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ABSTRACT

This paper seeks to discover the rules active in the formation of tags (intonation tags, declarative tags, and tag questions) in English. The author discusses former analyses of these constructions and presents his own thoughts with many examples, concluding that English has at least two tag formation rules: one that accounts (perhaps inadequately) for both declarative and intonation tags, and another that accounts (in not totally understood ways) for tag questions. An appendix lists the verbs which, in the author's opinion, can take complement tags. A bibliography is included. (Author/VM)

UNIVERSITY OF WASHINGTON

ENGLISH DECLARATIVE TAGS, INTONATION TAGS, AND TAG QUESTIONS

by

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STUDIES IN LINGUISTICS

AND

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Introduction

Sentences (i) through (iv) contain tags of one kind or another.

(i) Plushbottom bit me, he did.

(ii) Plushbottom bit you, did he? (with echo intonation)

(iii) Plushbottom bit you, didn't he?

(iv) Plushbottom didn't bite you, did he?

An interesting question is whether each of these sentences is the result of some single rule of grammar, or whether various rules "conspire" to produce a class of surface structures that we traditionally have labeled tags and that seem to be similar in several respects. If the latter turns out to be correct then the real question to be answered is why this should be the case. It is not totally clear what it means to ask a question such as this, yet it is probably true that linguistic theory remains inadequate to the extent that such a question is avoided under these cirumstances.

In the following pages I will discuss sentences like (i) through (iv), and others. My purpose will be to account for similarities and differences and thus to return to the first question posed in the preceding paragraph. If it should turn out that a single rule accounts for all the data, then the second question will not have to be asked. If not, then this paper will establish the data, in part, for some future inquiries into the nature of English in particular and language in general.

Section I: Declarative Tags

A sentence like (1) is apparently a purely stylistic variant of a sentence like (2).

(1) Plushbottom bit me, he did.

(2) Plushbottom bit me.

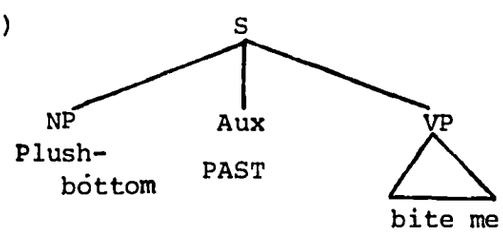
Both sentences assert that a certain character by the name of Plushbottom bit the speaker. Sentence (1) differs from (2) not in what is asserted, focused, etc., but merely in that it has a more earthy, easy-going style. In terms of transformational grammar, then, (1) may be derived from the same source as (2) by way of an optional transformation whose existence has until now received no attention in the literature. Let us take (3) to be a first approximation of this rule.[1]

(3) TAG FORMATION (Optional)

$$S\ [\underbrace{NP\ +\ Aux}_{1}\ -\ X \qquad 2 \Rightarrow 1\ 2\ 1$$

Rule (3) copies a subject NP and Aux onto the right end of a sentence meeting its structural description. For the moment we assume a late rule PRONOMINALIZATION, and we avoid the question of what dominates the copied elements. If rule (3) operates on phrase marker (PM) (4), sentence (1) is the result.

(4)



It is efficient to order rule (3) before AFFIX HOPPING and DO SUPPORT, so that these rules may handle the elements in the copied Aux just as they do in any other Aux. Rule (3) cannot be cyclic, as the following sentences show.

(5) *Peg said Plush bit me, he did.

(6) *I suppose Plush bit me, he did.

(7) *They all saw Plush bite me, he did.

Rule (3) must therefore either be pre-cyclic or post- or last-cyclic. Since the rule must follow PASSIVE, as in (8),

(8) I was bitten by Plushbottom, I was.

it must be post- or last-cyclic.

Let us turn to a more careful formulation of rule (3). It is clear, first of all, that (3) must be constrained so as not to produce the ungrammatical (9)-(11).

(9) *Plush didn't bite me, {he didn't. / he did.}

(10) *Plushbottom has no collar, {he doesn't. / he does.}

(11) *Plushbottom didn't leave an hour ago, {he didn't. / he did.}

That is, rule (3) must not apply to PMs containing sentence negation. Assuming an analysis of negation similar to that of Klima (1964), the easiest way to state this restriction is to order rule (3) before NEG PLACEMENT, which moves a sentential NEG from its original sentence-initial position. Since the first term of rule (3) begins with NP, the rule cannot apply if a NEG has been generated. Similarly, rule (3) cannot apply if a sentence is a neutral yes-no or WH question. There are no sentences like (12) and (13).

(12) *Did Plush bite you, {did he? / he did?}

(13) *Where did Plush go, {did he? / he did?}

Rule (3) must therefore be ordered before the rule that moves a possible WH away from its initial position in the structure generated by the phrase structure rules. Ordering rule (3) in this way prevents the ungrammatical (9)-(11)

and (12)-(13) from being generated since term one in rule (3) begins with NP.

No such ordering considerations affect the grammaticality of (14), however, so rule (3) remains suspect.

(14) *Plushbottom has been biting me, he has been.

What is wrong with (14) is clearly the final been. There are possibly two ways of correcting this situation without too much additional machinery. One way would be to argue that a later rule ELLIPSIS, such as that whose effects we see in (15),

(15) John thinks I have been there, and I have.

operates on (14) to give us a grammatical (16).[2]

(16) Plushbottom has been biting me, he has.

The trouble with this approach is that ordinary ELLIPSIS may operate not as in (15) but as in (17).

(17) John thinks I have been there, and I have been.

A condition on ELLIPSIS, ordinarily optional but obligatory just in case the sentence is a tag, is suspicious though possible.

The other approach to ruling out the ungrammatical (14) is to reformulate rule (3) so that it copies only part of the Aux rather than all of it. Rule (3) is reformulated as rule (3').

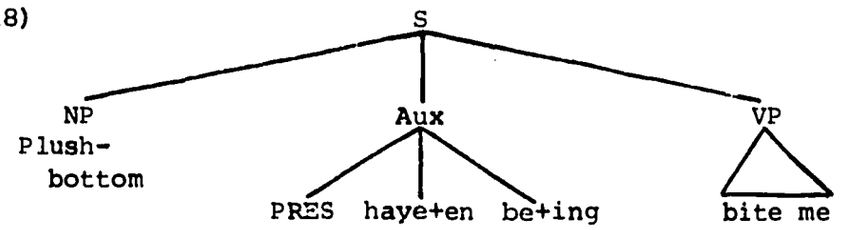
(3') TAG FORMATION (Optional)

$$S[\underbrace{NP \quad T(\left\{\begin{matrix}\text{modal}\\ \underline{\text{have}}\\ \underline{\text{be}}\end{matrix}\right\})}_{1} - X$$

$$2 \Rightarrow 1\ 2\ 1$$

Rule (3') may now optionally apply to PM (18) on the next page in order to produce sentence (16) while avoiding (14).

(18)



Although rule (3') appears to buy the correct results with only a slight additional cost over rule (3), there is a certain amount of suspicion surrounding any rule that operates on non-constituents: why rule (3') may be allowed to copy the subject NP, Tense and have in (18) is a question that general theory must concern itself with. Not only do these elements not form a constituent, but part of the constituent have+en, namely en, is ignored in the copying operation. It is clear that a theory of language that prohibits such rules as (3') is to be preferred, since such a theory would narrow the class of possible grammars. Whether the arguments of Ross (1969b) are valid or he has supplied a mere notational variant of the scheme used here, as argued in Chomsky (1970), we will assume that our reformulated rule (3') is correct in this regard, and that ELLIPSIS plays no role in the derivation of sentence (16).

Let us return to the question of what dominates the copied elements (i.e., the tag) in sentence (1), repeated here.

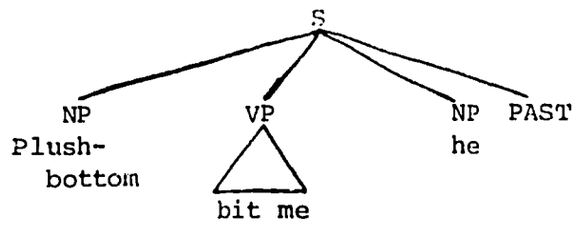
(1) Plushbottom bit me, he did.

A major consideration is the fact that sentence (1) is invariably pronounced with a break just before the tag, as in (19).

(19) Plushbottom bit me--he did.

A break at any other point is unthinkable. Thus the surface structure (SS) of (1) cannot be (20) on the next page, as our rule (3') incorrectly predicts.

(20)

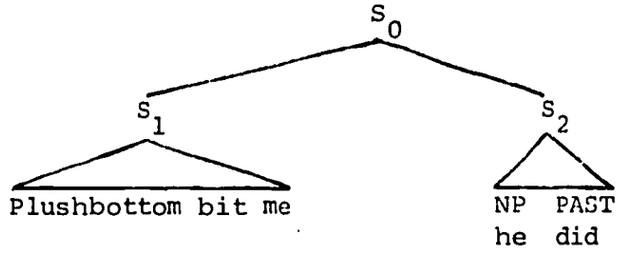


The use of Chomsky adjunction in the copying rule appears to make possible a more reasonable SS. We revise rule (3) still further as rule (3"), which may assign the SS of (21) to (1).

(3") TAG FORMATION (Optional)

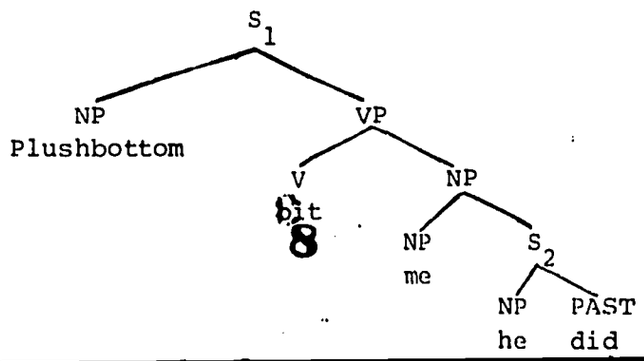
$$S[\underbrace{NP \quad T(\{\underline{\text{modal}}, \underline{\text{have}}, \underline{\text{be}}\})}_{1} - X \qquad 2 \Rightarrow 1\ 2\#_S[1]_S$$

(21)



Actually, rule (3") can be criticized in two ways. First, it is incapable of assigning sentence (1) the structure of (21). This is so because of the variable as the second term of this rule. In the example we have been using this variable ranges over V NP (that is, bite me). This means that the tag would be Chomsky adjoined to NP, which is the right-most element of X, but within the original S_1. Thus rule (3") would assign sentence (1) the structure of (22), which is incorrect.

(22)



If (21) were to result from the application of rule (3"), this rule would have to be revised still further so as to mention the right-most boundary of the input sentence. It is outside this boundary that we wish to do the structure building indicated by S_0 in (21).

