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Publication Date

1974-04-01

Syntactic Amalgams*
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By a 'syntactic amalgam' I mean a sentence which has within it chunks of lexical material that do not correspond to anything in the logical structure of the sentence; rather they must be copied in other derivations under specifiable semantic and pragmatic conditions. I will attempt to show that there are some clear cases of constructions that require treatment in terms of amalgams, and some other suggestive cases -- enough to indicate that amalgams are a real phenomenon in English.

The Andrews Case

Sentence (1) was brought to my attention by Haj Ross (who in turn had heard it from Avery Andrews),

John invited you'll never guess how many people to his party. Andrews raised the question of how one could account for the underlined material clause occurring in the middle of the sentence. He had suggested that (1) should be derived from the structure underlying (2).

You'll never guess how many people John invited to his party. Presumably the residual S "John invited to his party" would be raised in S-lifting (see Ross, 1973), and "you'll never guess how many people" moved (by some miracle) back into the right place. However, Ross and I concocted sentences like (3) which show that any such derivation is impossible.

John invited you'll never guess how many people to you can imagine what kind of a party.

Though Andrews' suggestion might be made to account for one NP like the underlined NP in (1), it could never be made to account for more than one such NP. However an indefinite number of such NPs can occur in a single sentence.

This work was supported in part by grant No. GS 35119 from the National Science Foundation to the University of California at Berkeley. I would like to thank the following people, who generously discussed this topic with me and lent me examples, without knowing that they were letting themselves in for: Avery Andrews, Bill Merrifield, Chuck Fillmore, Don Forman, Georgia Green, Larry Horn, Matti Karttunen, Mark Liberman, Jerry Morgan, Haj Ross, Rick Wojcik, and especially the community of linguistics students at Berkeley.

- (4) John invited you'll never guess how many people to you can imagine what kind of a party at it should be obvious where with God only knows what purpose in mind, despite you can guess what pressures.

Besides the question of how one can generate such NPs at all, there is the additional problem of getting just the right ones.

- (5) a. Babe Ruth hit how could anyone forget how many home runs?
b. *Babe Ruth hit Sam forgot how many home runs.
- (6) a. Sammy's going to marry guess who.
b. *Sammy's going to marry Max guessed who.
- (7) a. Irving's gone God knows where.
b. *Irving's gone God doesn't know where.

To see what's going on in these cases, let us return to (1).

- (1) John invited you'll never guess how many people to his party.

In most contexts, (1) would have the meaning of (8a), though in certain relatively rare situations, many speakers (perhaps with a little straining) can get it to mean (8b), or something more specific.

- (8) a. John invited a lot of people to his party.
b. John invited few people to his party.

The same is true of the conversational entailments of (2).

- (2) You'll never guess how many people John invited to his party.

In just those contexts where (1) will mean (8a), (2) will conversationally entail (8a); those rare situations where (1) will mean (8b) are just those in which (2) will conversationally entail (8b); etc.

Similarly, (9) can have any of the meanings of (10), depending on context.

- (9) John invited a lot of people to you can imagine what kind of a party.
- (10) a. John invited a lot of people to a wild party.
b. John invited a lot of people to a dull party.
c. John invited a lot of people to a party where everyone has to dress up as one of the Watergate characters.
etc.

In any given context, (11) will conversationally entail exactly what (9) means in that context.

(11) You can imagine what kind of party John invited a lot of people to.

These observations suggest that (1) is a syntactic amalgam such that (a) the underlined portion of (1) is copied in from a derivation which is just like (2) except that the complement S has been sluiced (for a discussion of sluicing, see (Ross, 1969)); (b) the initial P-marker of the derivation of (1) will vary with context -- for example, in a context where (1) has the meaning of (8a), the initial P-marker of (1) will be that of (8a). The general idea is that in any context C, the logical structure of the sentence to be copied in must conversationally entail the logical structure of the sentence into which it is copied. We can state an informal rule to account for such sentences as follows:

(12) For all contexts C, if;

- i. S_1 is an indirect question with S_0 as its complement S; and
- ii. S_2 is the i th phrase marker in a derivation D whose logical structure is conversationally entailed by the logical structure of S_1 in context C; and
- iii. NP_1 is an NP in S_2 , such that S_2 minus NP_1 is identical to S_0 ; and
- iv. S_1 has the force of an exclamation; then
- v. relative to context C, S_1 minus S_0 may occur in place of NP_1 in the i th phrase-marker of derivation D.

Example: S_1 = You'll never guess how many people
 S_0 = John invited to his party
 S_2 = John invited a lot of people to his party
 NP_1 = a lot of people

Since (12) places no limit on the number of sluiced indirect questions that can be substituted for NPs, (12) is capable of accounting for sentences like (3) and (4), where there are multiple amalgamations, (12) also has the advantage of reducing the truth conditions for such sentences to truth conditions for other, more basic sentences. It also automatically determines the correct context-class in which such sentences can be used.

Bill Cantrall has suggested what may be a more plausible derivation for the Andrews sentences. He suggests that (1') may be an intermediate stage in the derivation of (1).

(1') John invited a surprising number of people -- you'll never guess how many (people) -- to his party.

First the sentence remnant "you'll never guess how many (people)" is inserted under pretty much the same conditions as those given in (12), with perhaps the additional proviso that the constituent in S_2 that corresponds to the questioned constituent in S_1 is modified by the adjective "surprising" or "unexpected" or the equivalent. (1') would then be derived from the structure underlying (1') by the deletion of "a surprising number of people". Cantrall's suggestion amounts to breaking up the substitution rule of (12) into two rules -- an insertion rule and a deletion rule. This has the advantage of being able to account in addition for constructions like (1').

