

Content and Quotation

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There is evidently a syntactic and semantic distinction between certain kinds of quotational contexts, as in *MacArthur said "I shall return"* and *the string "ran whole the quickly home way he" is not grammatical*. Minimally, the first relates a subject to a sentence, whereas the second predicates something of a string introduced as the subject. As such, we should expect these two paradigms to behave differently with respect to various syntactic and semantic features. With respect to the semantics, this expectation is in fact borne out. The first kind of quotation requires that the quoted material somehow be interpreted, while the second apparently does not (the words appear to refer only to themselves). Just for starters, such examples as *Jones said "Smith rules the moon"*, and *he does* cannot guarantee that *he* picks up *Smith* as its referent instead of the word *Smith* if the words occurring in the quotational context are not interpreted. This paper explores the differences between these two types of quotation and offers a semantic theory explaining the differences not distantly related to Larson and Ludlow's (1993) theory of Interpreted Logical Forms.

1. Introduction

Quotational contexts exert at least two different kinds of syntactic and semantic influence on the sentences in which they occur. The first, noted by Frege (1952) and many others, concerns the natural ability of speakers to turn language on itself. This happens when a speaker uses her own words to talk about those of another. If Mary says

(1) MacArthur said "I shall return",

then her words can be taken as attributing a specific utterance to MacArthur, one which includes his having said that he shall return by using the words *I shall return*.

A second sort of quotational context is exhibited by my last sentence, namely, as referring to a word, or string of words, in isolation from their production. There is, in such contexts, no suggestion that anyone has ever uttered them, that anyone ever will, or that anyone cares. Consider

(2) The string 'ran whole the quickly home way he' is not grammatical.

(2) is, oddly enough, perfectly grammatical and has perfectly definite truth conditions, even though the quoted material is ungrammatical and more or less senseless.

A possible third sort of quotational context is really a "quotational" context, in that the question of its being a genuine *quotational* context is not clear. So-called scare-quotes are seemingly best construed as an alleged instance of a quotational context, in which case their not being what they purport to be exhausts their interest. Thus, they will not be given further consideration.

An adequate theory of quotational contexts in natural language must at least explain how the contexts exhibited in (1) and (2) above are related and how such contexts affect truth conditions.¹ In this paper, I shall propose such a theory and show how it relates them to indirect discourse attributions paradigmatically expressed by the *says that* construction.

2. Quotation and truth conditions

Semantic theories of natural language stand or fall based in part upon the explanations and predictions in which they issue concerning the observable semantic phenomena exhibited by the natural language in question. Such theories typically base their generalizations on both empirical data and on more centrally theoretical foundations. These latter foundations affect the nature and form of the issued explanations and predictions, but the empirical data is normally considered to constitute a genuine domain more or less independent of particular theoretical viewpoints. It is, for example, a fact beyond dispute that *flying planes can be dangerous* is ambiguous or that *she* in *Mary thinks she's crazy* can be coreferential with *Mary*, and so can refer to *Mary*. Consequently, any particular semantic theory is assessable by how well its generalizations capture such facts. Classes of sentences, for example, which the semantic theory is intended to cover but which do not conform to its generalizations constitute a strike against that theory.

I shall, without argument, adopt a broadly Davidsonian conception of a natural language semantic theory: the semanticist's task is to prove Tarski-style truth theorems of the familiar form: 's is true in L iff p', where s is a structural description of a sentence of the object language L and p is a place-holder for a statement in our meta-lan-

guage of the conditions under which s is true.² Thus, my central aim throughout is to provide characterizations of (classes of) sentences called logical forms in a non-technical way – though always with formalization in mind; see the Appendix – which lead to accurate assignments of the referential semantic values of the classes of sentences being characterized.

With this theoretical starting point in mind, consider now distinguishing this enterprise from another related but rather distinct enterprise: pragmatics.

Broadly speaking, pragmatics is the study of the propositional attitudes speakers have when they utter sentences. It is, therefore, the study of the use to which speakers put their utterances and the ends they hope to achieve. Semantics, on the other hand, concerns sentences in isolation of the attitudes responsible for their production and inquires after the nature of the semantics of the sentences themselves.

