binder that binds all free world variables in the

Recently, Ninan (2012) has defended a two-dimensionalist version of Stanley's argument against RT. According to two-dimensionalist accounts, each sentence *S* is semantically associated with two semantic values – the horizontal content (the proposition *S* expresses at a context *c*), and the diagonal content (the proposition that is true in a world *w* just in case, when uttered in *w*, *S* would express a true proposition in *w*).³⁴ The idea is that the horizontal content tracks the modal profile of an utterance and the diagonal content tracks the information it communicates relative to a context. So construed, semantic content is identified with the former, and assertoric content with the

structure (where modal operators would then be treated extensionally, as quantifiers over worlds). Such LFs then determine the compositional semantic content of sentences. The assertoric content would be generated by saturating the world variable in the LF with a contextually supplied world. (For this way of constructing world neutral vs. world specific structured propositions, see Schaffer (2012). Yet Schaffer does not suggest that we should exploit either of the two contents as semantic or assertoric content.) Note that on this view, however, the semantic content of an unembedded sentence again is not what it contributes to composition with modal operators—this strategy is more akin to what Lewis calls “the *schmentencite* strategy” (Lewis, 1980). Moreover, apart from this problem, the view wouldn't be deriving the structured semantic content from the structured assertoric content—it would posit two structured contents with different elements derived from the LF of the sentence in question. Note also that no structured account that tries to derive (structured) assertoric content from (structured) semantic content by some kind of pragmatic free enrichment would help Stanley, since the semantic content of Stanley's kind is neither ‘gappy’, nor in need of expansion in order to determine truth-conditions.

³⁴ Stanley himself suggests that one way to understand assertoric content is as a diagonal proposition (cf. Stanley 2002). This is also suggested by King (2003).

latter.³⁵ This seems to capture Stanley's data—namely, that (3)–(4) share diagonal content, but not horizontal content, and, assuming competence with a name like 'Julius' presupposes knowledge of (S), (7)–(8) does, too.

Unfortunately, as stated, this proposal also does not establish a connection between semantic and assertoric content. On it, semantic content doesn't *determine* assertoric content. The account just assigns two levels of content to each utterance. More seriously, diagonal content is not suited to play the role of assertoric content in all the relevant cases. The problem is familiar (Soames 2002). Were diagonal content the object of beliefs and assertions, then propositional attitudes would relate individuals to diagonal contents. And propositional attitude reports would express relations between individuals and diagonal contents. But, then, it would be natural to hold that ascription 'S believes that p' is true in c iff S believes the diagonal content of 'p' in c. But this result is problematic. For suppose Mary believes that Jason is angry. Then, Jason, knowing this, can report: 'Mary believes that I am angry'. However, according to the present proposal,

³⁵ I am simplifying. The question is whether we want to side with Lewis in relativizing truth to other parameters in addition to the world parameter of the index. In that case, neither diagonal content nor horizontal content (if we take them to be traditional propositions, rather than functions from richer indices) would strictly speaking be compositional. This would complicate Stanley's story and make the disanalogy with Lewis ever more striking – for to get at these contents we would first have to saturate the additional parameters in the index. Moreover, though this proposal, unlike the previous ones, opens the possibility for Stanley to claim assertoric content is essentially propositional content, it is worth noting that on the most developed two-dimensional stories, the diagonal is *not* a possible worlds proposition, but a set of centered worlds (ordered triples of a world, an individual and a time in that world). (See Chalmers (2004, 2006a, 2006b).)

his report comes out false – the diagonal proposition expressed by Jason’s utterance of ‘I am angry’ is not a proposition about Jason. It is something like the general descriptive proposition that the agent of the context, whoever s/he is, is angry. And this does not capture the content of the belief, which is a singular proposition about Jason. This problem has been well recognized by both proponents and opponents of two-dimensionalism. (See Chalmers (2006b) and Soames (2002).)

