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MOSTLY SYNTAX AND SEMANTICS

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Ambiguity Tests and How to Fail Them

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Abstract

A number of tests used by linguists to distinguish ambiguity from lack of specification are described and illustrated, with brief critical commentary. The tests appeal to semantic, syntactic, and pragmatic principles. Special attention is given to tests using transformations whose applicability depends upon identity of sense; these tests can help to decide the status of examples for which other tests give no evidence. But there is a class of cases where the identity tests predict ambiguity, even though common sense (and tests not involving identity of sense) says that these cases involve special uses of sentences, not meaning proper, and other tests for ambiguity agree. These cases are characterized, and their anomalous behavior is explained on the grounds that they require suspension of the sincerity principle of conversation (that one means what one says).

1. Background.

The notion of ambiguity plays a fundamental role in syntactic argumentation. Indeed, much recent discussion turns on whether particular examples are or are not ambiguous, and if they are, in what way. The existence of a rule of neg-Transportation depends ultimately on whether sentences like

(1) I don't think she's bald.

are ambiguous (between a reading like that of It's not the case that I think she's bald and one like that of I think she's not bald) and the treatment of sentence types and speech acts involves a decision about how many readings examples like

(2) Why don't you ask her for help?

have (question and suggestion, in this case). The cases can be listed for pages: phrasal conjunction, tough Movement, Psych Movement, sloppy identity, referential opacity, and so on. In each case, the question is how many underlying (or semantic) representations
should be assigned to a particular example; if there are two or more, then transformational rules neutralizing these underlying distinctions must be posited.

The choice is between ambiguity, several underlying syntactic (or semantic) representations² for (1) and (2) and similar examples,² and a single representation corresponding to different states of affairs.³ This second situation has been called generality (Quine 1960:125-32), vagueness (G. Lakoff 1970) and indefiniteness of reference (Weinreich 1956:412), though neutrality, unmarkedness, and lack of specification would be equally good terms. The sentence

(3) My sister is the Puritanian Secretary of State.

is unspecified⁴ (general, indefinite, unmarked, vague, neutral) with respect to whether my sister is older or younger than I am, whether she ascended to her post recently or some time ago, whether the post is hers by birth or by merit, whether it has an indefinite tenure or will cease at some specific future time, whether she is right-handed or left-handed, and so on.

On the other hand, examples like

(4) They saw her duck.⁵
(5) He cooked her goose.

are clearly ambiguous; they must be assigned two quite different semantic structures. Many other examples are not at all clear on first inspection. For these, linguists have developed a collection of tests that separate the clear cases of ambiguity from the clear cases of lack of specification, and so can be extended, tentatively at least, to the problematic examples. Like all grammatical tests (those for constituency, category membership, and the like), these fail to apply in some situations, and they sometimes give unclear answers. Nevertheless, their range of applicability is wide enough to make it worthwhile for us to give a list of the tests in common use by syntacticians.

Our aim here⁶ is primarily descriptive of current practice, rather than prescriptive, although we have taken some care to examine lines of argumentation critically. It should be noted that grammatical tests in general, and ambiguity tests in particular, reflect the theory within which they are framed, so that we often find it appropriate to discuss the rationale behind particular tests (see especially sections 1.2.1, 1.2.2, and 1.3.3). Moreover, since the tests are not theory-neutral, they can be seen as giving insight into the central assumptions of the theories used by generative grammarians; occasionally, as in section 1.3.3, we consider meta-theoretical issues arising from the connection between theory and test, though such issues are not our main concern here.

1.2. Semantic tests.⁷

It will not do, of course, to argue that a sentence is ambiguous by characterizing the difference between two understandings.⁸
Sentence (3), for instance, isn't many-ways ambiguous just because we can perceive many distinct classes of contexts in which it would be appropriate, or because we can indicate many understandings by paraphrases. A difference in understanding is a necessary, but not a sufficient, condition for ambiguity.

