HOW CAN YOU BE IN TWO PLACES AT ONCE WHEN YOU'RE NOT ANYWHERE AT ALL?

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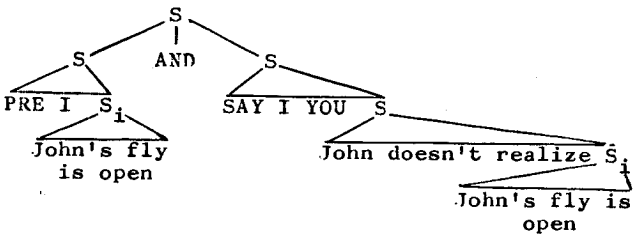
A few years ago I presented to the CLS a paper on the treatment of presupposition (Morgan 1969). It now seems to me that one of the conclusions of that paper was clearly incorrect. The conclusion I have in mind is that the presuppositions of a sentence are to be represented as complements of an abstract performative verb of presupposing conjoined to the left of the sentence, as in (2) as a putative representation for (1).

(1) John doesn't realize that his fly is open.

(2)



First let me point out what I think is wrong with this analysis. For one thing, presupposing is not really performative in the usual sense. By saying a sentence which has X as a presupposition, one does not thereby presuppose X. Presupposing is a state, not an act or event. Besides, identifying the predicate PRE of (2) with English verbs like presuppose, assume, or even believe is a mistake, in that they are too weak. In another paper (Morgan 1973) I have tried to show that if the relation of presupposition is to be represented in propositional form, it will require a predicate as strong as true, but a two-place predicate of truth in a world. Clearly it makes no sense to speak of true as performative.

Furthermore, the claim that the presupposition is conjoined to the sentence as an argument of AND is without any clear motivation (except, perhaps, a priori decisions about the form of semantic representation; this point will be elaborated below). And given no motiva-

tion for AND, there is no motivation for the claim that the presupposition is to the left of the sentence which presupposes it, since the order arguments in the earlier paper hold only for AND. With other conjunctions, the initial assertion of a proposition may follow sentences which presuppose that proposition, as in (3) through (10)[1].

(3) a. It's raining, and John realizes that it is.
b.*John realizes that it's raining, and it is.

(4) a. John has a son, and his son is bald.
b.*John's son is bald, and he has a son.

(5) a. John doesn't realize that it's raining, but it is.
b. John doesn't realize it, but it's raining.

(6) a. Although John doesn't realize that it's raining, it is.
b. Although John doesn't realize it, it's raining.

(7) John doesn't realize that it's raining, although it is.

(8) Oedipus, who didn't realize it, was finally told yesterday that Jocasta was his mother.

(9) Although John's theory stinks, he does in fact have a theory.

(10) The answer to this question is difficult, but there is an answer to it.

Lately I have been working on the question "should (or can) presuppositions be considered to be part of the logical structure of a sentence, and, if so, how can they best be represented?" One of the ways I have been exploring this question is by assuming that presuppositions should be considered part of logical structure, and then trying to determine how to go about representing them. In this exploration I have been led to wonder why I said what I said in the earlier paper, on the assumption that the conclusion I reached there, though incorrect, was somehow the result of some rational process, rather than the product of Brownian motion in the brain. In the process I was able to figure out what (probably) moved me, by determining what sort of assump-

tions would lead to such a conclusion, and I also discovered that many of the problems that plagued my attempts to figure out how presupposition really ought to be represented were in fact the result of assumptions about the form and content of semantic representation which, as far as I know, have no empirical justification.