Note that, though often stated this way, the problem does not depend on the semantics of propositional attitude reports. Here’s another way to see it. If Jason utters, ‘I am in NJ’, and I follow up with ‘That’s false’ or ‘What Jason said is false’, I’m intuitively denying the truth of a singular proposition about Jason, not a general one about speakers in context, which would be so were the asserted content the diagonal content. Similarly, if Jason says ‘I am here now’ and I follow up with ‘That’s necessarily true’, or ‘What Jason said is necessarily true’, intuitively what I said is false, which shouldn’t be so were the propositional anaphor picking up the diagonal, rather than the horizontal, content.³⁶ Thus, identifying compositional semantic contents with horizontal contents, and asser-

³⁶ Note that though a two-dimensionalist can claim modal operators operate on horizontal, and not diagonal, content, here we have a predication of necessary truth, rather than a sentence embedded under a modal operator. Of course, one might insist that the propositional anaphor in such examples is obligatorily picking out semantic, rather than assertoric, contents, but then there should be an explanation for why this is so. The problem is especially pressing since ‘That is true/false’ or ‘What x said is true/false’ are normally taken to target assertoric, not semantic, content. One could also claim propositional anaphors target either of two contents (semantic or assertoric), but then one would have to explain why we only get one reading of ‘What Jason said is necessarily true’ in the above example, moreover, one that is false rather than one that is true.

toric contents with diagonal contents doesn't work.³⁷ Taking stock, assertoric content can be neither a diagonal proposition, nor a horizontal one, nor a structured one, if semantic content is to determine assertoric content. Do any options remain open?

One possible reaction is to build a structured semantic content and include all the relevant information. That is, fix the semantic value of a sentence relative to a context to be a structured n-tuple that includes as a constituent its semantic content, in the technical sense discussed, as well as assertoric content (see Chalmers 2011). In short, this proposal 'generalizes to the worst case', by assigning a very fine-grained semantic value to a sentence relative to a context, but one that contains enough information to extract everything one might need.

Whatever its other merits, this kind of proposal is irrelevant in the current theoretical context, and this is so for two reasons. The first is theoretical. As noted above, struc-

³⁷ Alternatively, instead of identifying compositional semantic content in a context with the horizontal, one might define it as a function from pairs of worlds to truth values, where the first element of the pair is the world of the utterance, and second the world of evaluation, that is (ignoring other potential features of context):

$$\mathbf{SC-S^*}: \quad \lambda w. \lambda w'. \llbracket \varphi \rrbracket^{\langle w, w' \rangle}$$

And then one could argue that assertoric content is determined as follows:

$$\mathbf{AC-S^*}: \quad \lambda w. \llbracket \varphi \rrbracket^{\langle w, w \rangle}$$

Though this proposal connects the two types of content, it suffers from the problem discussed above. **AC-S*** is not suited to play the role of assertoric content – it just is the diagonal content. (Thanks to B. Rabern, p.c.)

tured semantic contents (whether we call them propositions or not) are not compositional semantic contents in Lewis's sense. They do not compose in a function-argument sort of way with operators, and no significant *semantic* composition occurs with structured contents. Thus, to reiterate, structured fine-grained semantic values are not compositional semantic values in the sense of Dummett and Lewis.

The second reason the proposal is irrelevant in this context is that, even setting aside the aforementioned worry, the proposal does not vindicate the distinction between assertoric and compositional semantic contents. According to Dummett, Evans, and Stanley, assertoric content plays the role of the object of propositional attitudes and assertion, and semantic contents are compositional semantic values. The two notions are distinct, and so, any defense of the tradition must exhibit a compositional semantic value, on the one hand, and a suitable object of the attitudes, on the other. But the proposal under consideration does *not* do this – it promises a single object as an amalgamation of both, rather than two somehow related. Even if in the end this were right, it would not count as a vindication of the Dummett-Evans-Stanley position. In fact, this approach, far from salvaging the Dummett-Evans-Stanley position, is in essence another vindication of Identification.