2. Horn's Cases

Larry Horn has suggested to me a class of sentences that are similar to Andrews' cases and that also seem to require treatment as amalgams. Consider (13).

- (13) a. John is going to, I think it's Chicago on Saturday.
 b. John is going to, is it Chicago? on Saturday.
 c. John is going to, it is Chicago, isn't it? on Saturday.
 d. John is going to, I'm sorry to say it's Chicago on Saturday.

As in the Andrews cases, the sentences in (13) contain sentences with a deleted clause functioning in place of NPs. But the deleted portion in (13) is the relative clause of a cleft sentence, rather than an indirect question complement. As before, there can be more than one per sentence.

- (14) John is going to, I think it's Chicago on, I'm pretty sure he said it was Saturday to deliver a paper on Was it morpholexemes?

As before, there are constraints on which S_2 can occur in place of NPs

- (15) a. *John is going to, I'm sorry it's Chicago on Saturday.
 b. *John is going to, God knows it's Chicago on Saturday.
 c. *John is going to, you'll never guess it's Chicago on Saturday.
 d. *John is going to, it's odd that it's Chicago on Saturday.

And as before, it is conversational entailment in context that determines which underlined NPs can occur.

- (16) a. I think it's Chicago that John is going to on Saturday.
 b. Is it Chicago that John is going to on Saturday?
 c. It is Chicago, isn't it, that John is going to on Saturday.
 d. I'm sorry to say that it's Chicago that John is going to on Saturday.

- (17) John is going to Chicago on Saturday.

Each of the sentences in (16) conveys (or can convey in the right context) a hedged assertion of (17). None of the sentences in (18) can do this.

- (18) a. I'm sorry that it's Chicago that John is going to on Saturday.
 b. God knows that it's Chicago that John is going to on Saturday.
 c. You'll never guess that it's Chicago that John is going to on Saturday.
 d. It's odd that it's Chicago that John is going to on Saturday.

This suggests that Horn's cases are to be accounted for by a principle like (19).

(19) For all contexts C, if:

- i. S_1 is a sentence with an embedded cleft-sentence with S_0 as its relative clause; and
- ii. S_2 is the i th phrase-marker in a derivation D whose logical structure is conversationally entailed by the logical structure of S_1 in context C; and
- iii. NP_1 is an NP in S_2 , such that S_2 minus NP_1 is identical to S_0 minus its relative pronoun; and
- iv. S_1 is a hedged assertion of the content of S_2 ; then
- v. relative to context C, S_1 minus S_0 may occur in place of NP_1 in the i th phrase marker of derivation D.

Example: S_1 = I think it's Chicago
 S_0 = that John is going to on Saturday
 S_2 = John is going to Chicago on Saturday
 NP_1 = Chicago

The Horn cases also have variants that look superficially like sentences containing parentheticals, but aren't.

- (20) a. John is going to, I think Chicago on Saturday.
 b. John is going to, did he say Chicago? on Saturday.
 c. John is going to, he said Chicago, didn't he? on Saturday.
 d. John is going to, wouldn't you say Chicago? on Saturday.
 e. *John is going to, I regret Chicago on Saturday.
 f. John is going to, didn't he say Chicago? on he did indicate Saturday, didn't he? to I guess give a lecture.

g. John is going to, it looks like Chicago on Saturday.

On first blush one might be tempted to say that the "I think" in (20a) is a parenthetical. Of course, it does not have the right intonation for a parenthetical, and parenthetical intonation cannot be used there since, as Ross observed, there is no niche for parentheticals following a preposition.

(21) *?John is going to, I think, Chicago on Saturday.

Moreover, some expressions that can be used in (20) cannot function as parentheticals, and conversely. Compare (20) and (22).

- (22) a. John is, I think, going to Chicago on Saturday.
 b. *John is, did he say, going to Chicago on Saturday.
 c. No corresponding parenthetical.
 d. John is, wouldn't you say, going to Chicago on Saturday.
 e. John is, I regret, going to Chicago on Saturday.
 f. No corresponding parenthetical.
 g. No corresponding parenthetical.

(a) and (d) are the only cases that match in (20) and (22).

My best guess at present is that cases like (20) are either derived from the Horn cases by deletion of "it tense + be" or that (19) can be generalized to cover both cases.

Incidentally, Ross has observed (personal communication) that amalgams may be embedded inside one another.

(22 1/2) John is going to marry, I guess I'll have to tell God knows how many people that it's Harriet next Sunday.

I would imagine that such cases are fairly rare, since it would in general be difficult to get the contexts to match up correctly.

Bill Contrall (personal communication) has made the same suggestion for this construction as he made for the Andrews cases, namely to derive (13a) via insertion and then deletion. The post-insertion but pre-deletion stage would yield (13a').

(13a') John is going to Chicago -- I think it's Chicago -- on Saturday.

Deletion of the first "Chicago" would yield (13a). As before, the suggestion has obvious advantages and I am most receptive to it.

3. Forman's Parentheticals

There is also some evidence that real parentheticals ought to be treated as amalgams. Ross, in his S-lifting paper (Ross, 1973) has,

suggested that parentheticals are to be derived by a rule that lifts a complement S. Thus (23b) would be derived from the structure underlying (23a).

- (23) a. I think John left.
 b. John left, I think.
 c. John, I think, left.