Nevertheless, philosophers perennially argue for ambiguities on the basis of a difference in understanding alone, and even linguists are not immune. Thus, Zwicky 1969 maintains that

(6) Melvin became as tall as any of his cousins.
(7) Melvin became taller than the average Ohioan.
(8) Melvin became the tallest linguist in America.

have two semantic representations each, one 'in which Melvin changes, one in which other circumstances change so that Melvin's relative height changes' (293)—but without any support beyond the articulation of this difference in understanding.

In certain circumstances, however, some evidence as to ambiguity or the lack of it can be obtained from observations about semantics. The following subsections treat three such cases.

1.2.1. Appeals to semantic differentiae.

Sentences—like (3)—that are unspecified with respect to some distinction have otherwise quite similar understandings, so that the distinction in question must be the sort of thing that languages could plausibly fail to specify. Consequently, the burden of proof falls on anyone who insists that sentences like (4) and (5) are unspecified rather than ambiguous. Take (4). The distinction between the two understandings is that between two understandings of the object phrase her duck—a certain sort of bird belonging to a woman and a certain kind of action performed by a woman. First, we know of no language in which there is a regular, formal indication of just the difference between the understandings of (4). This argues either that we have either a lack of specification or an unsystematic ambiguity. But, second, the two understandings of (4) have little in common, so that a lack of specification is implausible.

The first argument refers to the plausibility of systematic ambiguity: if a distinction in understanding is a systematic ambiguity in some language, then that distinction is potentially realizable by a formal mark in some other language:9 conversely, a distinction not formally realizable is either a systematic lack of specification or an unsystematic ambiguity. If languages don't formally mark the distinction between some sort of bird belonging to a woman and some sort of action performed by a woman, then this difference of understanding in any particular language (like English) is either a systematic, that is general, failure to specify the difference between sorts of birds belonging to a woman and actions performed by a woman, or else it is an (unsystematic) ambiguity.

The second argument refers to the plausibility of lack of specification: if some distinction in understanding is systematically unspecified in language, then it must be a simple distinction.10 This argument is customarily used in a negative form, as above:

distant and complex semantic differentiae point to ambiguity rather than lack of specification.\footnote{11}

Note that from the facts that a particular semantic differentiae is simple and that it is formally marked in some language, we can conclude nothing about the status of this distinction for any particular example in any language; both lack of specification and systematic ambiguity are consistent with these facts. For instance, from the facts (a) that the older sister/younger sister understandings of (3) differ minimally, and (b) that there are languages that mark this difference formally (by different suffixes, or by a series of different lexical items, say), the strongest conclusion that can be drawn is that it is not implausible that the difference in understanding is an ambiguity; but these facts are consistent with both lack of specification and ambiguity. The fact that age differences, sex differences, specificity in noun phrases, inclusivity in plural pronouns, factivity in complement clauses, and so on are formally marked in some languages tells us nothing about the status of particular examples in English; we are not entitled to dismiss a claim of ambiguity out of hand, but the plausibility of the differentiae doesn't choose between ambiguity and lack of specification.

This caveat about appeals to differentiae holds even within a language. Thanks to the fact that English distinguishes a set of lexical items that are masculine (\textit{man}, \textit{boy}, \textit{king}, etc.) from corresponding items that are feminine (\textit{woman}, \textit{girl}, \textit{queen}, etc.) and the fact that English pronominal reference systematically distinguishes between masculine and feminine, the differentiae masculine/feminine plays a part in the semantic system of English. But from this we can conclude nothing about the status of lexical items like person, actor, chairman, secretary, dog, or goose, all of which can be understood as either masculine or feminine; the existence of a systematic distinction elsewhere in English says only that a claim of ambiguity for such items it not implausible, but it doesn't tell us whether any one of them is or is not ambiguous.