Each of the assumptions in the Appendix has been used, either alone or with others, to motivate some analysis, although rarely explicitly.[2] What I want to do in the remainder of this paper is to raise two questions: first, what sort of empirical motivation is there for any of these assumptions, and second, are the assumptions consistent? The first question is, I think, a real question, but one that is unanswerable at this point. No doubt some linguists will be baffled by the question. Many linguists have trained themselves to think in the formal system that accompanies these assumptions, and therefore may find it hard to see how things could be otherwise. Let me make it clear that I am not questioning the existence of the intuitive semantic notions involved in these assumptions. I think it is clear that there is psychological reality to notions like "scope", "binding", "predicate" and so forth. What I am questioning is the soundness of the assumptions about exactly how these notions are to represented formally. For example, there is a type of argument for lexical decomposition based on the fact that adverbs can in certain cases be understood to "modify" or have in their "scope" only a part of the meaning of some lexical item in the sentence (see Morgan 1969a); for instance, the reading of (11)

(11) John almost killed Harry.

where almost is understood to modify only 'die', or the reading of (12) where until is understood to modify not the verb hide, but the result part of the meaning of that verb.

(12) Hide the grass until the police leave.

On this reading (12) is not an instruction to continuously or repeatedly hide the grass throughout the period during which the police are present, but to arrange that, until the police leave, the grass be out of sight. Such facts can be interpreted to motivate certain types of

analyses of the pre-lexical structure of verbs like hide and kill. But notice that these analyses rest on the assumption that the semantic relation "X modifies Y" or "Y is in the scope of X" is to be formally represented in terms of sisterhood; that is, X and Y are sisters in semantic representation. Without this assumption, the argument does not go through.

On one hand, the assumption seems natural, but on the other hand, I can see no reason to believe it. How can such a matter be made an empirical question? Presumably the choice of method of representation has empirical consequences. In the case of the predicate-argument relation and its representation in terms of sisterhood, it is the relation that is primitive, not the property of sisterhood. The matter of representing the relation is a decision of the linguist which can be made either on arbitrary or on empirical grounds. For instance, one way in which sisterhood as a representation of the predicate-argument relation could be empirically motivated would be if it were in general the case that predicates and their arguments turned up as syntactic sisters at some linguistically significant level where the notion "syntactic sister" has an empirical basis, say shallow or surface structure. But in fact this correlation does not appear to hold, if one accepts all the analyses of quantifiers, adverbs, and so forth as higher predicates. Or perhaps empirical motivation would result if it turns out that "quantifier crossing" constraints of the sort discussed by Lakoff (1969) can be stated with maximum economy and generality in a formal semantic system where the predicate-argument relation is represented by sisterhood.

It seems to me that many of the questions that arise in the field are not really empirical questions, but decisions and problems which are artifacts of the assumptions about how semantic properties are to be formally represented. How can the sort of assumptions listed in the appendix be made empirical issues? I see no easy, direct way. But there is an indirect way to evaluate them that is more or less immediately available: namely, to examine them for consistency, to determine whether there are cases where two or more assumptions conflict in the face of some data. Let me sketch what I mean by this.

The sort of "generative semantics" strategy that tends to lead to a credibility gap is the following: in surface structure, or some other relatively superficial

stage in the derivation of a sentence, some element E is a sister of some element F, but E is not semantically an argument of F, or in the scope of F (or vice-versa). Therefore, the reasoning goes, E is not a sister of F in semantic representation, but is "outside" that position. This type of argument (as well as others) has been used to motivate analyses of adverbs, quantifiers, prepositions, and so forth, as higher predicates, presuppositions as sentences "outside" the performative verb, relative clauses as underlyingly conjoined sentences, and the treatment of the de dicto-de re problem in terms of syntactic differences, to name a few.

In such cases, there is a conflict between syntactic (e.g. surface structure) properties and semantic relations, given certain assumptions about how semantic relations are to be formally represented. There are two sorts of problems that are a mark of such analyses. First, the details of the rules which move the element from its "outside" position to the position where it shows up in superficial structure are rarely given in any detail, if at all. And when they are given, often the rules hypothesized are awkward and inelegant, and intuitively quite unlike run-of-the-mill syntactic rules. Second, given the decision that the element must originate "outside" (usually outside some sentence), there is no place to put it. Even cases which look easy, like non-restrictive relative clauses as underlyingly conjoined sentences, have never been made to work (see Ziv (1973) for some difficulties).