Yet even if rule (3") were formulated along the lines suggested here, a criticism of it would still exist. Notice that in structure (21) the tag is dominated by an S node. This node is obviously not the inherent result of Chomsky adjunction. It must be built into rule (3") as given. But now we may ask why this node dominating the copied tag should be S rather than, say, VP or PP or Zed. Clearly we want it to be an S because the tag, consisting of NP plus some auxiliary element(s) "feels like" an S.[3] But this is just an accident in this analysis, since as far as rule (3") is concerned any node whatsoever could be created to dominate the tag. There is some generalization about what constitutes an S that is lost if this information must be built into rule (3") as given.

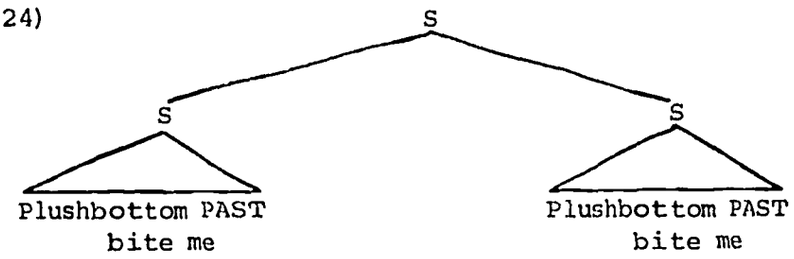
One way out of the second criticism posed here is to return to the idea that ELLIPSIS is responsible for the structure of the tag in sentence (1). Let us reject rule (3) and its reformulations in favor of a rule that Chomsky adjoins the copy of an entire sentence to the right of that sentence.

(23) TAG FORMATION (Optional)

$$S\overbrace{[NP \quad X]}^{1}{}_S \Rightarrow 1\#1$$

Rule (23),[4] as rule (3) earlier, must be a post- or last-cyclic rule ordered before NEG PLACEMENT so as to prevent the ungrammatical (5)-(7) and (9)-(11). With the structure underlying sentence (1) as input, rule (23) produces (24) on the next page, details aside.

(24)



A rule of ELLIPSIS that will erase the proper elements of (24) is formulable as (25).

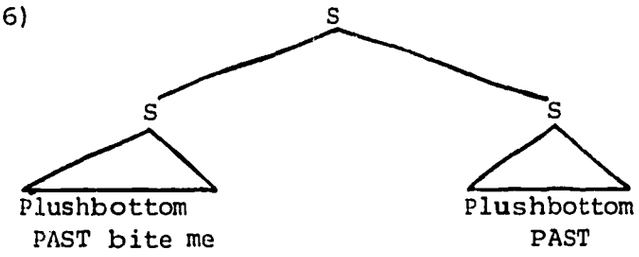
(25) ELLIPSIS (Obligatory)

$$S - {}_{S}[NP \underbrace{\quad T(\left\{\begin{matrix}\text{modal}\\ \underline{\text{have}}\\ \underline{\text{be}}\end{matrix}\right\})}_{2} - X$$

$$1 \qquad\qquad 3 \Rightarrow 1\ 2\ \emptyset \quad \text{cond: } 1 = 23$$

Structure (26) is the result of applying rule (25) to intermediate structure (24) underlying sentence (1).

(26)

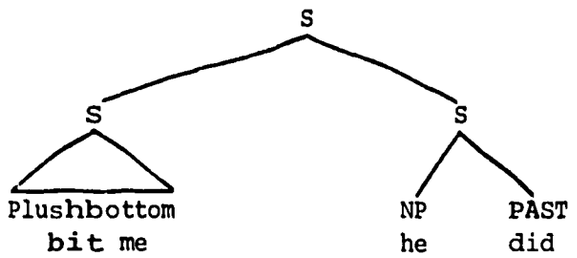


Rule (25) must follow rule (23); it also must precede AFFIX HOPPING for the reason given earlier. The relationship of rule (25) to whatever produces other sentences with ellipsis is not clear. We noted earlier its obligatory operation in cases involving tags. The obligatory nature of the rule may in fact depend on total identity of the clauses in the structural description. A condition of identity is of course not uncommon in transformational grammar, but if the particular structural change in rule (25) somehow follows inherently from such identity, it is not clear why this should be the case. Furthermore, although the domain of rule (25) is taken to be Sentence, it is obvious that some types of ellipsis are possible within larger domains. An adequate understanding of ellipsis within discourse is necessary in order to

judge whether rule (25) is essentially the same as or different from whatever rule(s) may account for these other instances of ellipsis. Needless to say, this understanding is yet to be.

Notice finally that rule (23) predicts that the tag is dominated by S, as we have argued is desirable. The SS of (1) is predicted to be roughly (27), which seems reasonable.

(27)



A probable immediate objection to this analysis of the data should be dealt with. Structure (24), here the result of applying rule (23), looks very similar to certain trees generated directly by the phrase structure rules (PSR). In particular, (24) has the general appearance of a sentence with two conjuncts (or disjuncts). Why not generate (24) directly by modifying the PSR as follows?

(28) $S \rightarrow \left(\left\{ \begin{matrix} \text{and} \\ \text{or} \end{matrix} \right\} \right) S^n$ (where $n \geqslant 2$)

$S \rightarrow$ (WH) (NEG) NP Aux VP

et cetera

We have now made the and and or of conjunction and disjunction optional elements. If they are not chosen, then structure (24) may be generated. If our ELLIPSIS now applies the result is sentence (1), details aside.

Although this is a possible analysis of tags, there are several reasons why I think it is untenable. First, the condition on the first PSR above must be complicated. If and or or is chosen, then n must be greater than or equal to 2. But if one of these elements is not taken, then n must be exactly 2. Alternatively, some ad hoc SS interpretation rule might be proposed that

would state that a sentence consisting of three or more sentences without and or or is ungrammatical.

Second, consider the fate of a DS consisting only of two sentences which are not identical. ELLIPSIS could not apply and the result is an ungrammatical sentence. Yet another ad hoc SS rule might state that, given this circumstance, the sentence is ill formed. Or an extremely complicated condition on the PSR might force the two embedded sentences in question to be identical.

Third, consider the relationship of the pro-form in the tag to the full NP in the main clause of a declarative tag. If, as has been argued by Jackendoff (1969), there is no syntactic rule PRONOMINALIZATION in English (see discussion below), then in the alternative analysis under discussion here the two sentences underlying a declarative tag must be identical except for "corresponding" pro-form in the tag clause. One can only imagine what a condition on the PSR accomplishing this end would look like. We will argue directly that Jackendoff's general rules for interpreting pro-forms cannot handle tags, assuming that pro-forms are freely inserted at DS (that is, with no condition on identical second clause down to pro-form).

Fourth, consider what would happen if PASSIVE, EXTRAPOSITION, or some other optional rule were to apply to one source sentence but not the other. ELLIPSIS would be blocked due to non-identity and an ungrammatical sentence would result. If PASSIVE and EXTRAPOSITION do not exist as transformations, then there is probably no reason to think that ELLIPSIS does either, so that is one way out of the problem. If the optional rules do exist, then they might conceivably be constrained so as to apply to both or neither of the sentences underlying a declarative tag, but constraining them in this way would not add any particular insight into our knowledge of how English works.

Because of these difficulties with the proposed alternative analysis of declarative tags, I think the present analysis with rule (23) and our ELLIPSIS (which may or may not be needed anyway) is preferable.

Let us return now to the question of how the subject NP of the tag comes to be a pronominalized form. As mentioned above, Jackendoff (1969) has argued that there is no rule PRONOMINALIZATION in the syntax of English. Under Jackendoff's analysis, pro-forms such as he, she, and they are lexical items that are inserted into PMs at the level of DS just as are other lexical items. Semantic interpretation rules determine correference or the lack of it between full NPs and pro-forms. For example, in sentence (29),

(29) Plushbottom was acting up and she bit him.

interpretive rules determine that Plushbottom and him may be correferential and that Plushbottom and she are noncorreferential. That is, a structure of conjunction or disjunction may generally have a pro-form in either clause, here she, totally unrelated to any full NP (or other pro-form) in the other clause.[5]

Now consider again sentence (1), repeated here.

(1) Plushbottom bit me, he did.

Without an expanded base rule schema, sentence (1) presents Jackendoff with a serious problem: what is the source of he in the tag of (1)? A possible answer is that our rule (23), TAG FORMATION, adjoins a sentence containing the pronominal form of the original subject NP. This is tantamount to incorporating a rule of PRONOMINALIZATION into our TAG FORMATION, for if there were a later PRONOMINALIZATION it would have precisely the effect of reducing the second occurence of Plushbottom to he.[6] Altering our rule (23) in this way would certainly be a significant loss in generality for Jackendoff, since pro-forms would then be inserted at DS everywhere except where they must be produced by transformational rule.

But the case against Jackendoff's proposed interpretive analysis of pro-forms is stronger still. Notice that in sentence (29) him and Plushbottom may be correferential, but they need not be. That is, he may refer to some male other than Plushbottom. But in sentence (1) this possibility does not exist: he and Plushbottom must be correferential or the sentence is ungrammatical. This means that Jackendoff must make a separate statement about tags such as (1), sensitive presumably to the structure of these sentences, in order to determine correference. Any such semantic statement must mention both the tag and the preceding full clause, then say that the two subject NPs are correferential. But this is essentially what the syntactic rule TAG FORMATION does when it copies. Thus in order to state the restrictions on reference in tags such as (1), Jackendoff would be forced to partially duplicate a syntactic rule in the semantic component.[7]

We conclude, therefore, that the argument for the interpretive analysis of pro-forms is seriously weakened by the existence of tag sentences such as (1). We will assume a late syntactic rule of PRONOMINALIZATION in the derivation of these tags. The order of rules necessary for the derivation of (1) is as follows:

(30)

i) TAG FORMATION (optional, post- or last-cyclic)
ii) NEG PLACEMENT (obligatory, cyclic)
iii) ELLIPSIS (obligatory, post- or last-cyclic)
iv) PRONOMINALIZATION (obligatory, post- or last-cyclic)

Section II: Intonation Tags

Consider sentence (31) pronounced with echo intonation, as indicated by the contour.

(31) Plushbottom bit you, did he?

This sentence is not a paraphrase of (32), which is a neutral yes-no question.

(32) Did Plushbottom bite you, or not?

While (32) is a neutral request for information, the speaker in (31) is biased toward an affirmative response. This does not mean that a negative response is inappropriate or ungrammatical, merely that the speaker anticipates an affirmative response. For example, suppose the speaker walks into my living room and sees me sitting on the floor rubbing a bleeding shin, while Plushbottom scowls from the corner. The speaker may put two and two together and suggest that he knows what happened by asking (31). On the other hand, if the speaker really has little idea one way or the other about what happened, his question might take the form of (32).

