

# 14 Multiple Analyses

Jorge Hankamer

## 0. Introduction

The purpose of this paper is to expose, examine, and reject a particular assumption about the nature of linguistic knowledge, or "competence". That knowledge means, as usual, whatever principles enable the speaker of a language to determine the sound-meaning correspondences of the language and use it as a means of communication.

It has been a fundamental and, so far as I know, unquestioned methodological assumption in the theory and practice of syntactic investigation that for a given body of data there is one correct analysis (which may, of course, have several notational variants), and that our job is to find that analysis. In this paper I will present a number of cases where, I claim, no such single analysis can be found, or rather, any one of two or more distinct analyses might be proposed, but each of them leaves some subpart of the facts unexplained which another analysis does explain. In the face of such cases syntactic investigators have always been baffled, for our methodological assumption (and tacitly our underlying theory of the nature of linguistic knowledge) tells us that we must choose between two competing analyses, unless they are notational variants of each other. I suggest that in view of facts such as those I am going to present, we must give up the assumption that two or more conflicting analyses cannot

be simultaneously correct for a given phenomenon.

If we are forced to this conclusion, as I hope to demonstrate, we must reexamine our fundamental assumptions about the knowledge that a native speaker must have internalized about his language. The classical assumption is actually a very strong claim about the nature of this knowledge, and about the properties of the learning mechanism that allow a speaker to acquire it. Linguists have long marvelled at the apparent ability of a child to acquire the grammar of his language in so short a time and on the basis of such incomplete and confusing data. I suggest that the child does not have such a putative ability at all. In the face of confusing and conflicting data, I believe he constructs conflicting analyses, and does not necessarily ever choose between them. There are, of course, certain universal constraints on the analyses he can construct; but I suggest that in the quite frequent cases where the analysis, even within these constraints, is underdetermined by the available data, the mind of the speaker does not, at least not always, choose one at random (or by any other choice procedure either). The classical assumption about the uniqueness of syntactic analyses in effect assumes that he does.

# 1. The Cases

1.0 The cases to be presented in this section constitute only a small sample of those available. As it would be impossible to give in full the arguments for so many analyses in a paper of this scope, in each case I will present merely a sketch of the arguments, indicating specifically the facts which require the adoption of a multiple analysis; in those cases where the arguments have been published in any form, the presentation

here will be correspondingly more elliptical.

## 1.1 The Negative Imperative Construction in English

The double analysis presented here is based on the work of Ava-Robin Cohen (1976). She observes that the negative imperative construction exemplified in (1) appears at first glance to be the product of an inversion rule, deriving it from (2). This is the analysis assumed by Emonds (1970).

(1) Don't you blow that thing any more.

(2) You don't blow that thing any more.

This analysis accounts for several properties of the construction in terms of an inversion operation, a type of process which we know to be necessary for many syntactic constructions in English and other languages. It explains straightforwardly, for example, the ungrammaticality of (3), where don't appears in two places:

(3) \*Don't you don't blow that thing when I tell you to.

And it accounts, of course, for the shape of the first word, which is derivable straightforwardly by do-support and contraction with the negative before inversion.

There are, however, properties of this construction which are not accounted for under the inversion analysis. One is the fact that inversion in positive imperatives is impossible:

(4) \*Do you blow your horn when you see the enemy.

Another is the fact that even in negative imperatives, inversion without contraction is impossible:

(5) \*Do you not blow that thing.

Compare the quite different behavior of yes-no questions,

where an inversion analysis is established:

- (6) Don't you have a car?
- (7) Do you have a car?
- (8) Do you not have a car?

Cohen proposes an analysis of this construction which posits the existence of a special negative imperative particle with the shape of don't, which is generated with that shape and in sentence-initial position; in this analysis no inversion is assumed. The imperative particle analysis accounts for the ungrammaticality of (4) and (5) straightforwardly; since no inversion rule is assumed to be defined on imperative constructions, there is no reason to expect such sentences to be derived.

The analysis does not, on the other hand, explain the ungrammaticality of (3). Note that it is not simply that there can be no double negation in imperatives:

- (9) Don't you not go into the water when you're told to, or you'll get a bash on the head.

A doubly negated sentence like (9) is not at all bad, for many speakers at least; a double don't sentence like (3) is absolute garbage. The inversion analysis would account for these facts, since under that analysis the normal operation of do-support will provide only one do even if there are two not's. It would also account for the shape of the don't, which the particle analysis does not.