It will be useful here to give some terms for two familiar types of distinction in understanding: polar opposites and privative opposites. Two understandings \(U_1\) and \(U_2\) are polar opposites with respect to some semantic feature \(F\) if they are identical except that \(U_1\) can be represented as having \(+F\) where \(U_2\) has \(-F\), or the reverse.\footnote{12} \textit{Mother} and \textit{father} have understandings that are polar opposites with respect to a gender feature. \(U_1\) and \(U_2\) are privative opposites\footnote{13} with respect to \(F\) if \(U_1\) can be represented as being identical to \(U_2\) except that \(U_1\) includes some specification for \(F\) which is lacking in \(U_2\). \textit{Parent} and \textit{mother} have understandings that are privative opposites with respect to a gender feature; so do the technical term \textit{dog} 'male canine' and the ordinary-language term \textit{dog} 'canine'.

Note that polar opposites are contradictory, while one privative opposite (the more specific understanding) implies the other (the more general understanding). As we shall see in later sections, the logic of privative opposites makes it difficult to distinguish ambiguity from lack of specification whenever a privative opposition is in question.
1.2.2. Contradiction.

One way of detecting an ambiguity between privative opposites uses the fact that one semantic representation is more specific than the other. As a result, it should be possible to assert the general while denying the specific, without contradiction. To see this, compare

(9) That's a dog.

which our intuitions (and all standard dictionaries) would suggest is ambiguous, with

(10) That's a lion.

where we have no such intuitions (nor do dictionaries). Asserting the general while denying the specific gives us, respectively:

(11) That's a dog, but it isn't a dog.\(^{14}\)
(12) That's a lion, but it isn't a lion.\(^{15}\)

or, in a simple sentence:

(13) That dog isn't a dog.
(14) That lion isn't a lion.

Observe that (11) and (13) are not contradictions, while (12) and (14) are; additional information brings this out:

(15) That dog isn't a dog; it's a bitch.
(16) That lion isn't a lion; it's a lioness.

Example (15) can be understood as asserting that some animal is a canine but not a male canine, in fact that it is female. This possibility depends on dog having two semantic representations. (16), on the other hand, is a contradiction, which indicates that there is no way to assert one understanding of (10) and deny another. Even supplying the specific difference in understanding, as in (16), will not help. It is not, of course, necessary to give the appearance of paradox, as in (11)-(16), to test for ambiguity by investigating contradiction. It is sufficient to assert the general understanding and supply material that implies the denial of the specific understanding, as in

(17) That isn't a dog; it's a bitch.
(18) That isn't a lion; it's a lioness.

or

(19) That's a bitch, not a dog.
(20) That's a lioness, not a lion.
1.2.3. Inconstancy under substitution.

Other things being equal, synonyms, near-synonyms, and (in general) semantically related lexical items have similar privileges of occurrence. In English, must and have to, chrysanthemum and flower, bull and cow can be expected to occur in pretty much the same linguistic environments. If there is an environment in which only one of a pair can occur, and if this difference in distribution can't be attributed either to such meaning differences as are present in the items or to simple exceptionality, then we should suspect that the environment includes an idiom involving one of the items. This test can be used to support arguments from implausible differentiae (as in section 1.2.1). Thus, we expect that (5) is ambiguous rather than unspecified, since the distinction between the preparation for eating of a fowl belonging to a woman, and the irretrievable undoing or ruining of a woman is not the sort of thing languages fail to specify. Also, substituting bake for its hypernym cook, or swan for goose, eliminates one of the two understandings of (5).

(21) He baked her goose.
(22) He cooked her swan.

--and this inconstancy of (5) under substitution supports the argument from implausible differentiae by pointing to an idiom in (5) involving the words cook and goose.16

Similar arguments from inconstancy of substitution are given by Sadock 1972 in support of the claims that all of the following are ambiguous rather than unspecified:17

(23) That was a great idea.
(24) You bet it's cold.
(25) Why don't you feed the emu?
(26) What was the name of Paul Revere's horse?

Sadock also gives the reverse argument, that constancy of understanding under substitution indicates lack of specification rather than ambiguity, with reference to

(27) That was a brilliant idea.