It has been argued by Langacker (1970), and others, that question (32) is a reduced form of (33).

(33) Did Plushbottom bite you or did he not bite you?

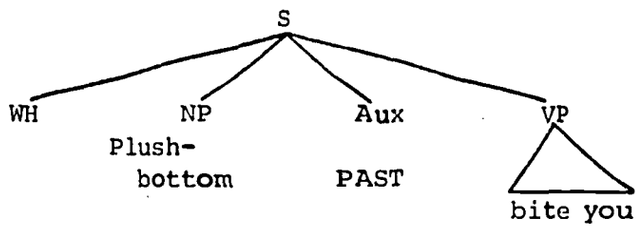
Further, (32) may optionally have the final or not deleted, with (34) as the result.

(34) Did Plushbottom bite you?

Langacker's motivation for an or not deletion transformation is the fact that (34) has the same interpretation, that is, neutral yes-no question, as (33) and (32). Syntactic motivation for the deletion rules producing (32) and (33) comes from the fact that all "primary" questions--neutral yes-no and WH questions--may then be derived from a single underlying configuration.

At first glance it would appear that sentence (31) could be derived from (34), along the lines discussed in the last section. Omitting irrelevant details, the structure of (34) just before a rule of INVERSION applies can be taken as (35).

(35)



Notice that in (31) inversion has taken place in the tag but not in the main clause. It appears then that the WH in (35) must be relocated as a constituent of the copied tag. It is a simple matter to reformulate rule (23) of the previous section so that WH, if present, affects only the tag.

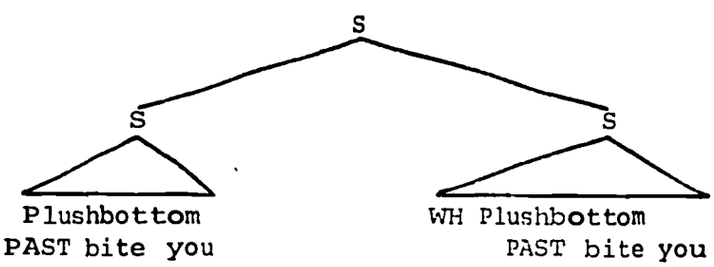
(36) TAG FORMATION (Optional)

$$S[(WH) - \underbrace{NP \quad X}_{2}]_S$$

$$1 \qquad 2 \quad \Rightarrow \emptyset \; 2\#1 \; 2$$

The result of applying rule (36) to PM (35) is (37).

(37)



The ELLIPSIS rule formulated in the previous section cannot apply to PM (37), as desired, since the condition of identity is not met because of the WH in the tag. The ELLIPSIS rule may be reformulated to overcome this difficulty as follows.

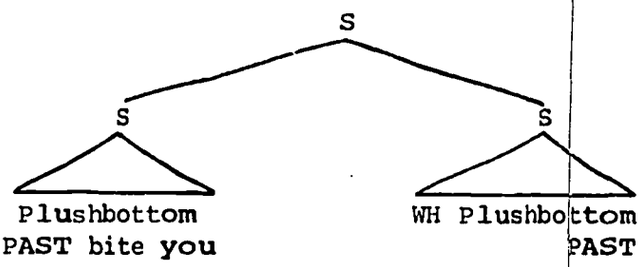
(38) ELLIPSIS (Obligatory)

$$S - {}_S[(WH) - \underbrace{NP \quad T(\left\{\begin{matrix}\text{modal}\\ \underline{\text{have}}\\ \underline{\text{be}}\end{matrix}\right\}) - X}_{3}]_S$$

$$1 \qquad 2 \qquad 4 \Rightarrow 1\ 2\ 3\ \emptyset \quad \text{cond: } 1 = 34$$

Applying the reformulated rule of ELLIPSIS to PM (37) gives us the desired structure (39).

(39)



Structure (39), ignoring intonation, results in (31) after the application of subsequent straightforward rules.

We have now apparently accounted for sentence (31) as derived from the same source as (34), both repeated here.

(31) Plushbottom bit you, did he?

(34) Did Plushbottom bite you?

We have done this using the rules established in the last section, with slight modifications. However, a serious objection may be answered. One might argue that the derivation of (31) and (34) from a common source involves a change in meaning, or more accurately, in bias. It is true, as we noted earlier, that (31) expresses a positive anticipation or bias on the part of the speaker. The situation is not so clear for (34), which does not so patently express a bias. Assuming, first, that (34) does not under any circumstances have an associated positive bias, how would we answer the charge that our derivation has changed bias? In this paper we have not taken a stand in the lexicalist-transformationalist debate. Lexicalists, for example Culicover (1970), argue explicitly that the semantic interpretation of questions must map off the pair DS/SS. Assuming sufficient syntactic motivation for the processes involved in our derivation of (31) and (34), there should be no objection regarding the bias or lack of it. Obviously, a bias interpretation cannot be changed by syntactic rules if the interpretation is not determined until all syntactic rules have applied.

On the other hand, we have been following the analysis of primary questions presented by Langacker (1970), who is not a lexicalist. It therefore behooves us to show that (34) may at times have an associated positive bias (that is, it would be derived from a different source than (32) and (33)), in which case the objection would fall.

Consider the following dialogue:

(40)

A: What in the world happened? Did Plushbottom bite you?

B: He sure did.

A: (a) I thought so.

(b) ?*I didn't think he did.

Here A's final remark (a) is perfectly acceptable, but (b) is strange. It seems to indicate that A was intentionally trying to mislead B by his earlier question, though he accidentally turned out to be right. Now if A's question about Plushbottom biting B were a neutral yes-no question, we would not have any basis for judging A's final remark (b) as strange. This is obvious from the following passage:

(41)

A: Has Plushbottom been fed yet (or not)?

B: He sure has.

A: (a) I thought so.

(b) I didn't think he had.

In (41) both of A's final remarks are perfectly acceptable, so we may be sure that his question was without bias.

There is another indication that question (34) may have a bias associated with it. Returning to dialogue (40), notice that A's opening questions could not take the form of (42) on the next page.

(42) What in the world happened? *Did Plushbottom bite you (,) or not?

A comparison of (42) with the first lines of (40) further suggests that we are not dealing with a neutral question in (40). In fact, it is probable that the question about Plushbottom in (40) is A's suggestion of an answer to his own first question, that is, what happened to B. As we see in (42), it is rather strange to anticipate that what happened was either that Plush bit B, or that he didn't. The deviance of (42) and of A's final remark (b) in (40) is therefore explainable in terms of bias.

Still, we are not totally convinced that (34) and (31) may be fully synonymous. There is no doubt that (31) is a paraphrase of (43), however, which also has echo intonation.

(43) Plushbottom bit you?

Questions like (43) have been called "intonation questions", presumably because they do not show inversion and intonation is all that distinguishes them from the corresponding declarative. From a lexicalist standpoint, it is tempting to think that (43) is derived from the same source as (34), perhaps by a rule that removes the initial WH, thereby preventing inversion. Well-known restrictions on the occurrence of sentential adverbs suggest that this may be the case.

Leaving unresolved the question of common origin for (34) and (43), is it reasonable that (43) be related to (31) by the rules of the previous section? Obviously, if (43) has at one time an initial WH our revised rule (36) may apply to it and create a tag, moving the WH from initial position at the same time. Rule (36) must apply before the rule suggested in the preceding paragraph, which apparently deletes WH and produces (43). In a lexicalist analysis, this is merely a restatement of what we discussed earlier. In a

generative semantics analysis, however, (34) and (43) would have to derive from independent sources, if we are correct in our doubts about (34) having a positive bias, so our suggestion that the structure underlying (43) may be modified by rule (36) is very tentative.

Consider now the following sentence, read with echo intonation as indicated.

(44) Plushbottom doesn't like liver, doesn't he?

This question might be asked by a veterinarian who is examining Plush and wishes to confirm a possible cause for his bedraggled condition. Just as (31) expresses a positive bias with respect to the proposition Plushbottom bite you, (44) expresses a negative bias with respect to the proposition Plushbottom like liver. It is paraphrasable as (45).

(45) Plushbottom doesn't like liver?

Now (44) seems to bear the same relationship to (45) as (31) bears to (43). Recall, however, that the TAG FORMATION rule we suggested applies in the derivation of (31) was formulated so that it would not apply to a structure containing sentence negation. This was necessary to prevent ungrammatical sentences such as (46).

(46) *Plushbottom doesn't like liver, he doesn't.

Sentence (44) seems to indicate that if WH is present in the PM to which we wish to apply TAG FORMATION, then NEG may be present as well. We may revise, once again, TAG FORMATION as follows.

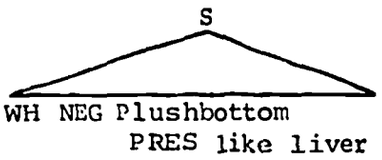
(47) TAG FORMATION (Optional)

$$S[(WH - \underbrace{(NEG))\ NP}_{2} - X$$

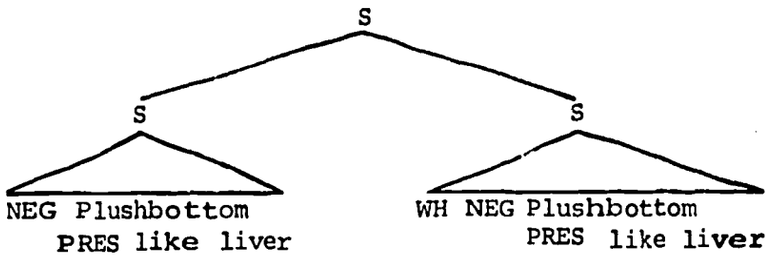
$$1 \qquad 2 \qquad 3 \Rightarrow \emptyset\ 2\ 3\#1\ 2\ 3$$

Assuming an underlying structure (48) in the derivation of (45), TAG FORMATION optionally produces (49).

(48)



(49)



As currently formulated, our ELLIPSIS rule (38) will not apply to structure (49). We therefore revise ELLIPSIS as (50).

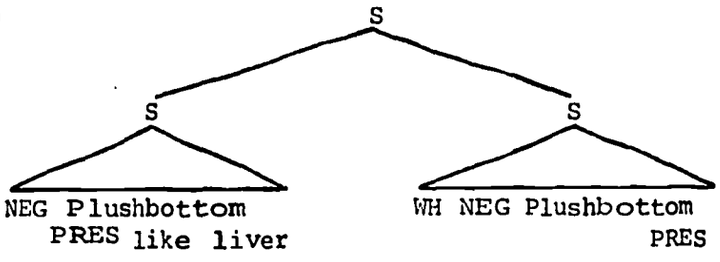
(50) ELLIPSIS (Obligatory)

$$S - {}_{S}[(WH) - (NEG) \quad NP \quad T(\begin{Bmatrix} \text{modal} \\ \underline{\text{have}} \\ \underline{\text{be}} \end{Bmatrix}) - X$$

1 2 3 4 $\Rightarrow$ 1 2 3 $\emptyset$ cond: 1 = 34

Applying ELLIPSIS to structure (49), we get (51).