Cohen provides a detailed discussion of the properties of this construction, which I will not attempt to reproduce here. What is of interest is that the construction exhibits

properties which can be accounted for under one analysis but not under the other, and at the same time exhibits other properties which can be accounted for under the second analysis but not under the first. It is clear that neither of the two analyses under consideration, by itself, is adequate.

There is always the possibility (and under the classical assumptions there is no other) that neither of these analyses is correct because there is some third, as yet undiscovered analysis which accounts for everything about the construction in a unified manner; according to the classical methodological assumptions we have to go and seek this third analysis. I suggest that an alternative which must be considered is that the classical assumption is wrong, and the right way to account for the properties of the negative imperative construction is to treat it according to both of the apparently conflicting analyses simultaneously.

I am suggesting, in effect, that the native speaker of English, or rather that part of his mind which is concerned with such matters, regards the don't you negative imperatives as related by inversion to the corresponding positive imperatives, and at the same time regards the word don't in such constructions as an invariant negative imperative particle. If this is accepted, it is no wonder that the construction exhibits properties attributable to both analyses.

This suggestion immediately raises a multitude of questions regarding the interaction of multiple analyses with each other and with other processes in a grammar. Obviously I will not be able even to satisfactorily discuss, much less examine closely or attempt to provide answers for, the range of questions which emerge instantly as soon as such a possi-

bility is contemplated; especially in a paper of this scope, which must perforce be intended more as suggestive and provocative than conclusive. In the present case I will note only that the construction would seem to be correctly described, and all of its known properties accounted for, if we say that every sentence in it has two derivations (one through inversion and one by way of base generation of a negative particle in initial position) and in order to be grammatical, a negative don't-initial imperative sentence must be derivable both ways. Thus the interaction of the two analyses is expressible in terms of a transderivational condition.

I will term a multiple analysis of this type, where the properties of a construction are determined by two analyses operating in conjunction, conjunctive multiple analysis; we shall see in the next case that there exist multiple analyses in which the two analyses interact disjunctively as well.

### 1.2 Reduced WH Questions

A very clear example of disjunctive multiple analysis is that of reduced direct questions. A detailed and thorough study of the properties of such questions is presented in Bechhofer (1976).

- (10) I just hired somebody to walk my dog.  
-- Oh yeah? Who?

Bechhofer shows that reduced questions like Who? in (10) are ambiguously derived, one derivation involving Sluicing (cf. Ross, 1969) and the other involving Stripping (cf. Hankamer, 1971). Each of these rules is independently motivated, and each has quite distinct and fairly well-established properties (see Bechhofer, 1976 and Hankamer, 1971 for discussion). The

motivation for the double analysis, as in the case above, is that while the two analyses have exactly the same consequences for the mass of cases, there are cases which can be accounted for only under a Sluicing analysis, and at the same time there are other cases which can be accounted for only under a Stripping analysis.

For example, a reduced question containing a stranded preposition betrays the application of WH-movement and subsequent Sluicing:

- (11) Slinky Sue just walked in.  
--Oh yeah? Who with?

A question like (11) can be derived under a Sluicing analysis because that analysis involves WH-movement fronting the WH constituent and subsequent deletion of the WH-clause except for the WH and a stranded preposition; it is not derivable under a Stripping analysis because Stripping can be shown in general not to leave a nonconstituent survivor.

Given this, one might propose to maintain a unique analysis by assuming that all direct reduced questions are derived unambiguously by Sluicing. This turns out to be impossible, however, because there are reduced WH questions in which the survivor of the reduction is something which cannot have been fronted by WH movement, and consequently cannot be a survivor of Sluicing:

- (12) Dick has a picture of [inaudible] on his desk.  
-- A picture of who?

NP's such as a picture of do not pied-pipe under question movement; furthermore, Bechhofer points out that when a fronted WH pronoun is accompanied by a pied-piped preposition, it

cannot appear as who but must take the objective form whom. For these reasons, reduced questions like (12) cannot be derived under a Sluicing analysis, but they can be derived by Stripping. The reader should consult Bechhofer's paper for the full argument, which is only partially represented here.

In this case, the situation seems to be that whereas the great mass of reduced questions are ambiguously derived, there are some grammatical questions which are derivable only under a Sluicing analysis, and other grammatical questions which are derivable only under a Stripping analysis. Note the difference between the interaction of the analyses in this case as opposed to the previous one: there neither analysis alone was restrictive enough, and I proposed that compliance with both was required to account for all the ungrammatical sentences; here neither analysis alone is capable of accounting for the existence of all the grammatical sentences, so it is necessary to say that compliance with either is insufficient for a sentence to be grammatical.