(understood either literally or sarcastically), in contrast to (23) (with great understood either like excellent or important). However, the appeal to constancy of substitution is valid only insofar as we are not prepared to countenance systematic ambiguities in the lexicon. There are three alternatives: (a) each positive evaluative adjective (brilliant, smart, clever, good, intelligent, neat, enlightening, etc.) has two semantic representations associated with it, but these representations are related by a 'lexical implication rule'--a case where 'the existence of one lexical item implies the existence of another' (McCawley 1968:130); (b) there is a transformational relation between sentences with one understanding of (27) and those with the other understanding (like the transformational
relation that has been asserted between the inchoative and causative understandings of verbs like cool, melt, burn, freeze, etc., as in G. Lakoff 1970a:32-43; or (c) there are double semantic representations for the entire class of positive evaluative adjectives, without any statement at all in our grammatical description of English about the relationship between the two classes of semantic representations. For (27), a transformational relation is unlikely, since there is no independent motivation for it, and simply to posit double semantic representations leaves a generalization uncaptured by any principle of grammar. Consequently, a lexical implication rule (if we are willing to admit such rules) would be the only way to save the position that (27) and similar examples are ambiguous rather than unspecified.

Note that if there is other evidence indicating that (27) is unspecified rather than ambiguous, an argument from constancy of substitution is good supporting evidence. Standing alone, however, constancy of substitution merely makes a claim of lack of specification plausible.

1.3. Syntactic tests.

A number of types of tests for ambiguity use syntactic evidence. The assumption here is that, other things being equal, sentences with two distinct syntactic structures also have two distinct semantic structures.\(^1^8\)

1.3.1. Intersection of patterns.

A syntactic test closely related to inconstancy under substitution uses the fact that ambiguous sentences often exhibit two different structures, each of which is visible in unambiguous examples.\(^1^9\) This test has been discussed by Hockett 1954 and is emphasized by Koop 1971. To argue that (4) is ambiguous rather than vague, we adduce unambiguous\(^2^0\) sentences like

(28) They saw her \textit{sparrow}.
(29) They saw her \textit{turkey}.
(30) They saw \textit{him} duck.
(31) They saw \textit{his} duck.
(32) They saw her duck down into the cellar.
(33) They saw her huge duck.

Examples (28) and (29) suggest that duck belongs to two different syntactic classes, N and V, while (30) and (31) suggest that her belongs to two different syntactic classes, Objective Pronoun and Genitive Pronoun. These differences in category are also illustrated in (32) and (33), which can be used to argue that her duck in one understanding of (4) is an NP, in the other an NP (her) followed by a VP (duck). Taken together, these observations suggest that (4) represents two different surface syntactic patterns, which happen
(by accident) to intersect:

(34) S  (35) S
   NP  VP    NP  VP
     |    |     |    |
V NP VP   V NP  NP
       |         |    |
Objective V  Genitive Pronoun
Pronoun

The claim that two understandings represent different patterns can sometimes be supported by sentences in which both patterns occur as parallel constructions. If these sentences are grammatical, and not semantically redundant, they give evidence that the constructions are indeed different. This is the major line of argument. Chomsky 1965:101 gives for the ambiguity of

(36) He decided on the boat.

He notes that the two constructions realized in (36)—NP V+Particle NP and NP VP Preposition+NP—can occur together:

(37) He decided on the boat on the boat.

1.3.2. Special distribution.
A test that will not work generally is that of adding material to sentences to force one understanding. It won't do to claim that

(38) She wore a sweater.

is ambiguous between understandings including 'colored sweater' and 'white sweater' on the grounds that it is 'disambiguated' by the addition of the modifier colored or white. If (38) is merely unspecified, the added material will supply the necessary semantic content, and if (38) is ambiguous, the added material will select the necessary semantic content. That is, the extra elements fail to distinguish between ambiguous and unspecified examples.

Despite its inapplicability in general, the appeal to added material ('cooccurrence restrictions') is quite common in the literature. For instance, Sadock 1972 supports his claim that (24) is ambiguous rather than unspecified by saying that 'it occurs unambiguously in contexts which exclude one or the other meaning' (333), citing

(39) You bet it's cold but you didn't say it was.
(40) You bet it's cold, so why didn't you wager it.