(51)



Subsequent straightforward rules produce a final (44), ignoring as before the problem of intonation assignment.

We have now tentatively accounted for the following sentences in this section:

(31) Plushbottom bit you, did he?

(44) Plushbottom doesn't like liver, doesn't he?

A consideration of further data substantiates our analysis to some extent.

Recall that we derived (31) and (44) from the same sources as (43) and (45), respectively.

(43) Plushbottom bit you?

(45) Plushbottom doesn't like liver?

But now note that both (43) and (45) may occur embedded under a number of verbs of mental activity with first person subject, still with echo intonation.

(52) I {suppose / imagine / take it} {Plushbottom bit you? / Plushbottom doesn't like liver?}

The fact that the embedded clauses of (52) do not tolerate tags is correctly predicted by the TAG FORMATION rule that we have been discussing, since it is a post- or last-cyclic rule. Compare (53) with (52).

(53) *I {suppose / imagine / take it} {Plushbottom bit you, did he? / Plushbottom doesn't like liver, doesn't he?}

There still remains a serious difficulty, however. Consider the following intonation tags.

(54) *Plushbottom doesn't like liver, does he not?

(55)a Plushbottom does not like liver, {*does he not? / ?*doesn't he?}
b

Sentences (54) and (55a) show that if NEG occurs in the tag of an intonation question it must undergo CONTRACTION. Sentence (55b), though slightly less clear in my judgment, indicates that even if NEG does contract in the tag, an intonation tag is ungrammatical if NEG does not contract in the main clause. How are these facts about contraction to be accounted for?

There are a number of ways to block the ungrammatical (54) and (55). CONTRACTION may be obligatory if the sentence is an intonation tag. Yet how

is this condition on CONTRACTION to be stated? Since ordinary tag questions need not undergo contraction of NEG either in the tag or in the main clause, the condition on CONTRACTION for intonation tags must apparently appeal to the fact that NEG, if present at all, occurs in both the tag and the main clause. This solution tells us nothing of interest about why CONTRACTION must apply in these sentences.

Another way to block intonation tags that have not undergone contraction of NEG might be to define a SS constraint along the lines of Perlmutter's (1968) solution to the problem of SS order of Spanish clitic pronouns. That is, we might have to say, simply, that an intonation tag that has not undergone NEG contraction is ungrammatical. Such a solution, by definition, surrenders all hope of explaining the data since the constraint might just as easily say that intonation tags are grammatical only if, for example, they have not undergone CONTRACTION.

Yet a third way to account for the observed data might be to define a global derivational constraint on TAG FORMATION. Under this solution, TAG FORMATION could not operate on an input tree if at SS that tree contained any uncontracted NEG (and the sentence was an intonation tag). But, as before, we are stating the facts without explaining them.

None of the three solutions mentioned above is satisfactory in that none of them indicates in what way the fact of obligatory NEG contraction in an intonation tag sentence follows from any other fact about English. Attacking the problem from the other side, we might ask what the cause of any instance of contraction is. Presumably, at least some contraction results from reduced stress in certain environments.[8] We might wish to argue that intonation tags, by their very nature, are characterized by reduced stress and therefore susceptible to CONTRACTION. In this way we could explain why contraction must occur here. This line of reasoning runs into immediate problems,

however, since as we have already noted, ordinary tag questions may undergo CONTRACTION or not, with no loss in grammaticality. Yet we would not like to argue that these tags may or may not have reduced stress. Further, we would still have to explain why any NEG in the main clause of an intonation tag must also contract, while in an ordinary tag there is no such restriction. Surely this cannot have anything to do with inherently reduced-stress environments.

In an attempt to account for the fact that there is no form of not with reduced-stress vowel (i.e., *nət), Zwicky (1970) has suggested that certain instances of not enter the phonological component as affixes to verbs, similar to -ness and -able. Because of their affixal character these instances of not will remain stressless and eventually their vowel will be deleted by a very minor rule applying only to not as an affix. Clearly Zwicky's suggestion is no help to us here, for it merely pushes the question back to why not in intonation tags must obligatorily undergo whatever process makes affixes out of NEG. It appears, then, that there is no satisfactory explanation for the ungrammaticality of (54) and (55), although there are of course ample mechanisms within transformational grammar to produce the correct results. At the very least, no explanations have presented themselves to me.

Let us summarize this section: We have modified both the TAG FORMATION rule and the ELLIPSIS rule of the first section so as to extend their application and account, tentatively, for intonation tags, both affirmative and negative, as well as the declarative tags handled earlier. The claims of this section remain tentative since we have failed to specify the exact source of intonation tags. We did assume that they contain all and only the structure indicated as input to our TAG FORMATION, at the time that rule applies. Since TAG FORMATION is a late rule, this does not seem unreasonable. Our analysis, though incomplete and hence suspect, does account for our intuitions

that declarative tags and intonation tags are similar in some respects and different in others. Finally, the problem of contraction in intonation tags was raised.

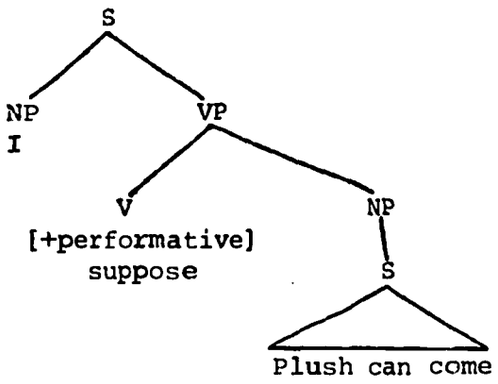
Section III: Tag Questions

Lakoff (1969) presents a partial analysis of tag questions under the transformationalist hypothesis. She notes the synonymy of tag questions such as (56a) with those embedded under certain types of verbs such as (56b).

(56)a Plush can come, can't he?
b I suppose Plush can come, can't he?

Lakoff assumes an underlying representation containing at least the structure of (57),

(57)



and a transformation that would copy the subject NP and Aux of the embedded clause with polarity reversed in the usual way.[9] The higher clause in (57), which contains what Lakoff calls a performative verb with the meaning of suppose, may be deleted by the independently motivated rule PERFORMATIVE DELETION. These two rules and structure (57) account for (56a-b).

Consider what happens if the proposition of (56a) is negated.

(58)a Plush can't come, can he?
b I suppose Plush can't come, can he?
c I don't suppose Plush can come, can he?

Sentences (58a-b) are derived in the same way as (56a-b). But note that in (58c) the polarity of the tag does not disagree with the polarity of the embedded clause. If the normal[10] generalization concerning reversal of polarity is to be preserved, then a rule of NEG TRANSPORTATION must have applied after Lakoff's TAG FORMATION, raising NEG from the embedded clause to the clause with suppose. Lakoff takes sentences such as (58a-c) to be syntactic

evidence for the rule of NEG TRANSPORTATION. This adds weight to the usual semantic argument for the existence of such a rule.

In Lakoff's analysis, tag question formation takes place only directly under a verb such as suppose, which she calls a performative verb. This verb may be abstract and not appear in SS, or it may be a real verb with phonological shape. Three rules are required: TAG FORMATION, a last-cyclic rule ordered before NEG TRANSPORTATION, a cyclic rule; and PERFORMATIVE DELETION, last-cyclic ordered after TAG FORMATION. These rules operating on underlying structures comparable to (57) account for the questions of (59) in a straightforward way.

(59)a I don't suppose Plush will eat, { will he? / *won't he? / *do I?

b John doesn't think Plush will eat, { does he? / *won't he? / *doesn't he?

As noted above, Lakoff's analysis is not complete. Her underlying representation, for example, does not contain any indication that tag questions of this type are in fact questions. Although TAG FORMATION, which she does not formulate, could mechanically account for inversion in the tag in an uninteresting way, it could not account for the question interpretation of the sentence, given the framework of the transformationalist hypothesis. On the other hand, merely inserting a WH formative in her underlying representation (57)[11] would solve nothing since this would certainly be inadequate semantically and syntactically: suppose does not take questions freely.

(60) *I suppose { when Plush left the party (didn't he?) / why Keyso hates grass (doesn't he?) / whether Plush perseveres or not.

That is, even with WH in structure (57), some motivation must be found for limiting the clauses associated with it so that a yes-no or WH question cannot occur embedded in SS.

Culicover (1971) wants to account for more kinds of data than Lakoff and attempts to show that the transformationalist analysis fails in principle since it cannot treat the syntax of tag questions and other sentences in a uniform way, as he does. Consider the questions of (61) with non-rising intonation on the main clauses.

(61)a Plush left, didn't he?
b Plush didn't leave, did he?
c Plush left, did he?

Sentences (61a-b) are the "normal" tag questions that have received treatment in various prior analyses. (61c) has not been well discussed. It is interpreted as the statement or repetition of a proposition with which the speaker may not have much involvement, although he may doubt it to some degree. It may mean that the speaker believes the proposition asserted by someone else, but feels negatively toward it. The point here is that semantically (61c) differs radically from (61a-b), yet syntactically it may be accounted for in a way uniform with them. Culicover's claim is that a transformationalist analysis cannot account for the uniform syntax in a non-ad hoc way, while in a lexicalist analysis the syntax follows directly from generally accepted rules.

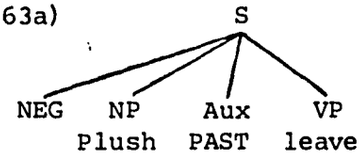
Part of what Culicover wants to account for is the posisiton of NEG in the tag of (61a). If this NEG is introduced by some rule of TAG FORMATION (as in Lakoff's analysis and others), why does it just happen to occur in the position occupied by NEG directly generated by the PSR? Why does NEG not show up as in (62)?[12]

(62)a *Plush left, not did he?
b *Plush left, did not he?

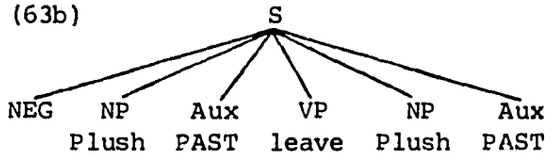
The position of NEG in tags and the fact that there is a maximum of one NEG in a tag question (according to Culicover's judgments) are explained if tag formation takes place before the rule that moves NEG into its position in the Aux (i.e., before NEG PLACEMENT). That is, from a structure like (63a) the TAG

FORMATION rule gives something like (63b), details aside.