Suppose I come home one day and find my favorite flannel shirt ripped to shreds and strewn across the living room floor. The most plausible explanation for this atrocity concerns a rather mischievous canine with whom I've had the misfortune of living. I say, knowingly, *Somebody has been naughty*. Clearly, I intend to refer to the dog by uttering *somebody*. But equally clear is the fact that *somebody* is a quantifier, not a singular term, and so does not refer. The (semantic) truth conditions of the sentence I uttered are, roughly,

(3) $(\exists x)(x \text{ has been naughty})$.

Certainly I intended to say something more than just what (3) says. This is a simple case in which the pragmatics of an utterance come apart from its semantics.³

There are many such cases. In thinking about truth conditions, we must be very careful to distinguish between those belonging to sentences and those belonging to pragmatically implied sayings, beliefs or intentions. When it is claimed that quotational contexts affect truth conditions, it is claimed that such contexts are parts of sentences abstracted from the implications of uttering those sentences. Hence, I take as implausible the view that quotational contexts are of merely pragmatic importance in which the appearance of semantic affectation is to be explained away in those terms.⁴

A quotational context is one in which the words or phrases occurring in that context have a non-standard interpretation at the level of logical form. Such contexts need not be marked syntactically, though typically quotation (punctuation) marks are present. Often,

the question of whether words are occurring in a quotational context is settled by features of the use of those words on the particular occasion. But once this has been determined, we can inquire into the precise effect the context has on the sentence's truth conditions as uttered. A verbal utterance of (1), for example, is ambiguous (assuming the quotation marks aren't "pronounced"); and features of its use or the utterer's intentions or actions may be the disambiguating factor. One reading attributes an utterance of a particular sentence to MacArthur which is about him, and the other attributes an utterance of some sentence or other to him which is about the speaker. Correspondingly, we have two distinct logical forms, respectively represented roughly as

- (4) $S(\text{MacArthur, "I shall return"})$
 (5) $S(\text{MacArthur, I shall return})$

where S is the saying relation. Whether, on a particular occasion of utterance, (4) or (5) is intended is not relevant to determining the truth conditions of either one. That enterprise proceeds in isolation from such intentions.

Similar remarks apply to (2). Again, there are two non-equivalent logical forms which might be intended on a particular occasion of utterance:

- (6) $U(\text{the string 'ran whole the quickly home way he'})$
 (7) $U(\text{the string ran whole the quickly home way he})$

where U is the property of being ungrammatical. Admittedly, (7) can scarcely be interpreted, and so in most contexts it will not be the intended reading. But it is a reading nonetheless.

The central task of a theory of quotation must explain how the pairs (4)-(5) and (6)-(7) differ in truth conditions and how, if at all, the truth conditions of sentences such as (1) and (2) differ from each other. In the next section, I turn to a possible answer: Davidson's (1984a) demonstrative theory of quotation.

3. Davidson's theory

Davidson's theory of quotation is strikingly similar to his paratactic theory of indirect discourse (see Davidson 1984b). Both theo-

ries discern a demonstrative element at logical form not obviously present on the surface; both theories make use of a similarity relation between properties of the words produced by the attributer and properties of the words produced by the addressee; and both theories render a similar analysis of so-called opaque contexts – contexts in which substitutivity of words which are co-referential in other ("normal" or "transparent") contexts does not logically entail that truth-value is preserved.

Davidson's theory rests on a sharp distinction between word-tokens and word-types. A word-type is, roughly, an abstract shape property instantiated by word-tokens. Quotational contexts refer to the abstract shape of a word or string of words by demonstrating a token which has that shape. So, for example, consider:

- (8) Jones said "cholesterol is good for a body".

The quoted material is a token string of words with a certain shape, and that shape is referred to by demonstrating the token. The logical form paraphrase of (8) is, therefore:

- (9) Jones said, using words which are same-shaped with those, that cholesterol is good for a body.

Here, the demonstrative *those* refers to the shape of the demonstrated token *cholesterol is good for a body* as it occurs in (9). The same-shape relation plays an analogous role to same-saying in Davidson's paratactic account, the difference being that in the former case shape (or sound) is at issue while in the latter it is content.