(23c) would be derived by moving the parenthetical into the post-subject niche,

Given the possibility of amalgams, however, there is another alternative, namely, to derive the parenthetical from another derivation under specified pragmatic conditions. Note that (23a) in appropriate contexts can conversationally entail a hedged assertion of (24).

(24) John left.

(23b and c) are in fact hedged assertions of (24). Thus, for simple cases like (23b and c), one might propose the following rule as an alternative.

(25) For all contexts C, if:

- i. S_1 is a sentence with an embedded complement S_0 ; and
- ii. S_2 is the i th phrase-marker in a derivation \mathcal{D} such that in context C

either (a) the logical structure of S_1 conversationally entails a hedged version of S_2 ,

or (b) the logical structure of S_1 expresses a concession of the propositional content of the logical structure of S_2 ,

or (c) the logical structure of S_1 gives the source of the information asserted in the logical structure of S_2 ; and

- iii. S_0 is identical to the propositional content of S_2 ; and
- iv. maybe other conditions; then
- v. relative to context C, S_1 minus S_0 may occur Chomsky-adjoined to the right of S_2 in the i th phrase-marker of derivation \mathcal{D} .

Example: S_1 = I think
 S_0 = John left
 S_2 = John left

There is a bit of evidence favoring (25) over the S-lifting proposal. Ross observed that the following types of sentences provided difficulties for the S-lifting proposal.

- (26) a. Is John here, do you think?
 b. Will John leave, do you suppose?

The cases in (26) are automatically accounted for by the amalgam proposal in (25), since the (a) sentences in (27) and (28) each conversationally entail a hedged version of the (b) sentences in just those contexts in which the corresponding sentences in (26) are appropriate.

- (27) a. Do you think John is here?
 b. Is John here?
 (28) a. Do you suppose John will leave?
 b. Will John leave?

A particularly interesting case supporting an amalgam approach has been brought to my attention by Don Forman.

- (29) a. Will this, I hope, be acceptable?
 b. *Will this, I predict, be acceptable,
 (30) a. I hope this will be acceptable. (rising intonation)
 b. Will this be acceptable?
 c. I predict that this will be acceptable.

(30a) can conversationally entail (30b), in a context where one is seeking confirmation, which is exactly the context required by (29a). Thus (29a) is predicted by (25), but not by S-lifting. Since (30c) cannot conversationally entail (30b), (25) predicts the illformedness of (29b).

These cases fall under (25 ii a). (25 ii b) is meant to account for concessive cases like the following (as pointed out by Jerry Morgan).

- (31) a. Max, I realize, has little chance of being elected Pope.
 b. John, I admit, cannot play the tuba well.
 c. Sammy, I must concede, makes very good bagels.

Thus, "I realize that Max has little chance of being elected Pope" constitutes a concession of the unlikelihood that Max will be elected Pope. (25 ii c), proposed by Rick Wojcik, is meant to account for such examples of Ross' as (32).

- (32) a. John Mitchell, Zeigler announced, has been appointed Ambassador to Afghanistan.

- b. Kangaroos, the Times reported, are decreasing in numbers.
- c. Sam, I just heard from Seymour, sold his condominium.

In (32a), the source of the information is Zeigler's announcement; in (32b) it is the Times' report; in (32c) the speaker got his information from Seymour.

By deriving sentences with parentheticals via a rule like (25) we can automatically account for certain observations made by Tanya Reinhart (1973). Reinhart observes that such sentences do not have the scope ambiguities that one would expect given an S-lifting solution.

- (33) a. John thinks Bill taller than he is.
- b. Bill, John thinks, is taller than he is.
- (34) a. Oedipus believed that his mother wasn't his mother.
- b. His mother wasn't his mother, Oedipus believed.

The (a) sentences have both a wide and narrow scope reading, the narrow scope reading being contradictory. The (b) sentences have only the contradictory narrow-scope reading. Since S-lifting claims that the (b) sentences are derived from the (a) sentences, that solution would, all things being equal, predict that (b) sentences should have the same scope ambiguities as the (a) sentences. The S-lifting proposal might be saved by adding an additional global condition that the S into which the lowering takes place retains its status as an embedded complement in surface structure. Such a condition might describe the facts in (33) and (34) -- but the solution in (25) would predict them automatically -- and thus explain them.

Perhaps the most unsatisfactory aspect of (25) is the three disjunctive conditions in (25 ii). It would be nice if these could be stated as one uniform condition. One possible proposal along these lines might be based on the observation (which seems true) that all three conditions have the effect of relieving the speaker of part of the responsibility for the speech act. If a condition of this sort could be stated more precisely, then perhaps it could replace the disjunction in (25 ii). Unfortunately, there is some evidence that at least superficially seems to suggest that the conditions in (25 ii) cannot be collapsed into a single condition. Consider the following examples.

- (35) a. John left, I think.
- b. John left, or at least I think he did.
- (36) a. The tapes will be turned over to the Committee, the White House announced.
- b. The tapes will be turned over to the Committee, or at least the White House announced that they would.

Larry Horn (personal communication) has suggested that the (a) sentences be derived from the structure underlying the (b) sentences, that is, there would be an "or at least..." stage in the derivations of the parentheticals of (35a) and (36a). But it would appear that not all parentheticals can be derived via such an intermediate stage.

- (37) a. *John left, or at least I realize that he did.
- b. *John left, or at least I concede that he did.
- c. *Will this be acceptable, or at least I hope it will.