(63a)

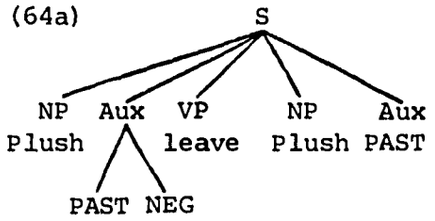


(63b)

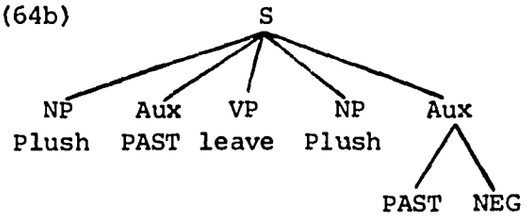


If NEG PLACEMENT is now allowed to apply to (63b), either of (64a-b) may be the result.

(64a)



(64b)

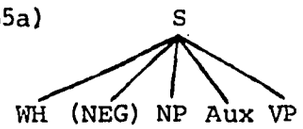


If NEG is not generated by the PSR, then there is no NEG to be moved into one or the other Auxs, and a sentence like (61c) results.

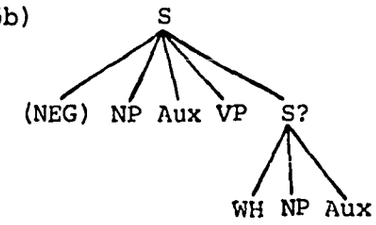
Culicover notes that there must be constraints on a generalized rule of NEG PLACEMENT, since we don't want it to move NEG into a sentence embedded in the sentence now being cycled. He suggests that a constraint against moving morphological material into a lower sentence mentioned first in Aspects and reaffirmed in Chomsky (1970) seems suitable. However, Culicover remarks that there may be reason to think that the items copied by the TAG FORMATION rule are not directly dominated by the highest S node. (He may have in mind the fact that it is difficult to account for the intonation contours and the possible pause in tags unless the tags form a constituent, most likely dominated by S. Recall our arguments in Section I.) If the tag is a constituent dominated by S, then why is NEG PLACEMENT into tags not blocked by Chomsky's constraint? Culicover suggests that the constraint may be blocked if the S node in question is newly created by rule.[13]

How does Culicover account for inversion in the tag? The full version of his TAG FORMATION rule copies the subject NP and Aux and moves the WH to a position to the right of DS (65a) on the next page.

(65a)



(65b)



Under Culicover's analysis the interaction of TAG FORMATION, NEG PLACEMENT and CONTRACTION plus the presence or absence of NEG in DS provide a variety of questions whose semantic interpretations vary radically. It should be clear how the syntax of the sentences of (67) is accounted for by Culicover given the set of DS (66) and the following ordered rules:

i) TAG FORMATION (optional)
ii) NEG PLACEMENT (obligatory)
iii) CONTRACTION (optional)
iv) INVERSION (obligatory)

(66) $_S$[WH (NEG) Plush PAST leave]$_S$

(67)a Did Plush leave?
b Did Plush not leave?
c Didn't Plush leave?
d Plush left, didn't he?
e Plush didn't leave, did he?
f Plush left, did he?
g Plush left, did he not?
et cetera

Let us turn now to a review of Culicover's discussion of the semantic interpretation of questions such as (67). It is obvious from the discussion thus far that semantic interpretation must be read off the pair DS/SS: semantic interpretation for questions is not determined until SS, although all the elements necessary for determining interpretation are either present in DS or added by transformational rule. Culicover says there are two principal factors in the determination of semantic interpretation of questions, scope of negation and intonation contour. (The scope of the question will be constant here, scope of Q = S, since we are discussing only yes-no and tag questions, not WH questions.) Culicover follows Jackendoff (1969) in discussing the semantic interpretation of sentences with negation. In general, if NEG occurs

in the SS Aux, then scope of NEG may be S if no quantifier appears in the SS subject NP or it may be VP; if NEG occurs outside the SS Aux, then scope of NEG is the constituent to which NEG is attached. Culicover does not mention the assignment of intonation contour. It is presumably freely assigned by one or more general rules.

Culicover's semantic interpretation rules make use of the following four intonation contours:

Intonation 1--You don't like↑ me, ↑do you↑ ?

Intonation 2--You don't like me↓ , do you↓ ?

Intonation 3--You don't like me↓ , do you↑ ?

Intonation 4--You like me↓ , ↑ don't you↓ ?

Intonations 1 and 2 are called "smooth" and 3 and 4 "broken". Intonation contours on yes-no questions are called "singulary". In both yes-no and tag questions, the intonation contour on the inverted part of the sentence may be "rising" or "level".

The semantic interpretation of questions involves the determination of three possible properties of these sentences: the proposition being questioned, the proposition that has expectation (or bias) associated with it, and the proposition being asserted. As an example of how these properties are pertinent to tag questions, consider (67d) with intonation 3 ("broken" and "rising").

(67d) Plush left, didn't he?

This sentence has a positive bias associated with the proposition Plush left. Also the sentence questions the proposition Plush left. Nothing is asserted by (67d) with intonation 3, according to Culicover. But now consider this sentence with intonation 4 ("broken" and "level"). The bias is once again associated with Plush left, and that is the questioned proposition as well. Here there is also an asserted proposition, Plush left. With this intonation

(67d) does not elicit the truth value of the proposition, but elicits agreement by the hearer that the proposition is true. (Imagine a heretic on the rack being asked to forswear his wild claims: "The earth is flat, isn't it?") This particular kind of question Culicover denotes by "question*".

The various interpretations of yes-no and tag questions are summarized by Culicover in the following chart. An asterisk indicates that that combination of NEG scope and intonation is ungrammatical. The proposition, denoted by "P", is established after tag question formation (i.e., at SS?) and is the proposition represented by the entire sentence less the tag.[14]

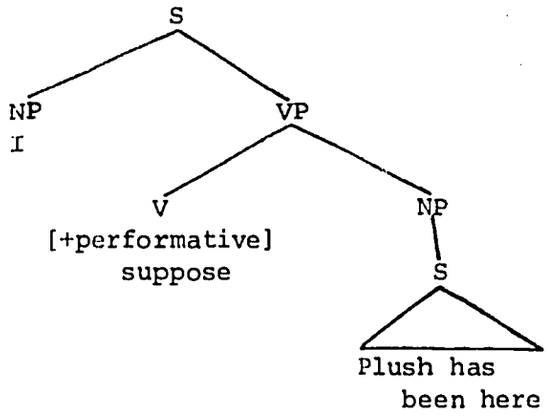
		level	rising
NEG scope = S	broken	expectation P question* P assertion P	expectation P question P
	singulary	expectation P question* P assertion P	expectation P question P
	smooth	expectation P question* P assertion P	*
NEG scope ≠ S (or NEG not present)	broken	*	*
	singulary	question P	question P
	smooth	expectation not P	expectation not P

This chart is readily converted into a series of if-then rules for determining semantic interpretation. The ad hoc nature of the rules is Culicover's point, namely that generalizations about the syntax are not mirrored by semantic generalizations.

Let us turn now to a fuller criticism of the analyses by Lakoff and Culicover. As we have seen, Lakoff's analysis of (68) assumes an underlying representation containing at least the structure of (69), on the next page.

(68) I suppose Plush has been here, hasn't he?

(69)



It is difficult to know exactly what is accounted for because of the incomplete nature of Lakoff's analysis, which is meant to be suggestive and not exhaustive. Presumably structure (69) contains sufficient semantic material to distinguish it from the structure underlying sentence (70), which is not a question.

(70) ˈI suppose Plush has been here. (falling intonation)

The specification of the class of verbs that can take embedded tag questions is a problem in Lakoff's analysis. She says that tag formation may occur only under a verb with the meaning of suppose, which may be accurate for (71a), but does not account for the grammaticality of (71b) in an obvious way.[15]

(71)a I {imagine / guess / take it / reckon / bet} Plush is coming, isn't he?

(71)b I {hope / 'm sure} Plush is coming, isn't he?

An additional problem exists with the higher verbs permitted in structure (69). It is not clear how one is justified in calling them performative verbs, in fact.[16] A verb is a performative if the action named by the verb is carried out when the sentence containing it is uttered by the speaker. Thus, for example, (72) may be an order and (73) an admission.

(72) I order you to get Plush out of here.

(73) I admit that Keyso bit him.

But in (74) and (75) the speaker does not carry out the action of the verb by uttering the sentence. He merely reports on his internal state.

(74) I want Plush to leave town.

(75) My ankle itches.

Nor can it be said that a speaker of (76) is carrying out the action of the verb merely by uttering the sentence.

(76) I suppose Plush eats pretty well, doesn't he?

The speaker of (76) may suppose various things about Plush's eating habits, but not by uttering (76). In this respect (76) is more similar to (74) and (75) than to (72) and (73).

There are several heretofor unmentioned peculiarities that are not particularly compatible with the performative analysis of complement tags. For instance, it is not true that all complement tags are non-embeddable, since (77) appears to be totally grammatical.

(77) I tell you I. {think / believe} Plush is sick, isn't he?

Certain higher verbs in complement tags appear to permit NEG in underlying structure, since (78a-b) are not paraphrases.[17]

(78)a I'm not {certain / sure} Plush is coming, is he?

(78)b I'm {certain / sure} Plush isn't coming, is he?

And some verbs even take past tense with no loss of grammaticality. Notice the difference in sense between (79a) and (79b).

(79)a I {understood / thought / heard} Plush was locked up, wasn't he?

(79)b I {understand / think / hear} Plush was locked up, wasn't he?

No matter how one feels about the performative analysis of declaratives, imperatives and interrogatives in general,[18] it is difficult to believe the claim that the higher verbs possible in structure (69) are performatives. Nevertheless, the performative would explain several characteristics of tag questions. Choice of matrix subject and the supposed restrictions on embedding into higher structures, tense, and negation follow directly from such an analysis. In addition, Lakoff would be able to account for deletion of the higher subject and verb by the application of a rule that has already been argued to exist in the grammar. We have seen, however, that the evidence does not unquestionably support the performative analysis of complement tags.[19] While I do not have an answer to the problems raised here, it is clear that Lakoff's analysis cannot stand.

Intonation contours and how they are assigned are not mentioned in Lakoff's analysis. It will be recalled from the discussion of Culicover's analysis that intonation contour is not independent of semantic interpretation. The situation is more complex than Culicover suggests, since for complement tags it is true not only that different intonation patterns have varying interpretations for any given higher verb, but also that different higher verbs have various degrees of grammaticality under constant intonation. With respect to the latter claim, consider the sentences of (80) read with level or falling intonation on the tag.

(80) I { guess / ?take it / *'m sure / *trust / *hope } it's time to feed Plush, isn't it?