The demonstrative theory is interesting for a number of reasons. The most important of which is that in (9), for example, the sentence *cholesterol is good for a body* receives its normal semantic interpretation (or at least it does once the paratactic theory is applied to it). Importantly, this allows Davidson to account for such sentences as

- (10) Jones said "cholesterol is good for a body", but it isn't

where *cholesterol* and *it* are co-referential. Any view which does not interpret words in quotational contexts as normal simply cannot explain this co-reference. For example, Washington's (1992) identity theory wherein the word *cholesterol* in (10) is taken to refer to itself, interprets the second conjunct as saying something about the word *cholesterol* (as if uttering it too much were not good for you).

Similar failures occur whenever an element outside the quoted

sentence attempts to reach into the quotation to acquire its semantic value. The example above, (10), depends upon a strict dependency between pronoun and antecedent noun. The same holds true of (11):

- (11) The sign says "George Washington, slept here", but I don't believe he, really ever did (Barbara Hall Partee 1973, p. 412).

But there are other possibilities. Consider further examples cited by Partee:

- (12) Whenever Fred sighs "Boy, do I need a drink", he expects you to fix him one.

- (13) What he actually said was "It's clear that you've given this problem a great deal of thought", but he meant quite the opposite.

- (14) When you said, "You won't be able to answer three of the questions", I guess I took it the wrong way.

- (15) "I talk better English than the both of youse!" shouted Charles, thereby convincing me that he didn't.

(11)-(14) exhibit a quite striking range of semantic dependency between quoted and unquoted material. They suggest that quotational contexts are sometimes not semantically inert. (15) makes a slightly different point, viz., that what quoted material refers to may include its phonological properties.⁵ In any event, the identity theory cannot obviously account for such sentences.

A second feature of the demonstrative theory is that word-types are also referred to in quotational contexts. This makes it easy to see why words occurring in quotational contexts cannot be substituted with co-referential words while preserving truth. And finally, Davidson's account makes use of word-tokens, so that the following kinds of inferences are blocked:

- (16) Jones said that cholesterol is good for a body

- (17) So, Jones said "cholesterol is good for a body"

Even if the sentential complement in (16) somehow refers to the word-types occurring there, that would not be enough to block the inference. Apparently, only word-tokens are sufficient for the task.

These features of Davidson's theory are, I think, essentially on the right track. There is, then, nothing in the essentials of the theory that we should object to. Nevertheless, the demonstrative theory is only the first step in arriving at the full logical form. Sentences like (9) contain so-called *that*-clauses, or sentential complements. And we may rightly inquire into the logical form of such sentences. It is this additional analysis which creates difficulties for Davidson.

Davidson's solution is the paratactic theory. According to that theory sentences containing *said that* are really composed of two distinct sentences paratactically joined. So, for example, the sentence

- (18) Arnie said that Jack Nicklaus plays golf

has the logical form

- (19) Arnie said that. Jack Nicklaus plays golf

in which the *that* functions as a demonstrative referring to the utterance (or inscription) that follows it. The second sentence occurs as it normally would with its normal semantic value, except that we are not to understand the utterer as asserting anything by it. This division of (18) into two sentences enables Davidson to claim that substituting *the Golden Bear for Jack Nicklaus* potentially affects only the truth of the first sentence. Since the second occurs with its normal semantics, that sentence remains unaffected by the substitution. In this way, Davidson achieves his aim.

Someone who utters (18), then, is in effect producing an example of an utterance and asserting that Arnie said it. Davidson's gloss of this is something like

- (20) $(\exists x)(\text{Arnie's utterance } x \text{ and my utterance of 'Jack Nicklaus plays golf' make us samesayers})$

Note that this is not intended to be the logical form of sentences containing *says that*. That is, we are not to suppose that such sentences contain hidden quantifiers or conjunctions. Nor are we to suppose that samesaying is a technical notion in semantics, for it is instead an unanalyzed primitive occurring outside semantics. (20) gives, rather, more of the flavor of what someone says in uttering sentences like (18). It is a heuristic to help us understand what the logical form can be used to say.