But if (24) is unspecified with respect to whether it's an expression of the speaker's agreement with a statement of the addressee's or a
report of a wager, the added material in (39) and (40) would simply supply enough information to exclude one of these understandings; and if (24) is ambiguous (as indicated by other tests), the added material selects one semantic representation in each example. The added material tells us nothing about the status of (24).

However, in especially fortunate circumstances—when the distribution of the added material is restricted in ways that are not explicable on semantic grounds alone—this test can give real evidence.

For example, there is a well-known double understanding displayed by nominals such as

\[(41)\] the shooting of the hunters

Here hunters can be understood either as agent or patient. Notice that on either understanding the phrase describes an occurrence and can therefore appropriately take point-time adverbials. Example

\[(42)\] the shooting of the hunters last week

still has both understandings. Furthermore, on either understanding, prenominal modifiers are permitted:

\[(43)\] the illegal shooting of the hunters

But prenominal modifiers related to point-time adverbials succeed in eliminating one understanding of such phrases;

\[(44)\] last week's shooting of the hunters

has only the understanding where hunters is the direct object of shooting. Therefore, since the agentive understanding of (44) is not ruled out on semantic grounds—that is, it is not contradictory—some structural difference must be imputed to the source of (41) on the agentive understanding and its source on the patient understanding, so that the grammar can correctly associate the genitive time adverbial with one of these and not the other.\(^{22}\)

It is characteristic of good special distribution arguments that they use arbitrary features of the syntax of a language. The restriction on genitive time adverbials appears to be an idiosyncracy of English. The same is true of the distribution of post-nominal else as reviewed in Zwicky (to appear) and various phenomena surveyed in Sadowc 1972—the obligatory absence of that in (24), the location of stress in (24) and (25), postponed please in (26), and expletive the heck etc. inside wh-phrases in (26). It is not necessary to have an explanation for the special distributions of these items; we need only be satisfied that the distributions don't follow entirely from what the items mean. However, since the arbitrary aspect of special distribution arguments is essential, there will often fail to be pertinent items to detect real ambiguities in a language. The existence of an item whose distribution is in part arbitrary and in part dependent upon the presence of a particular element of semantic representation is a happy accident.
1.3.3. Transformational potential.

The previous two types of syntactic tests can be used by linguists of many persuasions. These lines of argumentation would be acceptable to traditional grammarians, structuralists, and transformationalists alike. However, they have quite restricted domains. Intersection-of-pattern arguments can detect only those ambiguities that are manifested in surface syntactic differences—immediate constituent division and membership in syntactic categories. Special distribution arguments can detect ambiguities with no surface syntactic reflexes, but only in a few lucky cases. There are more sensitive—and more theory-bound—tests, which can be extended to some of the many problematic examples not amenable to the other tests. These widely used tests call upon transformational operations to detect ambiguities.

The argument goes as follows: if the semantic representations for certain sentences lack specification of some piece of meaning, then the applicability of transformations to them cannot possibly depend on whether or not this piece of meaning is present. If a sentence is unspecified with respect to some distinction, this lack of specification must be preserved by every transformational operation. But if a sentence is ambiguous, then it is possible for a transformation to apply in some, but not all, of the cases, so that the effect of the transformation is to eliminate one or more understandings of the sentence.

For instance, no transformation applied to structures containing the structure of (3) affects the multiple understandings of (3):

(45) Is my sister the Ruritanian Secretary of State?
(46) What my sister is is the Ruritanian Secretary of State.
(47) My sister is the Ruritanian Secretary of State, isn't she?
(48) My sister, (who is) the Ruritanian Secretary of State, is a turophile.
(49) I knew my sister to be the Ruritanian Secretary of State.

are all consistent with my sister's being younger or older than I am, with her having acceded to the post recently or long ago, and so on. On the other hand, the understandings of (4) are affected by some transformations:

(50) Her duck was seen by them.
(51) It was her duck that they saw.
(52) Her duck, which they saw, had a bright green head.

have only one of the two understandings of (4). This indicates that (4) is ambiguous, while (3) is unspecified.