But it is conceivable that these problems are merely a matter of ignorance, and that all will become clear after more intensive research. A worse sort of case is where the conflict is not between superficial and semantic properties given certain assumptions, but entirely at the semantic level--for example a case where according to one assumption about the representation of semantic properties an element E must be in position P, but according to another assumption, E cannot be in position P. It seems there are such cases, and the (at least potential) existence of such cases leads to some help in evaluating the set of assumptions.

One case is the conflict between the analysis of quantifiers as higher predicates and the deep structure constraints of Perlmutter (1971), a fact originally noted by Newmeyer (1969). If the ambiguity of (13) is to be treated in terms of quantifier scope, with (14) and (15) as representations of the two readings, then

there is a conflict with the claim that the next lower predicate under try must be an activity verb whose subject is identical to the subject of try.

(13) John tried to kiss all the girls at the party.

(14) (∀ $girl_x$ at the party) John tried (John kiss x)

(15) John tried ((∀ $girl_x$ at the party) John kiss x)

A second example is (16).

(16) $\left\{\begin{matrix}\text{A}\\\text{Some}\end{matrix}\right\}$ girl just came in.

The usual sort of analysis of some and a as existential quantifiers, therefore as higher predicates, would involve having the existential quantifier as the highest predicate under the abstract performative in (16). This sort of representation with the existential as the predicate just below the performative, would be appropriate (according to assumption 5) if (16) were an assertion of the existence of a girl. But intuitively (16) does not assert existence; it asserts the occurrence of an event of entering.

There are also cases which seem to show that assumptions 4a and 7a are inconsistent. It appears that adverbs can modify abstract performative verbs, as in the case of (18) as a reply to (17), with roughly the meaning of (19).

(17) What did you say we're having for dinner?

(18) For the fortieth time, we're having spaghetti.

(19) I'm telling you for the fortieth time, we're having spaghetti.

If adverbs are higher predicates, and if predicates are sisters of their arguments, then the adverb of (18) must be a sister of the sentence containing the abstract performative predicate. Then the adverb is the highest predicate in the semantic representation of (18). But according to 7a, the highest predicate must be a performative predicate.

Another case, also involving performatives: if assumption 10 is correct, then regret is higher than inform in (20).

(20) I regret to inform you that your hair is on fire.

But inform is performative in (20); to say (20) is to carry out an act of informing. Therefore, by assumption 7b, inform must be the highest predicate of (20). Both assumptions cannot be correct.

These are obvious, easy cases. No doubt intensive study could yield dissertations full of data which show conflicts between assumptions. Unfortunately, the mere existence of a conflict does not show in any direct way which of the assumptions must be given up.

Returning to presupposition, I will first try to reconstruct the rationale for my earlier analysis, then I will discuss some arguments that presupposition cannot be represented in this way, concluding that none of these arguments, pro or con, goes through, since they are based on assumptions about semantic representation whose empirical basis is not clear.

The initial unstated assumption of the earlier analysis was that if some grammatical principle in the derivation of a sentence is sensitive to or conditioned by some semantic factor, then that factor is part of the underlying structure of the sentence. Then given that some grammatical processes (the most trivial case being lexical insertion of factive verbs, but there are others) are sensitive to presuppositional properties, it follows that presuppositions are part of underlying structure. But the initial assumption is not necessarily correct, and has in fact been challenged (see Gordon and Lakoff (1971), for example). But given that presupposition is part of underlying structure, four aspects of the earlier analysis remain to be justified. These are:

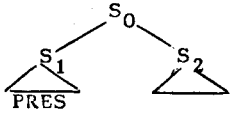
1. Why is the presupposition "outside" the sentence which presupposes it?
2. Why is it conjoined to it?
3. Why is it conjoined with AND?
4. Why a "performative" of presupposition?