There are a number of more or less well-known problems with the paratactic theory which I shall not focus on. The discussion is

intended more to motivate a more general claim, viz., that sentential complements seemingly must not only be interpreted but that they must be interpreted in a particular way.

The paratactic theory, it appears, has difficulty explaining the semantic connections in sentences such as the following, where the indices represent co-reference in (21) and (22) and a bound variable construction in (23):

- (21) Arnie_i said that he_i'll win the Masters
 (22) Jack_i said that those irons have failed him_i
 (23) Everyone_i said that he_i will win.

The problem is that, although sentential complements receive their normal interpretation, they do not do so in *the context of the sentence in which they occur*. The paratactic theory attributes no logical or semantic relations between elements in sentential complements and other elements of the sentence. The only semantic relation is that of demonstrative reference to an utterance (or an act of uttering). Once a sentential complement gets divorced from its containing sentence in this way, certain elements, such as bound variables, are barred from playing their normal role. This is obviously the case with sentences like (23). I suppose a little ingenuity could patch the difficulty the others raise, but to do so would require constructs of an unpleasantly high degree of complexity.

That the paratactic theory attributes no semantic relations between elements in sentential complements and other elements of the sentence causes other difficulties noted by Segal (1989), following Higginbotham (1986). The sentence

- (24) Everybody said that they love Arnie

is ambiguous. Roughly, it can mean that each person said something like *they love Arnie* of some group of people, or it can mean that each person said of herself that she loves Arnie, perhaps uttering something like *I love Arnie*. Perhaps this latter can be represented as:

- (25) Everybody_i said that they_i love Arnie.

On the first reading, *they* is not bound by the quantifier, and on the second reading, it is so bound. But only the first reading is available after the paratactic split, thus:

- (26) Everybody said that. They love Arnie.

In general, the paratactic theory will have difficulty explaining why ambiguous pronouns in sentential complements are ambiguous in all those cases where any of the readings are available because of the embedded context in which they occur. Such examples are problem cases for the paratactic theory precisely because the split into two distinct sentences (or utterances) seals off the second from any systematic structural semantic relations with the first.

The lesson learned here is important, for it shows that merely allowing sentential complements to have their normal semantic value is not enough. Sentential complements, it seems, need to have that value in *the context of occurring in sentences containing sentential complement taking verbs*.

By way of summary up to this point, we have seen that the essential features of Davidson's demonstrative theory of quotation are fundamentally sound. We have also seen that that theory is not a full account of the logical form of sentences containing quotational contexts, and that the paratactic theory must also do some work. And it is in that regard that the analysis fails. So the task is to retain the core of Davidson's theory, avoid the difficulties introduced by the paratactic theory, and explain the differences between

- (27) MacArthur said "I shall return"

and

- (28) The string 'ran whole the quickly home way he' is not grammatical.

It is to that task that I now turn.

4. Quotation, expressions, and interpreted logical forms

Sentences such as (27) and (28) exhibit two distinct semantic functions which quotational contexts can instantiate. The first is that quotational contexts both "mention and use" linguistic entities of some sort. The second is that quotational contexts only "mention" linguistic entities. Accordingly, I shall offer a two-part theory of quotation.

For contexts of the first sort, quoted expressions refer to their interpreted logical forms,⁶ and for contexts of the second sort, quoted

expressions refer to themselves. There are three questions which this proposal immediately raises:

- (Q1) What is an expression?
 (Q2) What is an interpreted logical form and what is the interpreted logical form of expressions occurring in quotational contexts?
 (Q3) How do we identify each context so that the appropriate interpretation rule can be applied?

(Q1) An expression-token is either a phonetic or an orthographic object, depending on whether the expression is spoken or written, which typically has syntactic properties. Such disparate physical phenomena as sound patterns or marks on a surface count as a token expression. Expression-types are individuated by the phonetic or orthographic properties which token expressions possess. This contextual is probably too weak for some purposes, but it will do for now. The reason is that the point at issue concerns the explanation of why one use of quotation requires that the quoted expressions remain uninterpreted and another requires that they be interpreted. That is, whatever it is that is uninterpreted includes at least a phonetic or orthographic token, and often includes the types as well. The claim is, then, that quoted expressions of the second sort refer to themselves, whether to tokens or types.