For a complete list of verbs and intonations with my grammaticality judgments, see the appendix. I have no way of handling these data in a revealing way at this time.

Another defect in Lakoff's analysis, noted by Jackendoff (1971), is that it fails to account for tag questions with second person subjects in the higher sentence, such as (81).

(81) You don't suppose Plush is sick, is he?

The only other verbs I can find that are at all acceptable in (81) are reckon, imagine, and ?think. Notice that all versions of (81) are ungrammatical without rising intonation on the tag. Once again, no analysis of this sentence will be offered here, Jackendoff's observation being repeated merely as an indication that much remains to be learned about tag questions. Notice also that, although unmentioned in any discussion of tag questions with which I am familiar, (82) is grammatical.

(82) It { appears / seems / strikes me } Plush isn't very happy, is he?

Such sentences will be taken up briefly below.

In a general attack against the existence of NEG TRANSPORTATION as a syntactic rule, Jackendoff (1971) points out two further defects in Lakoff's analysis of complement tags. First, he observes that in his dialect a number of verbs can be substituted for suppose as the matrix verb, among them guess, imagine, and suspect. But none of these verbs undergo NEG TRANSPORTATION in other than tag question contexts, since (83) and (84) are not paraphrases.

(83) Rick didn't { suppose / guess / imagine / suspect } that they had won.

(84) Rick { supposed / guessed / imagined / suspected } that they hadn't won.

Jackendoff argues then that if there is a NEG TRANSPORTATION rule at work in complement tags it is a different rule than that relating (85) and (86) on the next page, which are the basis for the original argument for the rule.

(85) John thinks that Plush didn't go.

(86) John doesn't think that Plush went.

It is a different rule because it applies to a different class of verbs and only in the context of complement tags. Whether Jackendoff is correct in saying that two different rules are at work here, or the problem is really a question of conditions on the application of a single rule, this argument may make the transformational analysis of complement tags suspect, but no more so than any other analysis with which I am familiar. In particular, Jackendoff's proposed semantic rule relating complement tags (see footnote 19) suffers from exactly the same defect as syntactic NEG TRANSPORTATION. This is so because (83) and (84) must not be related by the same rule, even though the "same" verbs are there.

Jackendoff's final criticism of Lakoff's analysis involves the verbs think and believe. If these verbs are substituted for suppose in (87), grammaticality is judged as follows by Jackendoff (and myself).

(87) I $\left\{\begin{matrix}\text{suppose}\\ *\text{think}\\ ?*\text{believe}\end{matrix}\right\}$ Plush won't win, will he?

If Lakoff's analysis is correct, an optional rule NEG TRANSPORTATION must apply to derive (88) from (87).

(88) I don't $\left\{\begin{matrix}\text{suppose}\\ \text{think}\\ \text{believe}\end{matrix}\right\}$ Plush will win, will he?

Yet (88) is considerably more acceptable for Jackendoff (and for me) than (87). If NEG TRANSPORTATION is obligatory with think and believe only in complement tags, Jackendoff argues, then we have more evidence for two separate rules and a less general treatment.

37 Culicover's analysis, as we have seen, differs markedly from that of Lakoff. Not only does he attempt to account for more types of sentences, but also he raises the question of level of adequacy of linguistic solution. If

Culicover is right that his analysis, in the lexicalist framework, makes significant linguistic generalizations with ease that are very difficult or impossible to capture otherwise, then this is a strong argument in his favor.

There are defects in Culicover's analysis, however. Most obvious is his failure to discuss the derivation of embedded tags and their relation, either syntactic or semantic, with nonembedded tags. Another problem that Culicover does not address himself to is the fact that the only NPs allowed within the tag are pro-forms. His tag formation rule merely copies the subject NP of the main clause, which of course results in ungrammaticality if nothing is done to correct the matter.

(89) *Plush left, didn't Plush?

Accounting for the ungrammaticality of (89) is not particularly easy within the lexicalist framework, and it is less easy to account for the grammaticality of (that is, generate) (90) in a motivated way.

(90) Plush left, didn't he?

Jackendoff (1969) has argued that there is no syntactic rule PRONOMINALIZATION in English: facts about pronominalization are semantic facts. As we mentioned earlier, Jackendoff's semantic interpretation rules operating off SS determine correference or the lack of it. Thus the two Plushes in (91) are marked as noncorreferential, and Plush and his in (92) are marked as possibly correferential.

(91) Plush dropped a rock on Plush's foot.

(92) Plush dropped a rock on his foot.

Accounting for the ungrammaticality of (89) within Jackendoff's framework would require special rules of semantic interpretation. Either a rule would have to state that (89) is deviant even though the two occurrences of Plush are marked as noncorreferential by general rule, or a different rule would have to mark the two occurrences of Plush as correferential. In the

latter case, the sentence would still have to be thrown out, since in tags the pro-form is obligatory.

Jackendoff's general rules could presumably account for the grammatical reading of (90) if the DS/SS of this sentence were available as input to the interpretive rules. But for the SS generalizations to be correct, he in (90) must have been inserted from the lexicon at DS, which is impossible without increasing the possible output from the PSR to include tags, with all the resulting difficulties discussed in Section I. But even so, there would still remain the problem of impossible noncorreferentiality for Plush and he in (90).

We might modify Culicover's TAG FORMATION so that it copies not the subject NP into the tag, but the pronominal form of this NP, but we do this for the same high price here as in the discussion of declarative tags earlier. Jackendoff can no longer generalize that all pro-forms are inserted from the lexicon at DS. And of course, even doing this does not really get Jackendoff out of the impossible noncorreferential reading. Suppose that a general condition on transformations marked all copied NPs as correferential. This general condition would follow directly from the generative semantics framework as a special case of transformations not changing meaning, but what is its status within the lexicalist framework? Since correference is ordinarily not determined until SS this general condition appears as a complete accident. That is, one cannot argue that the determination of correference is a semantic process and at the same time argue that a general condition on transformations marks certain NPs as correferential. The only need for this general condition is to obviate the necessity of an ad hoc semantic statement to the effect that the tag pro-form must be correferential with the main clause subject. So tag questions add support to the claim that PRONOMINALIZATION is not a semantic rule and they bring into question Jackendoff's handling of correferentiality.

There is another problem for Culicover's analysis, which he again does not discuss. That is the well known fact that certain sentential adverbs cannot occur in yes-no and WH questions, but do occur in tag questions. Consider sentences (93) and (94).

(93) *Isn't Plush {certainly / fortunately / surely} well groomed?

(94) Plush {certainly / fortunately / surely} is well groomed, isn't he?

Since for Culicover a single source underlies both (93) and (94), he will be forced to block the ungrammatical (93) by some device after TAG FORMATION. That is, there is nothing syntactically wrong with the DS source of (93) or (94) could not be generated. What this means is that grammaticality depends on the operation of an optional rule, TAG FORMATION. It is clear that an ad hoc condition on this rule, making it obligatory just in case there is a sentential adverb present, seriously weakens the analysis. Nor is it at all clear to me that the most highly valued grammar of English will contain an interpretation rule that states cooccurrence restrictions on these adverbials at SS.

Finally, there is the whole question of multiple negation. I find sentences with sarcastic overtones like (95) perfectly grammatical, although Culicover finds them ungrammatical as his analysis predicts.

(95) (Oh, so) Plush won't drink his milk, won't he?

Now there is simply no way of accounting for my dialect using anything like the rules Culicover suggests. Although I certainly do not with to argue that two grammars may not differ substantially, still it seems likely that minor differences in rules or rule ordering might account for these differences. Thus, for my dialect Culicover's rules are not as general as for his, and a different process must be involved in generating (96) versus (95).

(96) (Oh, so) Plush is eating, is he?

This calls into further question the adequacy of Culicover's analysis.

It will now be suggested that Culicover's analysis of nonembedded tag questions can be extended to handle embedded tag questions only with difficulty, it at all. Whether sentences (97) and (98) are related by syntactic rule, by semantic rule, or by a theory of performance, the problem is to motivate a DS for (97).

(97) I expect Plush left, didn't he?

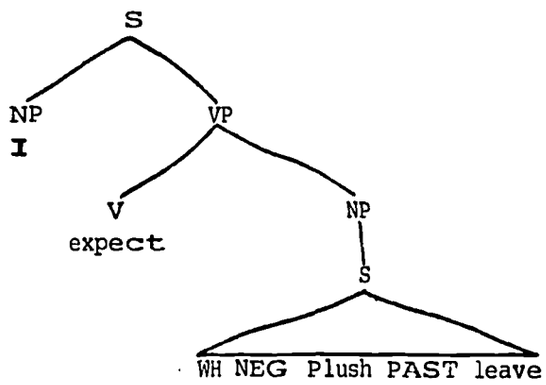
(98) Plush left, didn't he?

We might suggest that the number of verbs that can take embedded questions in SS, such as those of (99),

(99) Rick didn't { understand / know / realize / explain } why Keyso bit Plush.

be increased to include those verbs that take embedded tags. Then the DS of (97) might be something like (100).

(100)



One might object that (100) cannot be the correct DS for (97) since there is the possibility that a WH question rather than a tag question might occur embedded under expect in SS, which would incorrectly predict the grammaticality of (101), for example.

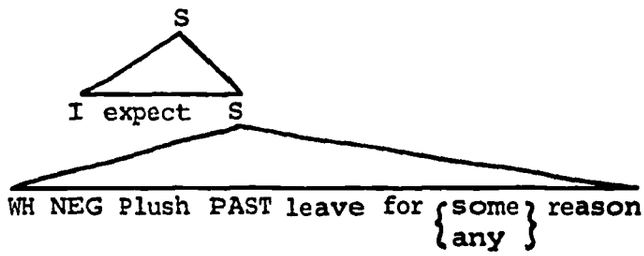
(101) *I expect why Plush didn't leave.

We could counter this objection, however, by ordering TAG FORMATION before

the rule that moves WH into the sentence and attaches it to one or more indefinite NPs, thus removing it from initial position to a position in the tag. In this way no WH phrases would be fronted by a later rule, and at the same time the motivation for inversion in the tag would be preserved (i.e., the presence of WH there). Sentence (102), not (101), would result from DS (103).

(102) I expect Plush {didn't leave for any reason, did he? / left for some reason, didn't he?

(103)



There is a difficulty with the counterargument, since TAG FORMATION is presumably an optional rule. We could make it obligatory in just those cases where ungrammatical sentences such as (101) might result otherwise, certainly an ad hoc and unwarranted condition on the rule. Or we could leave TAG FORMATION as an optional rule and argue that verbs like expect cannot take embedded WH questions in SS for some semantic reason. This latter position might have some substance if there were considerably more justification for including any WH embedding under expect in DS, but as it stands this position is clearly ad hoc and may amount to playing games with cooccurrence restrictions.