There are two assumptions which motivated the "outside" part of the analysis: first, assumption 4a, that every element in semantic representation is either a predicate

or an argument of some predicate; second, assumption 4c, that two elements which are sisters are either in predicate argument relation or are arguments of the same predicate. Given that what is to be represented is that a relation of presupposition holds between the speaker and a certain proposition (I will abbreviate the complex structure PRE(SPEAKER, p) as PRES), there is no place to put PRES "inside" the semantic representation of the sentence, since it is not an argument of any of the predicates in the sentence, and therefore cannot be a sister of any of those predicates.

The "conjoined" part of the analysis is motivated by assumption 3a, that semantic representation is a single-rooted graph. It follows from this that if PRES is outside the sentence, it must be a sister of it. But an underlying form like (21) is not well-formed by assumption 4a, since neither S_1 nor S_2 is a predicate, nor the argument of any predicate.

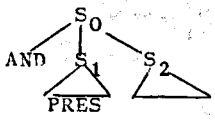
(21)



Therefore to meet this requirement one might choose AND as a sort of neutral predicate; if a predicate must be chosen, AND is somehow a more natural choice than, say, OR or BUT. But notice that having to choose a predicate at all is an arbitrary effect of the assumptions discussed above.

Then given the choice of AND, and the identification of this predicate with the English word <u>and</u>, the left-to-right relative ordering of S_1 and S_2 as in (22) would follow from the facts of (3) and (4).

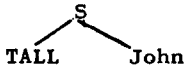
(22)



The motivation for a "performative of presupposition" is rather confused. One of the assumptions involved is that in semantic representation every proposition must somehow be connected to the speech act. It was assumed that semantic representations are not just abstract propositions floating in limbo, but <u>acts</u> of some sort. Thus

(23) would not be a well-formed semantic representation of any sentence, but would only occur as part of some well-formed semantic representation, as in (24) or (25) I have omitted the labels "predicate" and "argument").

(23)



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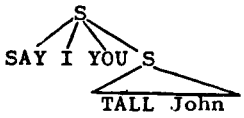

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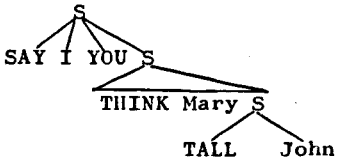


In (22) PRES is hanging in this sort of limbo; it is neither an argument of a performative, nor part of an argument of a performative. Calling the predicate PRE "performative" was merely a fudge to make the semantic representation fit this assumption. But notice that the fudge is unsuccessful; S_0 in (22) is not the argument of any performative verb.

It is clear that none of these arguments, even the less sloppy ones, is compelling, since they are all based on assumptions which need examination. There is also a kind of data which might be taken to show that this way of representing presupposition as part of semantic representation cannot be correct. This is the problem of the interaction of presupposition and quantifier scope pointed out by Karttunen (1970). He observes that a sentence like (26) presents difficulties for most analyses of presupposition.

(26) Some senators regret that they voted for the SST.

Karttunen observes that if (27) is roughly the logical form of (26), with the variable bound by the quantifier some, then we cannot say that the underlying complement

of regret is a presupposition, since (28) is not a well-formed proposition.

(27) For some senators x, x regrets that x voted for the SST.

(28) x voted for the SST.

Karttunen draws an analogy with arithmetical statements:

> We cannot analyze [(26) by giving] a semantic representation like (7), which consists of two separate parts, 'assertion' and 'presupposition'.
>
> (7) ASSERTION: For some senators x, x regrets that x voted for the SST.
> PRESUPPOSITION: x voted for the SST.
>
> We can illustrate the problem that this poses for the analysis of factive verbs with an example from arithmetics. Any statement such as '$4=\sqrt{16}$' or '$(Ex)x=\sqrt{16}$' is a proposition which can be believed, asserted, doubted, etc. On the other hand, equations like '$\sqrt{16}=x$', where x is a free variable, are not propositions. The analysis in (7) makes as little sense as an assertion that the unsolved equation '$\sqrt{16}=x$' is true.