(Q2) The logical form (LF) of a sentence is a representation for which semantic interpretation is most suited. The representation makes explicit the syntactic categories contained in a sentence which are semantically relevant. The representation also assigns scope to various structures. This is generally required for various sorts of disambiguation. For example, the logical form of the sentence

- (29) Everyone loves someone

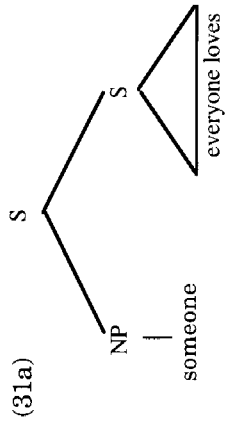
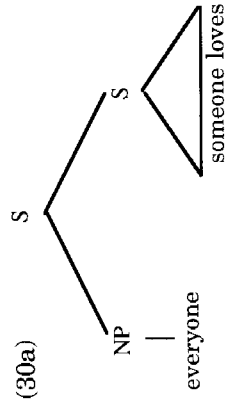
must allow a disambiguation between

- (30) $(\forall x)(\exists y)(x \text{ loves } y)$

and

- (31) $(\exists y)(\forall x)(x \text{ loves } y)$.

Scope is assigned in (29) by means of a movement operation on sentences called quantifier raising. The existential quantifier may raise either to the beginning of the sentence or to the front of the verb. The resulting structures for (30) and (31) are diagrammed (roughly) thus:



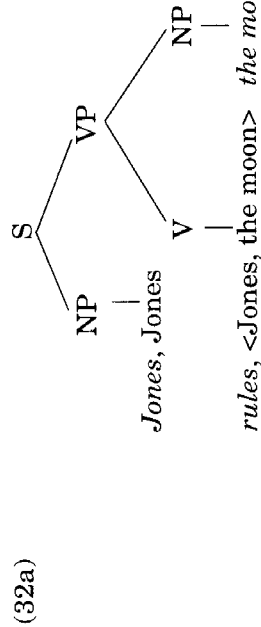
In general, the scope of a quantifier is determined by how far up the tree it occurs, taking scope over the elements below it. So in (30) *everyone* has wide scope and in (31) *someone* has wide scope.

Logical form is a level of linguistic representation which is not itself a specification of the semantic value of sentences, although in some – perhaps all – cases, deriving LFs may require some semantic information. Logical form is, rather, a representation of grammatical form plus expressions (or lexical material) plus phonological properties off of which semantic value may be transparently and unambiguously read.

Once all semantically relevant representational elements and positions are made explicit, the sentence can be interpreted according to the semantic axioms expressed in a compositional theory of truth. The result is an interpreted logical form (ILF). The ILF of a sentence is represented as a tree (or, as in the Appendix, in a labelled bracket notation) which makes explicit the lexical constituents, syntactic categories and interpretations of the sentence.⁷ For example, the ILF for

- (32) Jones rules the moon

is partially represented as:



Familiar syntactic categories are represented as capital letters occurring at the non-terminal nodes, expression-types are in italics and the extra-linguistic semantic values are represented by non-italicized words.⁸ The claim is, then, that interpreted quotational contexts refer to the (type and token – see below) expressions and syntactic categories with their interpretations, that is, their ILFs.

(Q3) The two-part theory of quotation must state not only how the two parts are related, but also how to apply the appropriate interpretation rule for each kind of context. The two rules are (i) if an expression is quoted, then it refers to itself and (ii) if an expression is quoted, then it refers to its interpreted logical form. The theory requires a way of specifying the antecedents of these rules so that the correct semantic value results for the context to which the rule is applied.

Consider the two different sorts of contexts which a theory of quotation must account for, the first is uninterpreted and the second interpreted:

(33) 'Hilary is well-dressed' is a sentence

(34) Clinton said "Baird obeyed the law", but she didn't.