The meaning associated with the or-at-least construction seems not to be that associated with parentheticals on questions or with concessive parentheticals. Thus it would appear that, if some parentheticals are derived via an intermediate or-at-least stage, others cannot be, and therefore there could be no uniform condition on the derivation of parentheticals. Obviously more investigation needs to be done on the relationship between the (a) and (b) sentences in (35) and (36).

4. Performative Predicate Modifiers

Among the arguments usually given for the so-called 'performative hypothesis' is one based on the fact that there are adverbial clauses that modify the understood performative predicate.

- (38) a. Take out the garbage, because I'm too lazy.
- b. Since it is a matter of national security, where are the secret files?
- c. Since the President said I should tell you, you are being investigated by a grand jury.

In (38a) the subordinate clause gives the reason for the request, in (38b) it gives the reason for asking the question, and in (38c) it gives the reason for making the statement. Such subordinate clauses are relatively well-behaved in a theory with a performative analysis. However, Alice Davison (1973) has observed that there are other subordinate clauses that are not so well-behaved semantically.

- (39) a. Joan is married, since she has a wedding ring on.
- b. It's raining, because my feet are wet.
- c. Since the President said you were to take orders from me, get me the missing tapes.
- d. Since you were there that day, what did the President say?

In (39a) the reason-clause does not give the reason why the speaker made the statement, but rather the reason he gives for believing the statement made in the main clause. The same is true in (39b). The fact that the speaker's feet are wet is not the reason why he says that it's raining, but only the reason he gives for believing that it's raining. In (39c), the reason-clause does not specify the reason for

giving the order, but only the reason why the speaker has authority to give it. In (39d), the reason-clause does not give the reason for asking the question, but rather the reason why the speaker believes that the hearer has the knowledge to answer it. As Davison observes, there is a general principle governing such cases, namely, that the reason-clause gives the reason why one of the felicity conditions for the speech act holds. In (39a and b), the speaker's belief is required for a felicitous statement, in (39c) the speaker's authority is required for a felicitous order, and in (39d), the speaker's belief that the hearer can answer the question is required for a felicitous question.

There is also a class of cases where the reason clause gives a reason not why a felicity condition holds, but rather why the hearer would make the 'called-for response', that is, why he should do what the speaker is trying to get him to do. The notion 'called-for response' is implicit in an observation of R. Lakoff's noted by Ross (1971) and discussed in G. Lakoff (1972), and in the essential conditions given by Searle (1969). Various performative predicates are paired via meaning postulates with predicates that characterize a called-for response. For example, when a speaker gives an order, he is trying to get the hearer to obey it; the called-for response is obedience. When a speaker asks a question, he is trying to get the hearer to answer it; answering is the called-for response. When the hearer makes an assertion, he is trying to get the hearer to believe him; believing is the called-for response. And so on. In the following cases, the reason-clause specifies the reason why the hearer is to make the called-for response.

- (39') a. Get out of here, because Sam'll kill you if you don't.
 b. Where is Harry hiding out, because if you don't tell me, the cops will get to him first.
 c. You are going to get fired, because your boss' secretary says she typed the dismissal notice.

The reason-clauses give reasons for obeying the order in (39'a), answering the question in (39'b), and believing the assertion in (39'c).

To account for such facts we cannot simply have the reason-clauses modifying the performative predicates, since that would give the wrong meanings; for example, if the reason-clause in (39a) modified STATE then it would be giving the reason for stating. The above facts suggest, rather, a solution in the direction of amalgams. As a first, informal approximation, I suggest the following rule.

(40) For all contexts C, if:

1. S_0 is modified by the reason-clause S_1 ; and
- ii. S_2 is the i th phrase-marker in a derivation D such that the logical structure of S_0 is either a felicity condition

for, or a called-for response to, the logical structure of S_2 in context C; then

- iii. relative to context C, S_1 may occur as a modifier of S_2 in the i th phrase-marker of derivation D.

Example: S_0 = I have authority to give you orders
 S_1 = the president said you were to take orders from me
 S_2 = Get me the missing tapes

But though (40) will handle the cases in (39) and (39'), there are other cases of a similar sort that such a rule should be able to cover, but which cannot be handled by (40).

- (41) a. Since Harry is dry, how could anyone have splashed water on him?
 b. Since the president said you were to take orders from me, I would appreciate it if you would supply me with the missing tapes.
 c. Since you were there that day, it would be useful if you were to tell us what the president said.
- (41') a. Will you get out of here, because I just found out that Sam will kill you if you don't,
 b. I'd like to know where Sam is hiding out because, if you don't tell me, the cops will get to him first.
 c. I fear that you are going to get fired, because your boss' secretary says she typed the dismissal notice,

The sentences of (41) and (41') are like those of (39) and (39'), but with one additional wrinkle: the reason-clause does not express a reason for a felicity condition for, or a called-for response to, the logical structure of the sentence in the main clause itself, but rather it expresses a reason for a felicity condition for, or a called-for response to, a logical structure which is conversationally entailed by the logical structure of the main clause. For example, take (41b). "The president said you were to take orders from me" is not a felicity condition for my expression of potential appreciation ("I would appreciate it if you would supply me with the missing tapes"), but rather for the order conveyed by that expression of appreciation ("Get me the missing tapes"). Thus, (41b) works essentially like (39c) except that whereas in (39c) the order is literally expressed in the sentence itself, in (41b) it is conveyed indirectly by the main clause.