Karttunen examines the possibility that there are two quantifiers, one in the presupposition and one in the assertion, as in (29).

(29) ASSERTION: For some senators x, x regrets that x voted for the SST.
PRESUPPOSITION: For some senators x, x voted for the SST.

But he discards this possibility on the grounds that (26) and (30) are not synonymous, though by this analysis they would have the same representation according to the schema of (29).

(30) Some senators regret that some senators voted for the SST.

The crucial difference is that in (26) the senators who

have regrets are presupposed to have voted for the SST; but (30) could be used to describe a situation wherein it was only the senators who did not vote for the SST who regret that some did. Karttunen's proposal is a pair of "meaning postulates" like (31), which have the effect of plugging in the missing quantifiers.

(31) (∀x) (∀s) [regret (x,s)>>s]
(∀x) (∀s) [-regret (x,s)>> s]

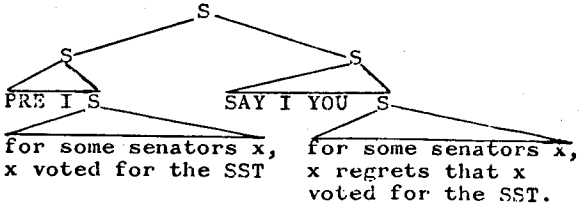
But this move is dictated by a set of assumptions about how binding operates that, so far as I know, has no empirical basis, but is borrowed intact from the traditions of mathematical logic. For example, Karttunen's rejection of an analysis like his (7) is apparently based on the assumption that a quantifier cannot bind a variable that is not in the same sentence. But in fact this assumption is without foundation, and probably false. The dialogues in (32) and (33) seem to be cases where a quantifier in one sentence binds a variable that is not only in another sentence, but in another speech act by another speaker.

(32) A: All good boys love their mothers best.
B: They also love their dogs, though.

(33) A: Every linguist who reads Jespersen likes him.
B: He usually plagiarizes him, too.

Disregarding the difficulties with this sort of analysis discussed earlier, one might propose any of the following as a representation of (26):

(34)



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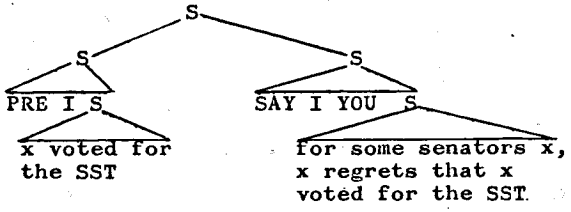

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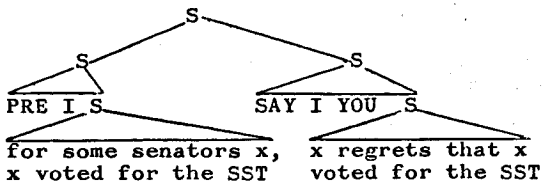

No doubt there are empirical reasons for rejecting each of these analyses. But the reasons that interest me here are the non-empirical ones--certain assumptions about binding which, as far as I know, have no empirical motivation. The analysis of (34) would have to be rejected if one wished to maintain assumption 8a, that a variable cannot be bound by more than one quantifier. The other two would have to be rejected if one wished to maintain the assumption (9c) that quantifiers cannot bind variables they do not command, or that quantifiers cannot bind variables that are not in the same sentence (9b) or in the same speech act (9a). It is difficult to see how the presupposition of (26) can be directly represented without giving up one or more of these assumptions. But since the assumptions are not empirically motivated, the conclusion that presupposition cannot be directly represented is not an empirical matter. The question of how presupposition should be represented is not an empirical question, and will not become one until the status of these assumptions is cleared up. So it is that within a set of assumptions one can achieve an interesting and insightful partial description of a given area, like quantifiers, or presupposition, or lexical decomposition, or speech acts, and so on. But in almost every case, serious problems arise when one attempts to integrate these separate analyses, as in the case of presupposition and quantifiers, or adverbs and speech acts. It is clear that

the problem of the formal nature of semantic representation is far from settled and in need of intensive re-examination.