An argument from transformational potential requires an independently motivated transformation, of course, just as a special distribution argument requires an element whose distribution is not
completely predictable from its meaning. It would not do to claim that

(53) Susan and Matilda talked.

is ambiguous between a sentential conjunction understanding and a phrasal conjunction understanding on the grounds that the rule of Conjunct Movement eliminates one understanding. It is true that

(54) Susan talked with Matilda.

has only one of the understandings of (53). But it is the very relationship between (53) and (54) that motivates the rule of Conjunct Movement in the first place. Unless there is independent evidence for Conjunct Movement, it cannot be used to argue for the ambiguity of (53).23

The structure of arguments from transformational potential is, in fact, even more complex. Consider a familiar sort of example:

(55) We expected that the psychosemanticist would examine George.
(56) We expected the psychosemanticist to examine George.

The question is whether (55) is ambiguous as to who is the object of our expectations, the psychosemanticist or George, or whether it is unspecified. Sentence (55) has both understandings, sentence (56) only the former. We can conclude from these observations that

if (i) Raising doesn't 'change meaning',

and if (ii) the applicability of Raising depends only upon its input structures, or at least upon some set of syntactic structures or semantic representations,

and if (iii) there is independent evidence for the transformational rule of Raising,

then either (iv) (55) has two syntactic structures, and Raising applies to only one of them,

or (v) (55) and (56) have somewhat different syntactic structures, being related as privative opposites, and Raising applies only to the structure of (56).

Let us take these clauses one by one.

First, if some transformations can 'change meaning', then it is possible that Raising is such a transformation. It might be that applying Raising to (55) 'changes the focus' and yields (56). Unless we can argue on independent grounds that Raising is not a meaning-changing transformation, the difference in understanding between (55) and (56) sheds no light on the ambiguity issue. In
theories that prohibit meaning-changing transformations, the understandings of (55) and (56) must bear on this issue, subject to the following qualification.

Second, if the applicability of some transformations depends upon material not in semantic or syntactic structures—if, for instance, the applicability of some transformations depends upon purely pragmatic considerations—then it is possible that Raising is such a transformation. It might be that the applicability of Raising to (55) depends upon who the speaker of (55) has in mind. Unless we can argue on independent grounds that Raising is not dependent on pragmatic considerations, the difference in understanding between (55) and (56) sheds no light on the ambiguity issue. In theories that prohibit pragmatically conditioned transformations, the understandings of (55) and (56) must bear on this issue, subject to the previous qualification.

It follows that in relatively unconstrained syntactic theories—those allowing meaning-changing transformations of pragmatically conditioned transformations—it is very difficult, if not impossible, to apply ambiguity tests using transformational potential. In fact, theories permitting pragmatically conditioned transformations also make difficult the tests from intersection of patterns and special distribution, since in such theories pragmatic considerations might have influences at any level of grammar. Since we are treating normal argumentation, in which transformational potential is taken to be significant, we continue this discussion by assuming a constrained syntactic theory.

Third, it must be established on independent grounds that there is a rule of Raising. If there is no evidence for Raising, or if arguments for Raising are based entirely upon the relation in understanding between (55) and (56), then facts involving Raising don't lead to any clear result about the ambiguity of (55).

If all the preceding conditions are satisfied, we are still entitled only to one of two conclusions: either that (55) is ambiguous by virtue of having two distinct syntactic structures, or that (55) has a somewhat simpler syntactic structure than (56), the difference in structure being the element that conditions Raising for (56).

For if Raising can't be demonstrated to map the structure of (55) into the structure of (56), or if the only evidence that Raising performs this mapping comes from the relation between (55) and (56), then (again) facts involving Raising don't lead to any clear result about the ambiguity of (55). We can posit different structures for (55) and (56), parallel to current analyses of interrogatives, negatives, imperatives, passives, and the like.

Arguments for ambiguity then depend very much on arguments for the form of transformational rules. Well-established rules like wh-Question Movement provide an excellent basis for transformational potential arguments. Rules like Passive and Raising are less useful, because the examples we are most interested in are just those that are crucial in deciding the form of the rules.