There are many clear examples of disjunctive multiple analyses of this kind, which result from partial overlap in the classes of sentences derived by distinct grammatical processes. I will not present any more here, but two which have been discussed explicitly as multiple analyses and demonstrated convincingly, I believe, to be such, are the reduced comparative construction than NP in English (Hankamer, 1973) and the WH-Cleft construction (Hankamer, 1974).

### 1.3 Two further examples of Conjunctive Multiple Analysis

Examples of conjunctive multiple analysis are more difficult to establish, and so far as I know no cases are recog-

nized as such in previous literature. Nevertheless, I believe that several cases of conjunctive multiple analysis have been discussed in the literature, and recognized as troublesome for the standard theory of transformational grammar. I will not discuss these cases in any detail, but I will cite two in particular which would cease to be mysterious and troublesome under a theory which allows conjunctive multiple analysis.

The first is the infinitival relative construction in English, exhibited in (13):

- (13) I have a stool for you to sit on.

Berman (1974) argues that the for-phrase (for you in this example) is underlyingly a matrix phrase, and that the subject of the infinitival clause is deleted by Equi under identity with this matrix for-phrase. She also argues, however, that in surface structure the for-phrase is in fact the complementizer-plus-subject of the lower clause. In order to account for the full range of facts within the confines of standard theory, she has to posit a transformation lowering the matrix for-phrase into the infinitival clause after deletion of the subject there, so that the originally matrix for-phrase, after controlling deletion of the embedded subject, then moves down and in superficial structure serves as the subject of the infinitival clause. This derivation is quite bizarre (in the sense that similar operations have never been found to be necessary elsewhere) and calls for an explanation.

The mystery disappears, however, if we adopt a general theory which allows multiple analyses. The fact which has to be accounted for is that the speaker of English regards the for-phrase as a matrix dative phrase and at the same time re-

gards it as representing the subject of the embedded infinitival clause (rather, he regards the NP in it as representing the subject of the infinitival clause; the for in this case is regarded as a complementizer). All this is accounted for straightforwardly if we say that such constructions have both analyses at once (in the conjunctive sense); any process which requires that the for-phrase be part of the matrix clause will treat it as such, and any process which requires that the for-phrase be treated as the embedded complementizer and subject will find it analyzed as required.

A more complex case is that of the temporal adverbial construction in Turkish, discussed in Hankamer (1972), which for some speakers has properties indicating that it should have an analysis as a relative clause construction, while at the same time having properties appropriate only to a class of adverbial constructions. In that paper I argued that the properties of the construction could only be accounted for if it were given basically an analysis as a relative clause construction, and allowed to acquire its non-relative clause properties by analogy with other adverbial constructions in the language. In order to state such analogical relations in the grammar of Turkish, it would be necessary to allow rules with transderivational reference.

Briefly, the problem is that when an adverbial relative clause like

- (14) Hasan -in gel-diğ-i zaman  
 Hasan-GEN come-PRT-POSS time  
 'when Hasan came'

is used with inceptive force, the genitive suffix does not appear on the subject as generally required in this type of

relative construction, so that in such cases we find

- (15) Hasan gel-diğ-i zaman  
 'when Hasan came'

Here the rule of case-marking treats such constructions not as relative clause constructions but as parallel to the synonymous inceptive adverbial constructions which do not take genitive case marking on their subjects:

- (16) Hasan gel -ince  
 Hasan come-ADV  
 'when Hasan came'

Once again the facts that have to be accounted for are that the speakers of the language simultaneously regard the constructions in question as relative clause constructions, thus accounting for their relative-clause properties, and as adverbial constructions of a type not generally produced by the same mechanism as relative clauses, thus accounting for their strictly adverbial-clause properties. These facts can be accounted for under a theory of multiple analysis by assigning the constructions in question two analyses at once; in this case, however, it must be stipulated that the case-marking of the subject of the clause is controlled according to the requirements of the adverbial analysis and not of the relative analysis.

Here is not the place to develop these ideas in full, but it seems that the theory of multiple analyses provides a way to develop at last a theory of analogy which will have some restrictive force. An initially attractive proposal would be that all observed cases of syntactic "analogy" are describable in terms of conjunctive multiple analysis, perhaps holding up to or after only a certain point in the derivation.