There is a further reason why DS (100) cannot be correct. Observe that even if the embedded clause turns out to be a yes-no question rather than a WH question, as in the above objection, an ungrammatical sentence such as (104) may result.

(104) *I expect whether Plush didn't leave.

This is so because TAG FORMATION is still optional: if it does not apply then

the embedded clause would continue in derivation just as the embedded clause in other indirect questions, for example (105).

(105) I want you to tell me whether Plush didn't leave.

Sentences (101) and (104) are clearly ungrammatical for the same reason. Expect simply does not take embedded WH clauses. Under the lexicalist hypothesis the place to state this fact is at the level of DS, thus doing away with (100) as a possible source for sentence (97).

Further evidence against DS (100) involves the distribution of NEG in SS. In a tag question embedded under expect, either the embedded clause or the tag must contain negation unless expect is negated, in which case either the embedded clause must be negated or neither the embedded clause nor the tag must be negated. Consider the following sentences.

(106)a I expect { Plush didn't leave, did he?
b { Plush left, didn't he?
c { *Plush left, did he?

(107)a I don't expect { Plush left, did he?
b { *Plush left, didn't he?
c { Plush didn't leave, did he?

(Sentence (107c) may be difficult for some readers to get. Heavy stress on didn't in the embedded clause may help. Compare: "What do you mean Plush couldn't leave?--He couldn't not leave.") Other ungrammatical combinations of NEG in (106) and (107) might be explained by Culicover's judicious ordering of TAG FORMATION before NEG PLACEMENT, but there appears to be no such acceptable way of ruling out the ungrammatical (106c) and (107b).

Possibly the ungrammaticality of (106c) can be accounted for in semantic interpretation. Recall from the chart given in earlier discussion of Culicover's analysis (page 29) that a tag question with no negation and broken intonation is ungrammatical, while with smooth intonation there is an expectation not P.[20] Since the tag in (106c) is embedded under I expect, one could conceivably argue that there is a contradictory reading. The only verb

of those taking embedded tags that seems to be acceptable in the frame of (106c) is doubt, and this is in perfect accord with the interpretation of the tag itself as given by Culicover.

Sentence (107b) is less easily explained, however. There is no provision in Culicover's chart for tag questions with NEG present semantically in the clause of the proposition and NEG also in the tag, though as mentioned earlier, such a possibility exists in my dialect at least for nonembedded tags. It is clear that another ad hoc semantic statement could mark this combination ungrammatical even when embedded, although the increasing number of such ad hoc statements is surely suspicious. But even if some reasonable semantic interpretation could be determined for two negatives, as in my dialect, the embedded form such as (107b) is still deviant syntactically. Thus even ignoring other difficulties with DS (100), the most general syntax would generate (107b) from the same source as (107c). Even in dialects that accept nonembedded tags with two negatives (107b) is ungrammatical syntactically. The most reasonable response would be that DS (100) does not exist as the source for (107b).

We are left with the conclusion that DS (100) does not exist. Since I cannot think of any more likely candidate for the structure underlying sentence (97) repeated here,

(97) I expect Plush left, didn't he?

I will suggest that Culicover's lexicalist analysis of tag questions cannot be extended to embedded tags in any straightforward way. Still, tag questions under verbs like expect do exist, and the lexicalist analysis must account for them in some way. We will assume then that there is a motivated DS for (97) and that a rule of TAG FORMATION such as Culicover's applies in the derivation of sentence (97) and others. But notice that as formulated by Culicover TAG FORMATION is an ungoverned rule, while we have been talking about verbs that

"take embedded tag questions". Of all the forms that take embedded tags in my dialect, nearly half take embedded yes-no and WH questions as well. Recall that the generality of Culicover's arguments hinges on the common source of both yes-no and tag questions. If this generality is to be preserved while extending the analysis to handle embedded tags and embedded yes-no questions, then some principled provision will have to be found for those verbs that take embedded tags but do not take embedded yes-no questions, as in (108),

(108)a I gather you didn't feed Plush, did you?
b *John gathered whether you didn't feed Plush.

and for those verbs that take embedded yes-no questions but do not take complement tags, as in (109).

(109)a I ask you whether Plush isn't lazy.
b *I ask you Plush is lazy, isn't he?

We must return to conclude then that the lexicalist analysis of complement tags cannot be a straightforward extension of Culicover's analysis of non-embedded tag questions.

Let us now turn our attention to an attempt to specify more accurately under what conditions a tag question will have a negative tag. It has normally been said that the tag is affirmative if the main clause is negative and vice versa. More specifically, sentences with negative pre-verbs have affirmative tags, and sentences without negative pre-verbs have negative tags.[21] Compare (110a-c) with (111a-c).

(110)a Plush has no collar, does he?
b Plush rarely leaves the yard, does he?
c Plush doesn't like rain, does he?

(111)a Plush left not half an hour ago, didn't he?
b Keyso lives not far away, doesn't he?
c Plush likes rain, doesn't he?

Sentence (110a) shows the result of Klima's (1964) rule NEG INCORPORATION INTO INDEFINITES, which is optional when the indefinite is in object position and which follows TAG FORMATION. The only problem here for Culicover, since he

derives (110c) and (111c) from a common source, is to prevent (112a-b) from the same source as (111a-b).

(112)a *Plush didn't leave not half an hour ago, did he?
b *Keyso doesn't live not far away, does he?

Both (113) and (114) have affirmative tags because in Klima's analysis they both have NEG before the verb when TAG FORMATION applies.

(113) Not many moths escape Plush, do they?

(114) Plush doesn't let many moths escape, does he?

The final position of NEG before many in (113) is the result of Klima's NEG INCORPORATION INTO QUANTIFIERS. For Culicover, of course, (113) and (114) derive from the same sources as (115) and (116), respectively.

(115) Many moths escape Plush, don't they?

(116) Plush lets many moths escape, doesn't he?

Next, consider sentences such as (117) and (118).

(117) Scarcely anybody hates cats, do they?[22]

(118) Hardly anything bothers Plush, does it?

The negative pre-verbal adverbs hardly and scarcely presumably account for the fact that the tags in (118) and (117) are affirmative, and of course must then precede the indefinite subjects anything and anybody. If (117) and (118) are passivized, the expected tags occur, as the following sentences show.

(119) Cats are scarcely hated by anybody, are they?

(120) Plush is hardly bothered by anything, is he?

But now notice that if the negative pre-verbs occur in the passive by-phrase, we get the negative and not the affirmative tag.

(121) Cats are hated by scarcely anybody, aren't they?

(122) Plush is bothered by hardly anything, isn't he?

Actually, the problem is more general.

(123)a Most cats have few problems, don't they?
b Most cats don't have many problems, do they?

(124)a That tree has few canine admirers, doesn't it?
b Few dogs prefer that tree, do they?

(125)a Plush is liked by almost no one, isn't he?
b Almost no one likes Plush, do they?

It is apparent from the above examples that TAG FORMATION must apply after Klima's rule that optionally incorporates NEG into certain quantifiers and indefinites, which of course follows PASSIVE. (We assume here, as did Klima,[23] that few results from fusing of NEG+many.) Then the relevant part of TAG FORMATION must have the effect of (126).

(126) If NEG occurs within or before the Aux when TAG FORMATION applies, then the tag is affirmative. Otherwise, the tag is negative.

In effect, negative sentences are optionally made affirmative as seen by TAG FORMATION. Yet (123a-b) remain synonymous.

We hasten to point out that (126) is not a correct statement of tag polarity. Recall that in (100a), repeated here, the tag must be affirmative.

(100a) Plush has no collar, does he?

Since it has been suggested that TAG FORMATION follow NEG INCORPORATION INTO INDEFINITES, (126) would predict that (100a) is ungrammatical as opposed to the supposedly grammatical (127).

(127) *Plush has no collar, doesn't he?

But the facts are just the opposite. We must therefore restate (126) as (128).

(128) If when TAG FORMATION applies NEG occurs within the Aux, before the Aux, or after the Aux under certain conditions, then the tag is affirmative. Otherwise, the tag is negative.

The conditions referred to in (128) must include NEG+many (= few) and NEG+much (= little), as well as the passive cases above. The conditions do not include the NEG of adverbials occurring within the Pred Phrase, of course.

(129) Plush left not half an hour ago, { didn't he? / *did he? (non-sarcastic) }

Refinements of (128) undoubtedly remain to be formulated. For example, the

different tag possibilities in (130) and (131) are not predicted by (128).

(130)a No less than six people saw Plush, didn't they?
b Plush was seen by no less than six people, wasn't he?

(131)a No more than six people saw Plush, did they?
b Plush was seen by no more than six people, was he?

Tag polarity is clearly not the result of the simple process that has most often been mentioned. Even when Klima's account of NEG originating either as sentence negation or constituent negation is taken into consideration, certain irregularities remain. I have suggested that these irregularities can be handled, for the most part and unenlighteningly to be sure, by ordering TAG FORMATION later than has been thought and adding conditions to the rule. Other formulations are possible, such as one making use of global derivational constraints. Still other problems remain and no attempt to handle them will be offered here.

Note that the discussion of tag polarity in the last few pages can be seen as further evidence against the position taken by Culicover. Consider sentences (125a-b), repeated here.

(125)a Plush is liked by almost no one, isn't he?
b Almost no one likes Plush, do they?

If Culicover follows Klima's analysis of no one in these two sentences, as seems reasonable, then he will have no source for the negative tag in (125a). This is so because the one NEG present at the time his TAG FORMATION applies will be "used up" in accounting for no one. If no one is treated as a lexical item in order to account for the NEG in the tag of this sentence, then where is this NEG in (125b) from the same source as (125a)?

Finally, we may now return to the question posed at the beginning of this paper. We can now answer with some assurance that tag question formation is not the result of the same rule that produces declarative tags and intonation tags. The possibility that there might be only one rule TAG FORMATION at

work in these three kinds of sentences was enhanced by Culicover's account of tag questions. But various doubts have been raised concerning his analysis, and these doubts in turn lead us to the requirement that English have at least two rules TAG FORMATION, one that accounts (perhaps inadequately) for both declarative and intonation tags, and another that accounts (in not totally understood ways) for tag questions.

Of the three kinds of tag sentences discussed in this paper, only declarative tags remain without some unanswered questions. Their analysis was straightforward and without difficulty. The second kind of tag, intonation tags, was accounted for by generalizing the rules for declarative tags, though not without hand waving. Nearly nothing of substance can be said about the third type of tag, tag questions. This paper's contribution to an adequate understanding of tag questions has been to point out inadequacies in certain former analyses and to correct them if possible, as well as to argue that a second rule TAG FORMATION is necessary, if indeed these sentences are not the result of some rule of selective deletion of elements fully present in underlying structure (i.e., the analysis rejected in Section I).[24]

As a final suggestion, we return to certain tag questions mentioned earlier in passing, such as (132a-c).