There are four main areas that deserve special attention. The first is the empirical status of assumptions about the form of semantic representation like those in the Appendix. Second, there is the question of what constitutes evidence in the study of semantics. Criteria of evidence in the literature are as vague as the assumptions about representation, and will obviously become somewhat clearer as these assumptions are clarified.

The third area is the **appropriateness** of syntactic solutions to semantic problems. The semantic representations of generative semanticists[3] are syntactic objects (in the logician's sense of "syntactic") and the theory is in need of a theory of interpretation--not in the sense of "interpretive semantics", but in the sense of a model-theoretical interpretation of uninterpreted logical forms. The question arises, what sort of semantic problems deserve syntactic solutions (again, in the logician's sense of "syntactic") and what sort should be dealt with in the interpretation theory? The answer to this question is made especially difficult by the fact that very few linguists (including me) are familiar with work in interpretation. Up to now, the byword in generative semantics seems to have been "a syntactic solution for every semantic problem".

The fourth area that deserves attention amounts to facing up to the nature of language. There is a spirit of inquiry that often accompanies the sort of semantic representation discussed earlier, apparently borrowed from mathematical logic, which may be the source of some of the problems and pseudo-problems which arise in generative semantics. This spirit is a tendency to lose sight of the fact that the proper goal of linguistics is not to invent some ingenious formal apparatus for translating natural language into a form to which the rules of mathematical logic can be applied, but to discover how people work as language-users. These goals undoubtedly intersect, but the fact that they are distinct was pointed up by a brief but acrimonious debate at a recent conference, where a logician took the position that the sentence The present king of France is the golden mountain is true, in spite of the fact that no non-logician would judge it to be true. It may be quite proper for a logician to say "according to

the best of all possible logical systems, this sentence is true; if people do not judge it to true, so much the worse for people."[4] But the linguist's position ought to be: people do not judge it to be true; if your logic does, so much the worse for your logic. We are not studying logic for logic's sake; we are studying logic as an aspect of human cognitive psychology. Whatever contributions mathematical logic can offer to this study (and no non-fool would deny that it has much to offer) we will accept with alacrity.

But it seems to me as an outsider that the goal of mathematical logic since at least Russell has been to invent ways to separate sentences from people--to remove the act of referring, for example, by trying to recast the consequences of this act in propositional terms which mention neither act nor actor. In this way of looking at language, sentences are abstract formal objects to which logical rules apply. This overlooks a profound property of language: that it is a system of communication. Aspects of language like 'communicative function' of a linguistic element are never mentioned. Overlooking such factors is likely to lead to pseudo-problems and non-explanatory analyses. It is probably true that anything that can be conceived can be propositionalized. No doubt one could represent the workings of an internal combustion engine by an array of propositions. Surely there are insights to be gained by considering sentences as structures or arrays of propositions. But just as surely, it makes sense to consider sentences as structured sequences of acts of various sorts.

Let me give an anecdotal example of what I mean. Restrictive relative clauses constitute a logical problem in that they are "presupposed" true. Without considering aspects of 'communicative function' one would probably be led to invent some sort of 'logical rule' to assign this semantic property to certain structural configurations. But notice that such a ploy results in a non-explanatory analysis. Why is such a semantic system any more natural that one which assigns the value "false" to such structures? Why is it that restrictive relative clauses are usually "presupposed" true?

On the other hand, if one asks "what is the communicative function of restrictive relative clauses?", it may be possible to give an explanation. If their function is to afford the hearer enough information to pick out some individual, then it is obviously more efficient

to give a true description than a false one. The fact that the speaker uses the relative clause for this purpose is prima facie evidence that he believes it is true.