This would clearly allow us to maintain a theory which prohibits arbitrary transderivational reference, while still allowing a lucid treatment of the analogical phenomena which have been observed and discussed in recent syntactic literature. Other examples of such cases, in addition to the one discussed here, are the nominalization constructions in Ewe discussed in Clements (1975) and the object-agreement phenomenon in Spanish (Otero, 1972, Aissen, 1973).

## 2. Relational and Nonrelational Analyses

The position I am assuming is that when the universal constraints on linguistic structure permit two analyses of a given construction, no matter how they differ, it may be the case that the construction simultaneously has both analyses. In this section I will discuss a case which is of particular theoretical interest because it involves conflict between an analysis formulated in strictly positional terms and an analysis formulated in relational terms (cf. Postal and Perlmutter (forthcoming) and references cited there).

The construction is the permutation known as locational-adverb preposing with concomitant subject-verb inversion:

(17) Into the path of the truck darted a zebra.

(18) Under the chestnut tree stands an old woodshed.

These have been regarded (cf. Emonds, 1970) as simple shifts in word order. Recently Postal (1976) argues that the subject is not only shifted to post-verbal position but demoted from subjecthood by There Insertion (or a related process). Postal's proposal thus relates sentences like (17)-(18) to the corresponding There-Insertion versions:

(19) Into the path of the truck there darted a zebra.

(20) Under the chestnut tree there stands an old toolshed.

Postal provides several arguments for this analysis.

The proposed analysis seems to be contradicted, however, by the fact that such permuted sentences are grammatical with definite subject NP's as well:

(21) Into the path of the truck darted the zebra.

But sentences of this type should not be derivable under Postal's analysis, because the corresponding There-Insertion version is ungrammatical:

(22) \*Into the path of the truck there darted the zebra.

Postal has no explanation for this discrepancy.

I argue that (21) is derived by a permutation process distinct from the relational process which Postal posits for (17); and that (17) is in fact ambiguously derived, on the one hand by a relational demotion process and on the other by a simple permutation which so far as I can tell affects only linear order. The construction thus exhibits a case of disjunctive multiple analysis, with one analysis relational and the other non-relational.

The evidence for this is the following: it is fairly well established that in cases where a relational demotion has taken place, removing the subject of a sentence, certain adverbial constituents can, at least apparently, undergo raising operations into higher clauses just as the subject would have done if it were present. Such cases are discussed in Breckenridge (1975), Andrews (1975), and Thrainsson (1976).

The same behavior is evident in the construction under discussion here, if the former subject is indefinite:

(23) Into the path of the truck seemed to dart a zebra.

(24) Under the chestnut tree appears to have stood an old toolshed.

When the subject is definite, however, such migration of adverbial elements does not take place:

(25) \*Into the path of the truck seemed to dart the zebra.

(26) \*Under the chestnut tree appears to have stood the old toolshed.

These facts can all be accounted for if it is assumed that there is a subject-demotion process (There-Insertion or a related process) which affects only sentences with an indefinite subject, and that when this process has applied an adverbial constituent of the sentence can appear in the place where a raised subject would be in complex examples like (23)-(24); and that there is a distinct permutation process which is insensitive to the definiteness or indefiniteness of the subject, and that this process derives (21) without occasioning the subject-demotion which allows nonsubject adverbial constituents to be raised.

The discussion presented here is regrettably but necessarily sketchy, and is intended to be more suggestive than conclusive. I believe, nevertheless, that the case cited is representative of a large class of multiple analyses in which relational and nonrelational analyses coexist for a given construction, and that the existence of such multiple analyses is instrumental in the acquisition of relational rules by a language.

Consider the fact referred to above, that in cases where a subject has been demoted some non-subject (even a non-NP) can apparently undergo Raising:

(27) Under the chestnut tree appears to have stood an old toolshed.

(28) In this forest are believed to have been buried many martyrs of the revolt against the bad king.

One might attempt to avoid the conclusion that the adverbial phrases in these examples have undergone Raising by assuming that the inversion process has simply applied to the complex structure after raising of the original subject. This is contradicted, however, by the fact (noted by Emonds, 1970) that in general this inversion takes place only about simple verbs, and by the fact noted above that the inversion is sensitive to the indefiniteness of the subject just in case a Raising structure is involved.