(132) a, b, c It { appears / seems / strikes me } Plush isn't very happy, is he?

The existence of such tags has never been mentioned before, as far as I know. Consider first (132c). Unless TAG FORMATION applied blindly no matter what the higher verb, an analysis that probably cannot be defended, there would be absolutely no reason to expect it to apply to a sentence beginning *It strikes me...*. But notice that the higher clause in (132c) is not distant semantically from Lakoff's verbs of *supposing*, though it does differ syntactically. Given a view of language that draws a clear distinction between syntax and

semantics, (132c) is an anomaly. Given a view of language in which syntax is not predominantly free of semantic properties, (132c) is perhaps to be expected.[25]

Sentences (132a-b) can easily be fitted into this discussion. Note first that (133a) is ungrammatical, although (133b) is fine.

(133)a It seems to {*John / me} Plush isn't very happy, is he?
b

Any analysis that handles the embedded tags discussed earlier must handle (133a-b) in the same way or lose a generalization. That is, (133a) is ungrammatical for the same reason as (134).

(134) *John expects Plush isn't very happy, is he?

The data seem to fall together when the semantic facts are considered. And, once again, the relationship of seem and appear to the other verbs taking embedded tag questions is not remote.[26]

Consider, finally, tag questions such as (135), which again have received no mention in the literature so far as I know.

(135)a I {see / hear / sense / ?perceive} Plush is putting on weight, isn't he?
b
c
d

Given the semantic similarity between strike and perceive,[27] we should have no surprise at seeing that tag questions with perceive as a higher verb are grammatical or nearly so. As before, there is no particular reason to expect this under a lexicalist analysis. And from perceive it is but a small step to the other verbs in (135).

We take this discussion, then, as supporting to some extent a transformational analysis of tag questions (not specifically Lakoff's analysis, of course). The data presented here, though not overpowering, tend to support an analysis that reduces the autonomy of syntax. We do not discount Culicover's attempt to explain rather than describe the data on occurrence of NEG in tag

questions, but as we have seen, his analysis does not stand up to extended data. There are always other possible explanations of the facts he discusses.

Appendix

The following is a list of verbs that take complement tags, based on my own judgments. Intonation of the tag is indicated as follows:

 rising intonation  falling intonation

"Copy" refers to the type of tag discussed in Section III. "Huh" indicates the carrier of intonation sometimes spelled "hm". This type of tag is not discussed here. "Right" indicates the tag right, also not discussed here. This latter tag is always ungrammatical with falling intonation. An X indicates that that particular combination of higher verb and tag is grammatical.

	right	huh	huh	copy	copy
think	X		X	X	X
believe	X		X	X	X
assume	X	X	X	X	X?
imagine	X	X	X	X	X
suppose	X	X	X	X	X
reckon	X	X	X	X	X
guess	X	X	X	X	X
take it	X	X	X	X	X
certain				X	
sure				X	
bet	X	X	X	X	X
expect	X	X	X	X	X
trust	X			X	X
afraid			X	X	X
?fear			X	X	X
hope				X	
doubt (if)				X	X
not sure			X	X	X
?not certain			X?	X	X
suspect	X	X	X	X	X
gather	X	X	X	X	X
strike me			X		X
appear			X		X
seem (to me)			X		X
see	X	X	X		X
hear	X	X	X		X
sense	X	X	X		X
?perceive	X		X		X
understand	X	X	X	X	X
get (have) the feeling (impression)	X		X	X	X
?remember	X		X	X	X

Notes

1. Here and elsewhere in this paper I ignore the possible presence of adverbials in stating TAG FORMATION.

2. This, in essence, is the analysis presented by Emonds (1970), who appeals to a later, independently motivated rule of VP DELETION in the derivation of tag questions. The following criticism of using ELLIPSIS to remove the unwanted material must apply to VP DELETION as well. Emonds' VP DELETION and my ELLIPSIS may of course be the same rule, but need not be.

3. It will become apparent in Section II that, to some extent, the tag behaves syntactically like an S as well. In particular, INVERSION would not apply to intonation tags unless the tag were a "main clause".

4. Notice that rule (23) does not specify whether the copy should be adjoined to the right or the left of the given S. It seems reasonable that such arbitrariness should not be permitted, for otherwise each declarative tag sentence would be ambiguous (given a very strict interpretation of this notion). On the other hand, evidence for choosing between right and left adjunction will have to be very indirect. For example, some generalization similar to that proposed by Ross (1967) for underlying constituent order and the direction of gapping might be found here.

5. This statement makes sense only in the interpretive semantics framework being discussed. The generalizations about correference, etc. must be captured regardless of one's theoretical view, and others would do it differently.

6. This statement is not quite true. Observe that (i) is fully as grammatical as those sentences discussed in the text.

(i) He bit me, Plushbottom did.

That is, backwards pronominalization may occur in these declarative tags. It cannot occur, however, in the intonation tags and tag questions to be discussed later. Whether this means that the declarative tags have a different structure at the time PRONOMINALIZATION applies, I do not know. So far as I can determine, there is no argument that declarative tags have different structures at SS than intonation tags and tag questions.

7. Even if Jackendoff assumes the alternative analysis discussed on pages 8 and 9, with a condition of identity on the second clause down to "corresponding pro-form" (including being marked as correferential in DS), the fact that the pro-form is correferential is still an accident. Correferentiality follows directly from a copying analysis, since if an element refers to some individual, then its copy must refer to that same individual (at least this is true for generative semantics). But in any case, some instances of correference are not determined at SS and Jackendoff's generalization is lost.

8. It is a question whether reduced stress may explain NEG contraction, since sentences such as

(ii) John says Plush's bedraggled, but he isn't.
(iii) It's true though: Plush doesn't have the best fur.

show NEG contraction even though the emphasis occurs semantically on NEG (and in the uncontracted versions of (ii) and (iii), phonetically as well).

9. See, for example, Klima (1964) for a handling of the polarity question in what I am calling the "usual way".

10. That is, normal in the sense of fn. 9.

11. I do not wish to imply that Lakoff would attempt such an analysis, since she has specifically rejected all analyses with a WH formative (personal communication). The suggestion to insert WH is made merely in harmony with the analyses of sections I and II.

12. Note that these questions about the position of NEG in the tag are successfully answered in our handling of those tags discussed in sections I and II. See Moravcsik (1971) for yet a different approach that also satisfactorily answers the questions Culicover raises here.

13. Exactly how and why an S node is created by rule is not dealt with by Culicover. In fact, he does not seem to feel very strongly one way or the other about whether the elements of the tag are attached directly to the highest S node or form an S constituent themselves.

14. Although it has been well established that certain contributions to the semantic interpretation of sentences (scope of quantifiers, of Q, etc.) must be made at the level of SS within a lexicalist analysis, Culicover's claim that the proposition of a tag question or yes-no question must be determined at that level (technically, "after tag formation") is left totally unsubstantiated. It raises several questions about the role of DS and SS for other kinds of sentences, and thus about the nature of general theory.

15. There appears to be tremendous variation among different speakers in which verbs are grammatical in tag questions. Here and elsewhere I use data based on my own intuitions, unless otherwise noted. In particular, Lakoff finds many of my sentences to be ungrammatical (personal communication).

16. See Ross (1969a) for a discussion of performative verbs.

17. Notice that complement tag pairs such as (78a-b) destroy the notion that reversal of polarity in the tag occurs in what I have been calling the "usual way".

18. There is less than total agreement about such an analysis. See for example Fraser (1969) and Anderson (1968).

19. We may point out that a recent proposal by Jackendoff (1970) leads to a notational variant of one problem mentioned here. His proposal is that (iv) and (v) be related by semantic, not syntactic, rule.

(iv) Keyso thinks Plush isn't handsome.
(v) Keyso doesn't think Plush is handsome.

Sentence (v) is directly generated and has a non-committal sense in which it is denied that Keyso holds thought X. An optional semantic rule gives (v) a committal reading identical to the reading of (iv). The synonymy of (iv) and

(v) is thus handled semantically. Now consider embedded tags such as (vi).

(vi) I don't expect Plush is handsome, is he?

When Jackendoff's proposed semantic rule operates, we get the proper reading, equivalent to that of (vii).

(vii) I expect Plush isn't handsome, is he?

But what if the optional semantic rule does not operate? Without further mechanisms we get a non-committal reading which does not exist for tag questions. Accounting for why this reading is blocked is equivalent to accounting for why NEG cannot occur above expect in underlying structure in the transformationalist analysis of (vi). I am unable to determine why such a non-committal reading does not exist for this sentence.

20. Actually, one might question Culicover's analysis on these points. I think the facts are that with no negation and smooth level intonation, the expectation is not P, but with smooth rising intonation the expectation is P and the question is P. With this intonation I still find (106c) ungrammatical, as noted in Section II. In any case, in the text I am arguing solely on the basis of what appear to be Culicover's intuitions.

21. Klima (1964), p. 263, and others, for example Arbini (1969), after him.

22. The fact that they is the pro-form for anybody will not be of concern here. I do not consider this terribly important.

23. Klima, op. cit., p. 276.

24. A deletion analysis for tag questions has recently been suggested by Moravcsik (1971). Exactly how such a deletion analysis would account for sentences like (124a-b) or (125a-b) is not clear. In addition there is the general problem mentioned earlier of guaranteeing that optional rules such as PASSIVE and SUBJECT RAISING apply to both source sentences, or to neither, so as to avoid the ungrammaticalities of (viiib) and (ixb).

(viii)a The cats were seen by Keyso, { weren't they?
b { *didn't he?

(ix)a Keyso is likely to stay, isn't he?
b *It's likely that Keyso will stay, isn't he?

Note that ordering the deletion rule late so as to block its application under non-identity solves nothing, since the rule must apply if a grammatical sentence is to result. Also, any deletion analysis must explain the occurrence in underlying structure of the full second clause in (x).

(x) Plush didn't see a soul, did he?

The presumed source for the tag in (x) is ungrammatical when not negated. Thus the source for (x), presumably something along the lines of (xi), should not exist.

(xi) *Plush didn't see a soul, did he see a soul?

Actually, Moravcsik's source would be more like (xii), but the same problem exists here.

(xii) *Did Plush see a soul or not; I suggest he did.

25. I have no explanation of the fact that (xiii) is totally ungrammatical.

(xiii) *Plush strikes me as not being very happy, is he?

26. Postal (1970), for example, has suggested that seem may bear the same relation to think as see bears to look at. Seem is thus taken to be a so-called psychological predicate.

27. See Postal, op. cit., for some discussion of these two verbs with respect to the nature of the surface verb remind.

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