Notice that there is a key syntactic difference between these two sentences: (34) but not (33), contains a verb that takes a sentential complement, viz., *said*. In general, whenever a matrix ("outer") sentence contains such a verb where the sentential complement occurs in a quotational context, the context must be interpreted. If the matrix sentence does not contain a verb that takes a sentential complement, then the quotational context, if any, must remain uninterpreted. This generalization appears to be confirmed by linguistic evidence of the sort exhibited in (33) and (34).

The two rules, then, may be stated thus:

(R1) If an expression occurring in a sentence that does not contain a sentential complement is quoted, then it refers to itself.

(R2) If an expression occurring in the complement of a sentence that contains a sentential complement is quoted, then it refers to its interpreted logical form.

The conditions for applying (R1) and (R2) do not conflict. Their antecedents are mutually exclusive. The answer to (Q3), then, is just (R1) and (R2).⁹

There remains, however, the task of showing how, once applied, the rules actually succeed in computing the correct semantic values of the sentences containing quotational contexts. For contexts of the first sort, the solution is about as straightforward as the solution given by the identity theory. (33) is true iff the string of expressions *Hilary is well-dressed* is a sentence.

The more interesting solution concerns contexts of the second sort in which the quoted expression refers to its ILF. Consider again (34):

(34) Clinton said "Baird obeyed the law", but she didn't.

The problem with other theories of quotation is that the truth conditions of (34) rendered by them are simply incorrect. The expression *she* in (34) is anaphoric with *Baird*. If the semantic values of quoted expressions do not include, at least, their normal value, then we might paraphrase the interpretation thus:

(35) Clinton said "Baird obeyed the law", but 'Baird' didn't.

This makes sense, to be sure. But not the right sense. We want, rather, an interpretation according to which the second conjunct is true iff Zoe Baird did not obey the law. This is impossible unless the quoted expression *Baird* in (34) has (at least in part) its normal interpretation, viz., as referring to Baird.¹⁰

Taking the quotational context exhibited in (34) as referring to an ILF provides a straightforward determination of the correct truth conditions. There is no bar against anaphoric relations like:

(36) Clinton said "Baird_i obeyed the law", but she_i didn't

since *Baird* has as part of its referent, the woman Zoe Baird.

On this view, the quotation marks in direct discourse are lexical items which affect the identity of the ILF only insofar as they affect the lexical material occurring at the terminal nodes. Quotation marks in such contexts do not function to introduce new extra-linguistic entities into the determination of the semantic value of the entire sentence. Lexical material and extra-linguistic semantic values are introduced by the rule (R2), stated above, which produces an ILF. Quotation marks do, however, have a role to play in the recursive definition of ILFs (see the Appendix). For example, the ILF for a quoted sentential complement is, at the terminal node, at least three-place: <lexical type, objectual content,

lexical token>. The lexical token is computed by a function which operates on the lexical type to output a token of that type. This captures the intuition that, in direct discourse quotation, words are, at the very least, tokened.

Notice that according to (R1) and (R2), ILFs are only introduced into the semantics of sentences which in fact contain sentential complements. Thus, in sentences like

- (37) Arnie said "a the at through"

the complement is not a sentence, and so, rightly, does not receive its ILF as its referent. In the other direction, may it not happen that non-sentential complements must sometimes be interpreted? For example:

- (38) 'Hillary obeyed the law' is a sentence about her that Clinton uttered.

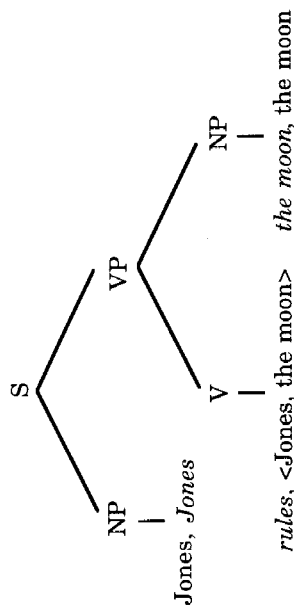
On the surface, it appears that *Hillary* as it occurs in (38) needs to receive its normal referent, i.e., the woman herself, in order for the pronoun *her* to receive its appropriate interpretation. But it strikes me that pronouns in such contexts are pronouns of laziness (see, e.g., Geach 1962). A pronoun of laziness merely stands proxy for an element which it recopies, and of course once recopied, it can be interpreted as usual.