Notice the difference between the two hypothetical analyses. A very simple-minded formal treatment would say that it is the formal structure NP[NP S] that is crucial; this would be to claim that S is true by virtue of being a right sister of a NP of a certain sort. A communicative-function analysis would say that it will be judged to be true by virtue of its function; what its structural properties are is in a way irrelevant.[5]

This paper has followed a curious route, from recantation to speculation and polemic, and no doubt my point has become less and less clear. It is this: I think there is a growing feeling of confusion among ordinary working generative semanticists. It is time to clear up some fundamental questions, some of which I have raised here.

FOOTNOTES

1. There is a correlation here between environments which allow this sort of "backward presupposition" and those which allow backward pronominalization. I doubt that this is a coincidence.

2. I doubt that any linguist accepts all these assumptions, but all of them have appeared in the literature, usually implicitly.

3. Mythical beasts, these. The idea that the set of people who call themselves, or are called, "generative semanticists" actually hold a relatively homogeneous theoretical position belongs in the same zoo with the myth of monolithic international communism.

4. This position illustrates my point nicely. Insofar as it is a caricature, I apologize.

5. That is not to say unnatural. I think that one could make a case that for reasons of efficiency and avoidance of ambiguity the best place to put a relative clause (at least in surface structure) is next to the NP it modifies.

APPENDIX

SOME ASSUMPTIONS ABOUT SEMANTIC REPRESENTATION

1. Only necessary, and not contingent, semantic properties are to be represented in semantic representation. In particular, the intentions a speaker may have in using a sentence are not part of semantic representation.

2. Every aspect of the (non-contingent, non-implicated) meaning of a sentence can be represented in propositional form.

3. The relations "precede", "dominate", and "is labelled" are sufficient for representing all semantic relations.

3a. The proper representation of semantic structure is a single-rooted graph of the usual sort.

4. The basic semantic relation is "predicate-argument"

4a. Every element in semantic representation (save the highest S-node) is either a predicate or an argument of some predicate.

4b. If X and Y stand in predicate-argument relation, X and Y are sisters in semantic representation.

4c. Conversely, if in semantic representation X and Y are sisters, then either X and Y stand in predicate-argument relation, or both are arguments of the same predicate.

5. (Only) sisterhood is powerful:
$$Pred_1(Pred_2\ Arg^n) \;/\; Pred_1\ Arg^n$$

6. Predicates can be classified as to the number of arguments they may take; the number is constant for each predicate.

6a. There is an upper bound on the number of arguments a predicate can take (perhaps a number as small as two or three); apparent counter-examples to this are actually cases where some predicate has a set (or sets) as its argument(s).

7. Sentences are to be considered and analyzed not as abstract propositions floating in limbo, but as speech acts of various sorts.

7a. The speech act nature of a sentence is represented by having the proper performative verb as "highest"

predicate.

7b. If a predicate is performative in some sentence (i.e. is performed by that sentence), then that predicate is the highest predicate of the sentence it is in.

8. Quantifier scope I: if some element is in the scope of a quantifier Q, then Q commands that element in semantic representation. In particular, the element is contained in a sister (that is, an argument) of Q. (by "element" here I mean elements other than variables that the quantifier binds; predicates, for instance).

8a. A variable cannot be bound by more than one quantifier.

9. Quantifier scope II: if a quantifier Q binds some (argument) element x, then

9a. Q and x are in the same speech act.

9b. Q and x are in the same sentence in semantic representation (but not necessarily clause mates; that is, there is some node S that dominates both Q and x).

9c. Q commands x in semantic representation.

9d. Q assymetrically commands x in semantic representation.

10. The semantic structure of a sentence is directly reflected in the complement structure of the sentence; e.g., we conclude from the complement structure of John managed to leave that the semantic structure is something like manage (John, (John leave)); likewise, from the complement structure of Iregret to inform you that your ear is shut we conclude that its semantic structure is roughly regret (I, (inform(I, you, (your ear is shut))))

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