For another example, compare (39'a) and (41'a). In (39'a), "Sam will kill you if you don't (get out of here)" is a reason why the hearer should obey the directive to get out. In (41'a), "Will you get out of here?" conveys the directive to get out, and the because-clause gives the reason why that conveyed directive should be obeyed.

This indicates that (40) should be revised as follows.

(42) For all contexts C, if:

- i. the sentence consisting of S_0 modified by the reason-clause S_1 is true in C; and
- ii. S_2 is the i th phrase-marker in a derivation D such that the logical structure of S_0 is a felicity condition for, or a called-for response to, a logical structure S_3 which is conversationally entailed by the logical structure of S_2 in context C; then
- iii. relative to context C, S_1 may occur as a reason-clause modifier of S_2 in the i th phrase-marker of derivation D.

Example: S_0 = I have the authority to give you orders
 S_1 = the president said you were to take orders from me
 S_2 = I would appreciate it if you would supply me with the missing tapes
 S_3 = I order you to get me the missing tapes

The above example shows what is going on in (41b). Condition (42 i) requires the truth in context of "I have the authority to give you orders because the president says that you are to take orders from me." This gives the reason why the order S_3 is felicitous. S_2 conveys the surface structure by the reason clause that gives the reason why the order conveyed by S_2 is felicitous. This is what is going on in (41b).

Though I have only reported in this section on because-constructions that require treatment as amalgams, I should like to note for the record that there are similar cases with if and unless. My favorite is reported to me by Peg Griffin. In the movie "Lovers and Other Strangers", the hero and heroine are having an affair in which they meet on Wednesdays. At one point, the heroine says to the hero: "It's Wednesday, unless you're tired".

Liberman's because-cases

Mark Liberman (1973) observed sentences like the following:

- (43) a. The Knicks are going to win, because the Celts can't handle Frazier.
 b. The Knicks are going to win, because it looks like the Celts can't handle Frazier.
 c. The Knicks are going to win, because it's obvious that the Celts can't handle Frazier.

In each of these cases, a reason is being given for the speaker's belief of the assertion he makes in the main clause. Such appositive because-clauses, at least the simple ones like (43a), are formed by the rule in (42) above. However, the cases in (43b and c) cannot be handled by (42), since the reason-clause, when read literally, does not give the reason for some felicity condition on the speech act conveyed by the main clause. For example, in (43c) it is not the obviousness of the Celts inability to handle Frazier that leads the speaker to believe that the Knicks are going to win -- it is the Celts inability itself. The reason given in (43c) for the speaker's belief in the Knick's ultimate victory is the same as the reason given in (43a). The difference is that in (43c) the speaker is also asserting the obviousness of the reason clause.

Liberman proposed to handle such cases by suggesting that predicates like "look like" and "be obvious" were 'transparent' in appositive because-clauses. In other words, because skips over them and takes as its scope the embedded S. But such a proposal will not work for the following cases.

- (44) a. The Knicks are going to win, because I can't imagine anyone on the Celts handling Frazier.
 b. The Knicks are going to win, because I can't imagine who on the Celts could possibly handle Frazier.
 c. The Knicks are going to win, because who on the Celts can possibly handle Frazier?!

In these cases, there is no simple embedded sentence that could be the scope of because. Indeed, (44c) has a question, of all things, inside the because-clause. Why should questions turn up inside appositional because-clauses? Moreover, how can one account for what these sentences mean? (44c), for instance, means something like (45).

- (45) The Knicks are going to win, because nobody on the Celts can possibly handle Frazier.

There is a single general principle that handles both the cases of (43) and (44). In both sets of examples, the sentence in the because-clause conversationally entails the understood reason. For example, an assertion of "It's obvious that the Celts can't handle Frazier" conversationally entails an assertion of "The Celts can't handle Frazier". (cf. (43c)) And the question "Who on the Celts can possibly handle Frazier?" can be used 'rhetorically' to convey the assertion that "Nobody on the Celts can possibly handle Frazier".

The same phenomenon occurs where the because-clause gives a reason for a called-for response. Look back to sentences (39') and compare them with (41").

- (41") a. Get out of here, because I just found out that Sam will kill you if you don't.

- b. Where is Sam hiding out, because do you want the cops to get to him first?
- c. You're going to get fired, because do you think your boss would have his secretary type a dismissal notice just for fun?

(39'a), "Sam'll kill you if you don't (get out of here)" is a reason why the hearer should obey the directive to get out. In (41'a), just found out that Sam will kill you if you don't (get out of here)" conveys the information "Sam will kill you if you don't (get out of here)". The latter is a reason for obeying the directive to get out; the former, the speaker's just having found out the information, is not such a reason. Thus it is what is indirectly conveyed by the reason-clause that gives the reason why the hearer should obey the directive.

This would seem to suggest that the sentences in (41"), (43) and (44) are really amalgams formed by an extended version of (42), to be stated about as follows.

- 6) For all contexts C, if;
- i. the sentence consisting of S_0 modified by the reason-clause S_1 is true in C; and
 - ii. S_4 conversationally entails an assertion of S_1 in C; and
 - iii. S_2 is the i th phrase-marker in a derivation D such that the logical structure of S_0 is a felicity condition for, or a called-for response to, a logical structure S_3 which is conversationally entailed by the logical structure of S_2 in context C; then
 - iv. relative to context C, S_4 may occur as a reason-clause modifier of S_2 in the i th phrase-marker of derivation D,

(6) will allow for sentences even more complex than those given above, sentences where there are indirect speech acts both in the main clause and in the because-clause. Consider the following example.