A few words on arguing for lack of specification by means of transformational potential: such arguments are ex silentio;
to claim that a particular example is unspecified, on the basis of transformational potential, is only to claim that we know of no transformations that eliminate one of the understandings of the example (as in the discussion of (3) earlier in this section). Arguing in this way is suggestive, though not (of course) decisive.

We now turn to an especially interesting subclass of transformational potential tests.

1.3.4. Identity tests.

These use certain rules that refer to identity of constituents—pronounization and deletion rules requiring identity of sense (rather than identity of reference). The utility of Conjunction Reduction for this purpose has been recognized in generative grammar since Syntactic Structures, where this rule was used to determine the boundaries and the category of a constituent (Chomsky 1957:35-6). Roughly, to be eligible for reduction, two conjoined clauses must be of the forms X - A - Y and X - B - Y, where A and B are constituents of the same type. This condition on A and B can be used to support arguments distinguishing ambiguity and lack of specification, as in the case of (4). If (4) is ambiguous, then her duck in one understanding is not of the same type as her duck in the other: one is an NP composed of Det plus N, the other is composed of the two constituents NP and VP (recall (34) and (35)). The sentence

(57) They saw her swallow.

has the same two understandings. It follows that Conjunction Reduction should be possible only when (4) and (57) have matching understandings;

(58) They saw her duck and (her) swallow.

should have two understandings, not four—which is correct. The two non-matching, or crossed, understandings, are excluded by the condition that A and B be of the same type.

With respect to the material X and Y which must be identical, Conjunction Reduction provides an even more stringent test. If

(59) Morton tossed down his lunch.

were unspecified, rather than ambiguous, as to whether Morton bolted his lunch or threw it to the ground, then the parallel example

(60) Oliver tossed down his lunch.

would also be unspecified, and the reduced sentence

(61) Morton and Oliver tossed down their lunches.

would have four understandings, not two, because the identity condition on Conjunction Reduction can't require identity of elements that aren't part of syntactic structure. But (61) lacks the crossed
understandings (except as a joke), and we conclude that (59) is ambiguous. To support our intuition that (61) lacks the crossed understandings, we can add contextual information so as to favor different understandings in the two predicates:

(62) Morton, as always a greedy eater, and Oliver, who continued to refuse food on principle, tossed down their lunches.

Contrast the long-standing versus recent understandings of (3), which are paralleled in

(63) My sister is a prominent composer.

but which are not eliminated by the identity condition on Conjunction Reduction:

(64) My sister is the Ruritanian Secretary of State and a prominent composer.

has all four understandings, as we can see by appending contextual information forcing different understandings in the two predicates:

(65) My sister is the Ruritanian Secretary of State, and has been for years, and a prominent composer, thanks to her Concerto for Bassoon and Tympani that was published last week.

If (64) lacked the crossed understandings, (65) would be anomalous. Other deletion-upon-identity transformations give the same results. The sentences

(66) She called Jane a cab.
(67) He called Jane a dog-cart.

each have two understandings, and the result of Gapping—

(68) She called Jane a cab, and he a dog-cart.

—still has only two (again excluding obvious jokes). Similarly, VP Deletion, as in

(69) I wouldn’t call her a cab, but George might.

excludes the crossed understandings.

G. Lakoff 1970b has increased the stock of rule tests by reference to identity transformations that yield pro-forms, in particular a rule that gives so, as in

(70) I called her a cab, and so did George.

to which we may add the rule that gives do so as a pro-form for activity VPs—
(71) I called her a cab, but George wouldn't do so.

and some rule or rules generating the same (thing)--

(72) Margaret abhors Melvin's cooking, and the same (thing) goes for Selma and Sherman.

(73) Yesterday my best friend was denounced as a Bloomfieldian counterrevolutionary, and today the same (thing) happened to me.

(74) This morning my sister sold her self-portrait, and this afternoon I did the same (thing).

It is important to note that the identity tests support the other tests, in the sense that they never predict lack of specification when other tests predict ambiguity. In certain instances the identity tests seem more stringent than other tests; these are treated in section 2.3 and the appendix. We continue our discussion of the identity tests in section 2.1 below.