To sum up, if assertoric and semantic contents are to be connected, yet distinct, they cannot be Lewisian, diagonal or structured propositions, or Chalmers' rich structured contents.

5. Conclusion

I argued that anyone who challenges Identification must still provide some sort of account of how semantic and assertoric contents are connected, and in this regard, I further argued, the tradition from Dummett and Evans continued by Stanley fails: the

straightforward way of establishing the connection proposed by Lewis is unavailable to them, as well as any plausible alternative. Thus, Stanley's attack on the Rigidity Thesis is unsuccessful. This failure, however, points to a deeper problem with Stanley's notion of assertoric content. No plausible notion of content can play the role of Stanley's assertoric content if it is to be related to compositional semantic content, as it must be if the two contents are to play an explanatory role in a theory of communication. In particular, the assertoric content cannot be Lewisian assertoric content, a horizontal proposition, or a diagonal proposition, or a structured proposition, or some other type of rich structured content.

There is a broader moral here. Many reasons have been advanced for positing differences between the semantic contents of uttered sentences and what these utterances communicate – not just based on considerations of operators, but also based on those of context-sensitivity. But for a semantic theory to play a role in an account of linguistic communication, the semantic contents it assigns to sentences must bear some clear relation to what is communicated by them. In the literature on context-sensitivity, some theorists hold that the semantic contents of uttered sentences are related to what they communicate via saturation (Soames, 2008). Others hold positions according to which semantic contents are propositions, and what is communicated are sets of propositions (Cappelen and Lepore, 2005). Here too one might raise worries about whether a tight enough connection has been forged between semantic and assertoric contents to justify the value of the semantic project. Often the mechanisms by which a connection is established are left inexplicit or are otherwise unconstrained. Pending a clear account of the connection, as well as a clear account of the two types of content, any such theory remains less than satisfactory.

Bibliography

- Bach, K.. (2003). Context ex Machina. Z. Gendler Szabó (ed.) *Semantics vs. Pragmatics* (pp. 15–44). Oxford: Oxford University Press
- Borg, E. (2004). *Minimal semantics*. Oxford University Press.
- Cappelen, H., & Lepore, E. (2005). *Insensitive Semantics: A Defense of Minimalism and Speech Act Pluralism*. Blackwell.
- Chalmers, D. (2004). Epistemic Two-Dimensional Semantics. *Philosophical Studies*, 118 (1-2), 153-226.
- Chalmers, D. (2011). Propositions and Attitude Ascriptions: A Fregean Account. *Nous* , 45 (4), 595-639.
- Chalmers, D. (2006a). The Foundations of Two-Dimensional Semantics. In M. Garcia-Carpintero, & J. Macia (Eds.), *Two-dimensional Semantics: Foundations and Applications* (pp. 55-140). Oxford University Press.
- Chalmers, D. (2006b). Two-Dimensional Semantics. In E. Lepore, & S. Barry (Eds.), *Oxford Handbook of Philosophy of Language* (pp. 575–606). Oxford: Oxford University Press.
- Davis, M., & Humberstone, L. (1980). Two Notions of Necessity. *Philosophical Studies* , 38 (1), 1-30.
- Dummett, M. (1973). *Frege: Philosophy of Language*. Cambridge, MA: Harvard University Press.
- Dummett, M. (1991). *The Logical Basis of Metaphysics*. Oxford University Press.
- Egan, A. (2010). Disputing About Taste. In R. Feldman, & T. A. Warfield (Eds.), *Disagreement* (pp. 247-292). Oxford University Press.
- Evans, G. (1979). Reference and Contingency. *The Monist* , 62 (2), 178-213.