- (7) I'm afraid the Knicks are going to win, because who on the Celts can possibly handle Frazier?

Let us consider how (46) accounts for (47).

- S_0 = I believe that the Knicks are going to win
 S_1 = no one on the Celts can possibly handle Frazier
 S_2 = I'm afraid the Knicks are going to win
 S_3 = The Knicks are going to win
 S_4 = who on the Celts can possibly handle Frazier?

Condition (46.i) requires that (48) be true in context C,

- (48) I believe that the Knicks are going to win because no one on the Celts can possibly handle Frazier.

Condition (46.ii) requires that S_1 conversationally entail an assertion on the part of the speaker of S_1 , which it does. Condition (46.iii) requires that S_0 be a felicity condition for the logical structure of S_3 . The latter would include the performative predicate of asserting: "I believe the Knicks are going to win" is a felicity condition for "I assert that the Knicks are going to win". Condition (46.iii) also requires that S_2 conversationally entail S_3 , which it does in the appropriate contexts. Thus, (46) allows the formation of (48), which is of the form " S_2 BECAUSE S_4 ". What Liberman calls an 'appositional' because-clause is simply a because-clause formed under the conditions of (46).

6. Liberman's Or-cases

In G. Lakoff (1966) it was suggested that sentences of the form (49a) were to be derived from structures underlying sentences of the form (49b).

- (49) a. Get out, or I'll slug you.
 b. If you don't get out, I'll slug you.

Liberman (1973) found examples that show that the or-cases are more complex than had previously been thought. Liberman observed cases like (50).

- (50) a. You'd better get out, or somebody'll slug you.
 b. I think you'd better get out, or I'm afraid I'll have to throw you out.

The or's in these sentences are not simple logical or's, nor can they be derived from corresponding if-clauses. Yet semantically they seem to be functioning like the or-construction of (49a).

- (51) Get out, or do I have to slug you?

(51), with the imperative in the first clause, seems to be a case of the same construction as (49a). But there is no if-construction corresponding to (51); moreover, there is a question in the second clause. In fact, such constructions exist with questions in both clauses.

- (52) a. Do you want to leave now or do you want to be thrown out?
 b. Can you leave now or would you like me to call the cops?
 c. Will you eat your kreplach or do I have to give you a smack?

Liberman came close to suggesting, many (if not most) of such cases sentences of the form " S_1 , OR S_2 " are understood as the corresponding sentences of the form " S_1 , BECAUSE IF NOT S_1 , THEN S_2 ", with certain provisos. Consider first the relatively easy cases.

- (53) a. You'd better leave, or somebody'll slug you.
 b. You'd better leave, because if you don't leave, somebody'll slug you.
- (54) a. I think you'd better get out, or I'm afraid I'll have to throw you out.
 b. I think you'd better get out, because if you don't (get out), I'm afraid I'll have to throw you out.
- (55) a. It's a good thing that ants aren't smart, or they would rule the world.
 b. It's a good thing that ants aren't smart, because if they were smart, they would rule the world.

These because-constructions in (53b) and (54b) are like those discussed above. The main clause contains an indirect speech act conveying a directive. In (53b) the because-clause directly gives the reason why the hearer should carry out the directive. In (54b), the because-clause contains an indirect speech act which conveys a reason why the hearer should carry out the directive. The because-clause in (55b) is straightforward. There are also cases where the or has the meaning of a because-clause that gives the reason why some felicity condition of the speech act in the main clause holds.

- (56) a. John must be dead, or he would have contacted us by now.
 b. John must be dead, because if he weren't, he would have contacted us by now.

These are the main clause hedgedly asserts that John is dead, and the because-clause gives the reason why the speaker believes that assertion. Liberman suggests that many of such or-cases should be derived transformationally from more remote because-constructions of the sort illustrated here. Such a derivation would account not only for most aspects of the meanings of such or-sentences, and for the occurrence of indirect speech acts in them, but also for such grammatical details as the occurrences of would in (55a) and (56a), which would follow from its occurrence in the then-clause following a hypothetical if-clause. If such or-sentences are derived from because-constructions of the sort discussed above, then they are syntactic amalgams, since the because-constructions are.

However, some complexities involved with deriving such or-constructions from because-if-not constructions ought to be noted. Certain questions pose a problem for any simple-minded analysis.

- (57) a. Get out, or do I have to call the cops?

- b. Get out, because if you don't (get out), do I have to call the cops?
 c. Get out, because if you don't (get out), I'll call the cops.
- (58) a. Why don't you call your mother, or she'll be very unhappy.
 b. Why don't you call your mother, because if you don't/*do, she'll be very unhappy.
 c. Call your mother, because if you don't/*do, she'll be very unhappy.

(57b) would present problems for any simple-minded transformational derivation of " S_1 , OR S_2 " from " S_1 , BECAUSE IF NOT S_1 , THEN S_2 ", since (57a) would presumably be derived from (57b), but (57b) is ill-formed. The problem is that the if-clause cannot occur with the indirect speech act question "Do I have to call the cops?" conveying a threat to call the cops. Of course, it does occur with the threat in direct speech act form, as (57c) shows. In other words, the problem is that the if-clause does not go with the question S_2 , but rather with the nonquestion (e.g., the threat) conveyed by S_2 .