My proposal is that the adverbial phrases in such constructions actually undergo Raising (whether this means that they are subjects is an open, and perhaps merely terminological, question). If this is correct, we have to ask why something that is originally not a subject should be able to undergo a process which is normally restricted to subjects, just in case there is no genuine subject present in the sentence. My conjecture is that this phenomenon results from the partly positional nature of subjects, and that the raised constituents in these cases get to undergo raising just because they happen to get into subject position (i.e. immediate pre-verbal position) by way of the adverbial-fronting rule which preserves the verb-medial word order.



In the same way, we can regard the there of There Insertion, which now behaves like a subject in many respects (particularly with regard to relational rules like Raising) as historically the relic of a noncyclic, nonrelational adverb-preposing rule (with concomitant subject inversion), owing its present status as a dummy subject to a reanalysis of the linear adverb-preposing rule as a relational rule, largely as a result of its successfully masquerading as a subject in many cases.

I will cite as a final case in support of this proposal the impersonal Object-Raising construction in German discussed in Breckenridge (1975). Ordinary Object-Raising is exemplified in (29); we also find (30):

- (29) Elefanten sind mit Doppeldeckern schwer zu  
'Elephants are with biplanes hard to  
transportieren.  
transport.'

- (30) Nach Berlin wird leicht zu fliegen sein.  
'To Berlin will easy to fly be.'

In (29) an object has been raised to become the subject of the predicate schwer, exactly as in the English Tough-Movement construction. In general, only direct objects undergo this rule. In (30), however, it looks like a non-object (in fact, a non-NP) has been raised in the same fashion. Breckenridge argues that the PP nach Berlin in a sentence like (30) is not in fact a derived subject, but merely one of many constituents which can be fronted to sentence-initial position by a general preposing rule (which has nothing to do with grammatical relations). Her proposal, which seems in general to be convincingly established, is that there is no derived

subject in such constructions, the raising operation having applied vacuously. The only thing she cannot explain is that in such an impersonal object-raising construction, the fronting of some non-subject constituent is obligatory:

- (31) \*Wird leicht nach Berlin zu fliegen sein.

One might try to make the verb-second constraint account for this, but that will not do because even the question is bad:

- (32) \*Wird leicht nach Berlin zu fliegen sein?

It is also impossible to insert the impersonal es in these constructions:

- (33) \*Es wird leicht nach Berlin zu fliegen sein.

The arguments that the constituents in the initial position of these sentences are not subjects are convincing; on the other hand, the observed odd constraint would be unnecessary if in fact the constituent that ends up in initial position had been raised there. Again the facts seem to indicate that a normally relation-sensitive Raising rule has taken, for lack of anything better, a non-object in the underlying structure and moved it into the position of a subject in the derived structure, without actually making it into a derived subject. In other words, the rule in these cases operates as if it were a rule effecting only a reordering of the affected constituents.

Cases like these are of particular interest because they indicate that there is perhaps not the strict differentiation between relational and positional rules assumed in current versions of relational grammar, but rather that a given rule may have both aspects. If this is true, it will be easier to see how languages can acquire particular relational rules

where they did not have them before. All that we need to assume is that the learner and user of a language has at his disposal both relational and positional ways of analyzing grammatical constructions, which seems at present to be clearly true; and that a given construction may have multiple analyses involving one positional analysis and one relational analysis.

### 3. Consequences

The consequences of adopting a theory of multiple analyses are rather far-reaching:

- a. In the practice of syntactic investigation, we have a potentially much more complex task than we thought. On the other hand, there is a whole class of questions which we have been struggling in vain to answer which in fact we don't have to answer at all.
- b. In syntactic argumentation, it will no longer count as an argument against a particular analysis that there are facts which it leaves unexplained, even if there exists an alternative analysis which explains those facts perfectly. This result will probably cause many linguists, rightly concerned for the preservation of our already pitiful supply of valid means of argumentation, to recoil in horror. Nevertheless, you cannot make a mode of argumentation valid by refusing to contemplate the possibility that the assumptions on which it rests are unsupportable.
- c. In the general theory, in giving up a strong

(albeit rather covert) claim about the fundamental nature of linguistic knowledge, we reduce the explanatory power of our theory from nothing to less than nothing, it seems. The final comment under (b) is also applicable here.

- d. On the other hand, we have a new claim about the psychological reality of linguistic analyses, and about the nature of linguistic knowledge, which may allow us to make sense of such phenomena as variation within an idiolect (any practicing syntactician who has done informant work on any complicated construction can attest that this exists), much of the most baffling dialect variation, the squishiness of many syntactic phenomena, and (perhaps most fundamentally) our general failure to establish some of the most basic features of syntactic structure.
- e. Finally, the conclusion drawn here has immediate and far-reaching consequences for the theory of syntactic change. It has these consequences partly by virtue of the different conception it imposes on the nature of what changes, and partly by virtue of the new possibilities it raises for mechanisms of change.