5. Conclusion

Many philosophers who think about quotational contexts believe that there is some link between them and the familiar attitude attribution sentences involving *said that*, *believes that*, etc. The link is in fact quite close: ILFs are the referents of that-clauses.

The semantic axioms in a compositional theory of truth for sentential complement-taking verbs introduce ILFs into the statement of the truth conditions for sentences containing such verbs. Resulting T-sentences take the form:

- (39) 'Smith said that Jones rules the moon' is true iff Smith said



In short, ILF theory takes *said* as expressing a relation between an individual and an ILF. This accounts for (i) intersubstitutivity intuitions and (ii) the requirement that words in that-clauses be interpreted.

From the point of view of formal semantics, the theory is impeccable. But, then again, so is direct reference.¹¹ So let us see how the theory accounts for (i) and (ii) above.

The inclusion of lexical material in the objects of the attitudes allows a straightforward way for a semantic distinction between

- (40) Lois said that Superman is Superman
and
(41) Lois said that Superman is Clark Kent.

This follows directly from the fact that the ILFs for each embedded content sentence are distinct, so that the object to which Lois is attributed as being saying-related differs in the two sentences. This allows for both (40) and (41) to differ in truth value at the same time and without irrationality on the part of Lois.

With regard to (ii), ILF theory accounts for anaphoric relations in which a pronoun seeks its antecedent which occurs inside a that-clause:

- (42) Clinton said that Baird_i obeyed the law, but she_i didn't.

The same mechanism explains the possibility of such an interpretation in the same way as it does for quotational contexts in sentential complements.

The ILF theory of direct discourse quotation states that quoted expressions refer to their interpreted logical forms. The ILF theory of

that-clauses states that expressions occurring in the content sentence likewise refer to their interpreted logical forms. This does not mean, however, that one can infer

(43) Smith said "Jones is crazy"

from

(44) Smith said that Jones is crazy¹²

In (43), the ILF referred to is at least three-place at the terminal node. In that sentence, the content of the embedded, quoted sentence is the triple consisting of the word-types, their normal value, and the tokens of those word-types. In (44), on the other hand, the content is simply the word-types and their normal semantic value. This difference in reference secures that the inference is blocked.

There is much more which can be said about ILFs and their application in compositional theories of truth. I have tried to indicate that their merits in indirect discourse contexts are recreated in certain quotational contexts.¹³

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Appendix: L & L semantics with quotation

Larson and Ludlow (1993) present a formal semantic theory for sentential complement taking verbs which can easily be adapted to incorporate the ILF theory of direct discourse quotation and the theory of unembedded quotation. I should note that the definition of an ILF presented below is a slightly modified version of their original definition (Thanks to Gabe Segal for pointing out the usefulness of modifying the definition). An abbreviated version of their formal semantics, enhanced to incorporate quotational contexts, is as follows, where all free variables throughout are to be taken as universally quantified and 'Val' is the three-place valuation predicate which assigns semantic values to words and phrases with respect to sequences of objects.

Fragment 0

Lexical Items:

- (1) (a) Val (x, Jones, σ) iff x = Jones
- (b) Val (x, Smith, σ) iff x = Smith
- (c) Val (x, Stevens, σ) iff x = Stevens
- (d) Val (<x, y>, admires, σ) iff x admires y

Syntactic Categories:

- (2) (a) Val (true, [_S NP VP], σ) iff for some x, Val (x, NP, σ) and Val (x, VP, σ)
- (b) Val (x, [_{VP} V NPI], σ) iff for some y, Val (<x, y>, V, σ) and Val (y, NP, σ)
- (c) Val (x, [_{α} β], σ) iff Val (x, β , σ)
(where α and β range over syntactic categories)
- (d) Val (x, [_{α} γ], σ) iff Val (x, γ , σ)
(where α ranges over syntactic categories and γ ranges over lexical items)

Quotation:

For $n \geq 1$,

- (3) (a) Val (x, [_{NP} ' ' ^ \wedge γ_1 γ_2 ... γ_n ' ' ^ \wedge ' '], σ) iff x = γ_1 γ_2 ... γ_n
- (b) Val (true, [_S ' ' ^ \wedge γ_1 γ_2 ... γ_n ' ' ^ \wedge ' '], σ) iff Val (true, [_S γ_1 γ_2 ... γ_n], σ)

Definition:

Val (true, S) iff Val (true, S, σ) for all sequences σ .