There is a similar problem in (58). Again, on the assumption that " S_1 , OR S_2 " were to be derived from something like " S_1 , BECAUSE IF NOT S_1 , THEN S_2 ", we would expect the source of (58a) to be the version of (58b) with do rather than the version with don't; since S_1 in (58a) is negative, we would expect the if-clause of the source to be positive (or a double negative). But the reverse is the case, and the reason is clear: "Why don't you call your mother?", though itself negative, conveys a positive request to call your mother. The if-clause must be a negative not of the actual S_1 (a negative question) but of what S_1 conveys (a positive directive). As in the case of (57) the if-clause must match up not with the actual S_1 and S_2 , but with what is conveyed by them.

These observations suggest that no transformational solution deriving " S_1 , OR S_2 " directly from a more remote appositional because-clause will work. Instead, it would appear that the or-sentences will have to be derived directly by amalgamation, in much the same way as the appositional because-clauses are, but under somewhat different conditions. (59) is an approximation to such a rule.

(59) For all contexts C, if:

- i. the sentence consisting of S_0 modified by the reason clause IF NOT S_0 , THEN S_1 is true in C; and
- ii. S_1 conversationally entails an assertion of S_1 in C; and
- iii. S_2 is the *i*th phrase-marker in a derivation D such that the logical structure of S_0 is a felicity condition for, or a called-for response to, a logical structure S_3 which is

conversationally entailed by the logical structure of S_2 in context C; then

- iv. relative to C, F_n may occur disjoined to the right of F_{n-1} in the i th phrase-marker of derivation D.

There is some additional possible motivation for deriving the r -sentences directly by amalgamation instead of by transformation from appositional because-clauses, namely, the fact that appositional because-clauses are more restricted in their distributions than are or -constructions.

- (50) a. The judge ordered her to shut up, or he threatened to throw her out of the courtroom,
 b. ?*The judge ordered her to shut up, because if she didn't, he threatened to throw her out of the courtroom.

Appositional because-clauses are pretty bad to terrible with reported speech acts, while the or -construction is uniformly pretty good to excellent. Since transformational solutions rule out the situation where the input construction has a more limited distribution than the output construction, it would seem that a transformational solution is inappropriate here. The rules given in (46) and (59) are vague as to whether they are to apply in the case of reported speech acts. More adequate versions of those rules will have to limit (46) so that it does not apply in such cases, but leave (59) free to apply in such situations.

Tag Questions

Within transformational grammar, tag questions were assumed to be introduced by transformations that copied them onto the end of the sentence. Such a treatment has numerous syntactic problems, as discussed in Andres et al. (1971). I would like to suggest that tag questions are really reduced forms of real questions, which have been amalgamated onto the end of the sentence. Although the pragmatics of tag questions has turned to be so fearfully complex that I have not been able to get very far with figuring out the pragmatic conditions for such an amalgamation rule, there is a bit of evidence that seems to weigh in favor of a treatment via amalgamation. Consider (61).

- (61) You couldn't open the door, could you?

In a transformational approach, (61) would have the same underlying structure as "You couldn't open the door." Although (61) can be used to confirm such a proposition, it also has another use which cannot even approach an explanation using a transformational approach, namely, (61) can be a request to open the door. Why should this be possible? Note that the question "Could you open the door?" can convey a request to open the door. This suggests that it is no accident that (61) can convey a request. Nor is it an accident that it is a polite request in which there is a 'conventional' (in the sense of R. Lakoff

(1973)) assumption that the speaker couldn't open the door. In (61), the tag makes the request it would normally make and the main clause expresses the 'conventional' assumption. If the tag is just copied on, as in the transformational approach, that is, if it is not in any sense a real question, then there is no reason why (61) should have the meaning it does. If, on the other hand, (61) is an amalgam of a declarative and a real question, it is not at all surprising that the meaning of the question and the meaning of the declarative both figure in the meaning of the amalgam.

Another bit of evidence has to do with the particle now (not the time adverb now!) as in (62).

- (62) a. Now I wouldn't hit you,
 b. I wouldn't hit you now,
 c. Now I wouldn't hit you now,
 d. *I now wouldn't hit you,
 e. *I wouldn't now hit you,
 f. *I wouldn't hit now you.

The particle now may occur at the beginning or at the end of a sentence or both, but not in general in the middle. Now consider sentences like (63).

- (63) a. I wouldn't hit you now, would I?
 b. I wouldn't hit you, now would I?
 c. I wouldn't hit you now, now would I?
 d. Now I wouldn't hit you now, now would I?
 e. I wouldn't hit you now, now would I now?
 f. Now I wouldn't hit you now, now would I now?

If tags are derived by amalgamation from full questions which have sentence status of their own in other derivations that they are copied in from, then the facts in (63) follow naturally -- the now's can occur at either the beginning or the end or both of both the declarative sentence and the tag. On the transformational treatment, where tags are just strings of morphemes and do not have sentence status at all, the occurrence of not only one but two now's in mid-sentence would be an anomaly to say the least, as would the occurrence of four now's in a single sentence.

Negative contraction provides still another bit of evidence that tags are reduced forms of full sentences.

- (64) a. Has Figueister not committed a felony?
 b. Hasn't Figueister committed a felony?

- 5) a. Figrmeister has committed a felony, has he not?
 b. Figrmeister has committed a felony, hasn't he?

normal questions like (64), the position of the negative (before or after the subject) depends upon whether there is contraction. If contraction takes place, the negative appears before the subject with the auxiliary that it has contracted onto. Otherwise it appears after the subject. Tag questions show exactly the same distribution of negatives vis-a-vis their subjects, as (65) indicates. If tags are derived via amalgamation from full questions, this is just what would be expected and no additional rules would have to be stated. But if tags are copied onto the end of the sentence as a string of morphemes via a transformation and have no independent status as questions, then it is hard to see how the negatives could be copied into the right place at all, much less how their distribution could be accounted for in terms of the normal distribution of contracted and uncontracted negatives in questions.