I suggest that one of the most instrumental factors in syntactic change is the existence of multiple analyses in the grammars even of adult speakers of any language. The existence of such multiple analyses poses for the child learning the language an even more difficult task than

has previously been thought, and his chance of reproducing exactly the grammar of his parents or peers is negligibly small. The judgments and behaviors associated with the different grammars will differ only in a few fringe areas of the construction, the core of judgments being substantially the same. Unfortunately for syntacticians, it is just in those fringe areas where we look for evidence to decide between conflicting theories; I suggest that we now have an explanation for why we are so frequently stymied, finding nothing there but uncertain and conflicting judgments. There are cases where people disagree firmly on the crucial examples, and cases where a single speaker cannot agree with himself. I suggest that this is exactly what is to be expected; since the evidence which would distinguish between two analyses for a given case is often to be found only in marginal or infrequent constructions, it is likely to happen that a child will never encounter or assimilate the data which would decide between them. In at least some of these cases he ends up having made no choice at all, and is consequently baffled when a linguist asks him for a judgment which depends on having made the choice.

How this situation provides a mechanism for syntactic change is obvious, and need not be elaborated further at this point. With regard to the results of such change, I will cite just

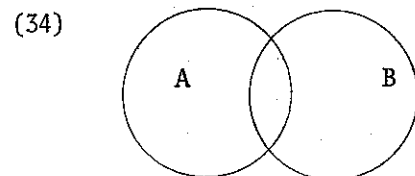
two examples of very generally observable phenomena which have always been baffling from the point of view of the classical theory, but which make perfect sense in a framework of multiple analyses. First, the striking and frequently observed fact that syntactic "dialect" variation often fails to correlate with any discernible geographic or sociological parameters. In this it is entirely unlike phonological and lexical variation. Second, the fact that we frequently find cases of closely related dialects with formally very different analyses of the same construction. The question of the mechanism of syntactic reanalysis -- how does a language get from one analysis of a given construction to a quite different one? -- is answered almost directly once we grant that the language may have both analyses at once.

It is also evident that the argument, which has appeared from time to time in historical syntax, that because a language at a given stage can be shown to have had such and such an analysis for a given construction, we should accept the same or a similar analysis for the construction at a later stage, can be rejected.

#### Conclusion

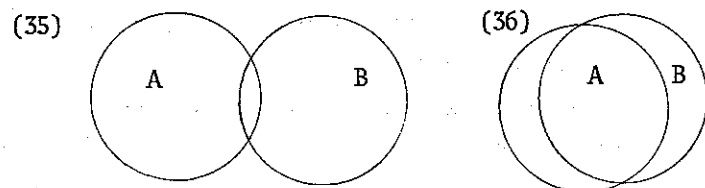
In all of the cases cited, I argue that the following situation obtains: there is a body of data, representing what we may call a "construction" in the language. For a substantial subclass of the data (in some cases almost all of it)

there are two formally quite different analyses which account equally well for the facts. There exist, however, facts in the data left unaccounted for by each of the analyses but accounted for by the other. The general situation may be represented as follows:



The leftmost circle represents the portion of the data accounted for by analysis A; the rightmost circle represents that portion accounted for by analysis B. The whole body of data is the union of that accounted for by A and that accounted for by B (we should be so lucky).

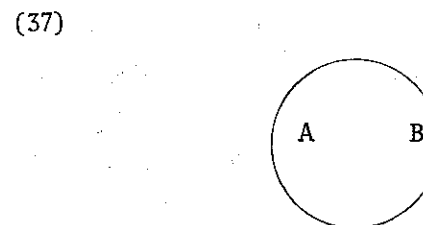
The area of overlap may be greater or smaller, as represented below:



Everybody is aware of the existence of cases like (35), where there is overlap between two analyses only in a restricted subclass of the cases; these are annoying, but have never been thought much of, except that once in a while somebody worries about the fact that some sentences are getting two derivations instead of one, without being semantically ambiguous. Given the existence of cases like (35), it should

hardly be surprising that there exist cases like (36) as well. I think I have demonstrated that such cases are far from rare.

Finally, given the fairly common occurrence of cases like (36), I see no reason why we should not assume that there are cases like



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