- Evans, G. (1982). *The Varieties of Reference*. (M. John, Ed.) Calderon Press.
- Kamp, H. (1971). Formal Properties of 'Now'. *Theoria* , 37 (3), 227-274.
- Kaplan, D. (1989). Demonstratives. In J. P. Joseph Almog (Ed.), *Themes from Kaplan* (pp. 481-563). Oxford University Press.
- King, J. C. (1995). Structured Propositions and Complex Predicates, *Noûs* 29(4), 516–535.
- King, J. C. (1996). Structured Propositions and Sentence Structure, *Journal of Philosophical Logic* 25, 495–521.
- King, J. C. (2003). Tense, Modality and Semantic Values. *Philosophical Perspectives* , 17 (1), 195-246.
- King, J. C. (2007). *The Nature and Structure of Content*. Oxford University Press.
- Kripke, S. (1980). *Naming and Necessity*. Cambridge, MA: Harvard University Press.
- Lewis, D. K. (1979). Attitudes De Dicto and De Se. *Philosophical Review* , 88 (4), 512-543.
- Lewis, D. K. (1980). Index, Context and Content. In S. Kanger, S. Öhman (Eds.) *Philosophy and Grammar*. (pp. 79-100). Dordrecht: Reidel. Reprinted in D. K. Lewis, (1997). *Papers in Philosophical Logic Vol. 1.* . (pp. 21-44). Cambridge University Press..
- MacFarlane, J. (2005). Making Sense of the Relative Truth. *Proceedings of the Aristotelian Society*. 105(3), 321-339.
- Ninan, D. (2012). Proposition, Semantic Values, and Rigidity. *Philosophical Studies*, 158 (3).
- Ninan, D. (2010). Semantics and the Objects of Assertion. *Linguistics and Philosophy*, 33 (5).
- Rabern, B. (2012a). Against the Identification of Assertoric Content With Compositional Value. *Synthese* , 189 (1), 75-96.

- Rabern, B. (2012b). Propositions and Multiple Indexing. *Thought: A Journal of Philosophy*, 1 (2), 116-124.
- Salmon, N. (1986). *Frege's Puzzle*. Cambridge, MA: The MIT Press/Bradford Books.
- Salmon, N. (2003). Tense and Intension. In A. Jokić, & Q. Smith (Eds.), *Time, Tense, and Reference* (pp. 107-154). Cambridge, MA: The MIT Press.
- Salmon, N. (1989). Tense and Singular Propositions. In J. P. Joseph Almog (Ed.), *Themes From Kaplan* (pp. 331-392). Oxford University Press.
- Schaffer, J. (2012). Necessitarian Propositions. *Synthese*, 198 (1), 119-162.
- Soames, S. (2002). *Beyond Rigidity*. Oxford University Press.
- Soames, S. (1986). Direct Reference, Propositional Attitudes and Semantic Content. *Philosophical Topics*, 47-87.
- Soames, S. (2008). The Gap Between Meaning and Assertion: Why what we literally say often differs from what our words literally mean. In *Philosophical Essays Vol 1, Natural Language: What it Means and How We Use It* (pp. 278-297). Princeton University Press.
- Soames, S. (2010). *What is Meaning?* Princeton University Press.
- Stanley, J. (2002). Modality and What is Said. *Philosophical Perspectives*, 16, 321–344.
- Stanley, J. (1997a). Names and Rigid Designation. In B. Hale, & C. Wright (Eds.), *Companion to the Philosophy of Language* (pp. 555-585). Oxford: Blackwell Publishers Ltd.
- Stanley, J. (1997b). Rigidity and Content. In R. Heck (Ed.), *Logic, Language and Reality: Essays in Honor of Michael Dummett* (pp. 131-156). Oxford University Press.
- Yalcin, S. (2012). Bayesian Expressivism. *Proceedings of the Aristotelian Society*, 112 (2), 133-160.
- Yalcin, S. (2007). Epistemic Modals. *Mind*, 116 (464), 983-1026.

Yalcin, S. (2015). Semantics and Metasemantics in the Context of Generative Grammar.
In *Metasemantics: New Essays on the Foundations of Meaning* (pp. 17-54). Oxford
University Press.