Despite the enormous and as yet unanalyzed pragmatic complexities of tag questions, it is clear that certain of the phenomena that occur in the cases of amalgamation discussed above also occur in certain cases of tag questions. Consider, for example, cases like those discussed by R. Lakoff (1969), (1972).

- 6) a. The Giants won't win, will they?
 b. I guess the Giants won't win, will they?/*don't I?
 c. I don't suppose the Giants will win, will they?/*do I?
 d. I don't think the Giants will win, will they?/*do I?
 e. I don't believe the Giants will win, will they?/*do I?

As she observes, the tag indicates that the assertion made in the main clause is hedged, and it functions to ask for confirmation. The tag agrees with the assertion conveyed -- in subject and in auxiliary, and makes the opposite of the assertion's negative polarity. In each of the sentences of (66), the assertion indirectly conveyed is "the Giants won't win", and the tag agrees with it. As in the case of or-construction, where the negative of the if-clause had to be identical to what was conveyed by S_1 , so here too the negative of the tag question must be identical to what is conveyed by the main clause.

Such bits of evidence seem to indicate that tag-question constructions, when properly understood, will also turn out to be amalgams.

Implications.

The notion of 'the logical structure of a sentence' appears to be changed substantially by the phenomena of amalgams. Whereas before we could, within generative semantics, speak of the logical structure of a sentence, now that seems impossible, since there will be more than

one logical structure associated with any sentence formed by amalgamation. But it may still be possible to designate one of those logical structures as the principal logical structure, the one on which the truth conditions for the sentence depend. The principal logical structure would be the initial phrase-marker of the derivation into which the copying from other derivations is done. The other related logical structures would account for other 'pragmatic' aspects of the meaning of the sentence. At this stage, such a move seems possible, but further research may indicate that it is untenable.

Incidentally, the idea that the pragmatic aspects of meaning would not be part of the logical structure is by no means new. Similar proposals are needed to account for the meaning of particles such as too, say, huh, etc. and for the pragmatic conditions associated with certain rules of grammar, such as raising.

- (67) a. John is a Republican and Bill is a crook,
 b. John is a Republican and Bill is a crook too.
- (68) a. Where are you going?
 b. Say, where are you going?
 c. Where are you going, huh?
- (69) a. It has just now struck me that my wife has been dead two years tomorrow.
 b. My wife has just now struck me as having been dead two years tomorrow.

Such cases have been discussed by G. Lakoff (1971), James (1973) and Postal (1974). In such cases there are meaning differences that presumably could not be reasonably expressed in the logical structure of the sentence. In each case, there would be a 'pragmatic' assumption, expressed by another logical structure, and related to the sentence transderivationally. This is similar to what happens in the case of amalgams, except that in amalgams actual portions of another derivation are copied in. Thus, amalgam constructions of the sort we have looked at may actually provide no more problems for the notion of 'logical structure' than do particles and pragmatic conditions on transformations.

Given that certain rules of amalgamation are necessary, the theory of grammar will have to be extended slightly to allow for them. There are already transderivational rules that insert constants, delete constants, delete under identity, and change grammatical relations. All we need to do now is to allow transderivational copying rules as well. From that perspective the change is relatively minor. However, it is conceivable that such a minor change may lead to a major change in our conception of the theory of grammar. So far we have been looking at things conservatively and asking what evidence is there in favor of amalgamation rules -- what cases are they absolutely required for? But now that we know that some are needed,

one can ask a different question, namely, are there other constructions that could be handled by means of amalgams, even though they don't have to be. It is my present opinion that by using formal semantic techniques developed by Lauri Karttunen for dealing with embedded pragmatic presuppositions, it will be possible to treat relative clauses, complements, and conjunctions by rules of amalgamation. The reason I hedge is that I am not at all sure that the semantic and pragmatic conditions really can be worked out with Karttunen's apparatus. But if this is possible, there could be a version of generative semantics in which the notion of logical structure -- if it could be defined at all, would be radically changed. The set of logical structures would then be simple Ss consisting of predicates and arguments with no embeddings at all. All embedding could be done by amalgamation under semantic and pragmatic conditions. Such a theory should have a somewhat familiar ring to it. In some ways, it is reminiscent of the Syntactic Structures theory, with logical structures as kernel sentences and amalgamation rules as double-base transformations. There is, of course, a huge difference. Transformations in the Syntactic Structures theory were independent of meaning. Amalgamation rules have at their heart semantic and pragmatic conditions. Similarly, kernel sentences had no model-theoretical interpretations, while logical structures do. Such a theory is also reminiscent in some ways of Montague grammar, in which complex constituents are built up from simpler constituents under specifiable semantic conditions. Again there are important differences.

I should make it clear that I am not suggesting such a theory as being correct. I have no substantive evidence one way or the other. All that I have claimed is that rules of amalgamation are necessary. Given them, the question arises as to how far they can and should be pushed. And anyone who tends toward conservatism in his theorizing must confront a dilemma; which is more conservative: sticking as close as possible to generative semantics or moving toward a semanticized Syntactic Structures theory? Or even perhaps moving towards a nonderivational theory of the sort proposed by Jacobson (1974), in which the distinction between transderivational and transformational rules is lost -- somewhat reminiscent of Harris' transformational grammar.

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