Fragment 1 (Intensional Contexts)

Lexical Items:

- (4) (a) Val (<x, y>, believes, σ) iff x believes y
- (b) Val (<x, y>, said, σ) iff x said y

Syntactic Categories:

- (5) Val (x, [_{VP} V S], σ) iff for some y, Val (<x, y>, V, σ) and y = ILF(S) with respect to σ

Definition:

- (6) Let α be a phrase marker with root S, let σ be a sequence, let β be a sub-phrase marker of α , let γ be a lexical item, and let $t(\gamma)$ be a token occurrence of γ .
- (I) If there is an x such that Val (x, β , σ) and Val (x, [_{β} γ], σ), and for all y, Val (y, β , σ) and Val (y, [_{β} γ], σ) iff y = x, and
 - (a) β is a terminal (syntactic) node, then ILF(β) = < β , x>
 - (b) [_{β} γ] (i.e., γ is unquoted), then ILF(γ) = < γ , x>
 - (c) [_{β} " γ "] (i.e., γ occurs inside quotes), then ILF(γ) = < γ , x, t(γ)>
 - (d) β is [_{τ} δ_1 δ_2 ... δ_n] for $n \geq 1$, then ILF (β) = [_{< τ , x>} ILF(δ_1) ILF(δ_2) ... ILF(δ_n)]

- 4 See, e.g., Clark and Gerrig (1990).
- 5 A point similar to this is made by Larson and Ludlow (1993) in a different context. Its importance is discussed below.
- 6 I do not intend any deep sense of reference according to which quoted expressions refer. Reference is merely a label for the assignment of semantic values to expressions. Also, as will be made clear, the interpreted logical form of a quoted expression is not exactly the same as the interpreted logical form of an unquoted expression.
- 7 Larson and Ludlow (1993) stress the fact that ILFs encode phonological properties. This is important for sentences like (15) above and *Smith said "I don't have a *Hahvahd* accent", thereby convincing me he did*. Such examples cast considerable doubt on traditional theories of quotation, although Davidson's view could be adapted to include same-sounded in addition to same-shaped. Also, see Larson and Segal (1995) for a suggestion of a more robust conception of ILFs.
- 8 My intention here and below is not to present a complete theory of interpreted logical forms, so much as to describe its basic ideas and elements. I am more interested, for present purposes, in its ability to resolve various philosophical puzzles about the semantics of quotation. For a fuller and more formal treatment, see Larson and Ludlow (1993) and Larson and Segal (1995).
- 9 The basic idea behind these rules is presented in Larson and Ludlow (1993).
- 10 One interpretation of Frege's view is that quoted expressions refer to themselves. Frege expresses it in the following way: "If words are used in the ordinary way, what one intends to speak of is their reference. It can also happen, however, that one wishes to talk about the words themselves or their sense. This happens, for instance, when the words of another are quoted. One's own words then first designate words of the other speaker, and only the latter have their usual reference. We then have signs of signs. In writing, the words are in this case enclosed in quotation marks. Accordingly, a word standing between quotation marks must not be taken as having its ordinary reference" (1952, pp. 58-9). The passage, however, is not completely supportive of that interpretation, for the short disjunct "or their sense" suggests a two-part theory of the sort I am articulating. See Parsons (1982) for a dissenting view about Frege and quotation.
- 11 See Schiffer (1987b) for an argument against direct reference which does not apply to ILF theory.
- 12 See Jonathan Bennett (1988, pp. 411-13) for a nice discussion concerning why such inferences had better not go through.
- 13 Thanks to Richard Mendelsohn, David Rosenthal, Stephen Schiffer, and Deborah Mandelbaum Seymour for commenting on various drafts in various states of disarray. Thanks especially to Peter Ludlow for his extensive comments and suggested revisions, and for kindly asking me to contribute this paper to the current issue.

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