1.4. Pragmatic tests.

A limitation on the use of the identity tests for ambiguity arises from the possibility that some crossed understandings are excluded by virtue of pragmatic, rather than semantic, considerations. Let us consider an example in some detail.

Heinämäki's recent treatment of before clauses like the one in

(75) John shut up before Harry got mad at him.

tries 'to show that the context determines which one—the before-clause or its negation—is understood to be a valid inference' (Heinämäki 1972:140), without taking a stand on whether the two understandings of (75) are distinct in semantic representation. An identity test seems to indicate ambiguity:

(76) John shut up before Harry got mad at him, and so did Chuck.

doesn't allow the crossed understandings (in which Harry didn't get mad at John but did at Chuck, or the reverse). However, as Richmond Thomason has pointed out to us, it might be the case that there is only one before in semantic structure, and that this before is usable in two different classes of contexts, being roughly paraphrasable by and then in one class of contexts, by and so...not in the other. Thomason also points out that there is a testable difference between the pragmatic account and the semantic one: in the pragmatic account, the crossed understandings should be absent in the unreduced sentences. The question is then whether sentences like

(77) Mary shut up before Bill left, and Jane shut up before Harry got angry; Bill left, and Harry didn't get angry.
are anomalous or not. Our own judgment in this case is that (77) is no more anomalous than sentences like

(78) Julia declined a cocktail, and then Iris declined an irregular verb.
(79) Stan croaked [like a frog], and then Ollie croaked [died].

which have two homophones, differently understood, in close proximity. Presumably the difficulty in obtaining the crossed understandings in such cases has to do with psychological set and not with differences in contextual conditions; this view is supported by the fact that the anomaly of examples like (78) and (79) can be alleviated by supplying a previous discourse favoring the crossed understandings, e.g., for (79):

(80) Stan has often amused us with his imitations of animals. Unfortunately, Ollie had both a weak heart and a violent fear of frogs and toads. Stan croaked, and then Ollie croaked.

The same is true of (77):

(81) Bill announced that he was about to leave, and Harry said that he'd be furious if Jane didn't shut up. Mary shut up before Bill left, and Jane shut up before Harry got angry; Bill left, and Harry didn't get angry.

We cannot conclude that there are no cases for which a pragmatic account of non-crossing is correct—only that (76) seems to require a semantic account.

One way in which pragmatic considerations certainly do eliminate crossed understandings is in the application of transformations requiring identity of reference, as Conjunction Reduction does for definite NPs. Both (3) and (63) can be understood as referring to a younger sister or an older sister; the reduced conjunction (64) does not allow an understanding in which a younger sister is the Huritanian Secretary of State and an older sister a prominent composer, or the reverse. Non-crossing here follows from the fact that Conjunction Reduction requires identity of reference for the two occurrences of my sister. The pragmatic reflex of this requirement is that the two occurrences of my sister must be understood as referring to the same person in every context in which (64) is appropriate; consequently, the two occurrences cannot have different properties.

2. Identity tests for ambiguity.

2.1. Introductory remarks.

In the recent literature (following G. Lakoff 1970b) identity tests have been much used to decide cases for which other tests for
ambiguity are inapplicable or unclear. Thus Lawler 1972:250 argues from identity tests that

(82) Ken drives a truck.

is ambiguous, not vague, between a habitual and an occupational reading, while Green 1972:92 argues that

(83) Miranda hammered a coathanger.

is vague, not ambiguous, with respect to whether the resultant state is flatness or straightness.

There are still other cases where the identity tests bear on the truth of some unobvious claims. For instance, Dahl 1972 maintains that sentences like

(84) Bill loves his wife, and so does Harry.

are not ambiguous between an understanding in which Harry loves his own wife and one in which he loves Bill's wife (as all other writers on the subject have assumed). However, the position that (84) is unspecified is not verified by identity tests:

(85) Bill loves his wife, and so does Harry, and the same thing goes for Sam and Mike.

has several understandings, but not one in which Harry loves Bill's wife while Sam and Mike each love their own, nor one in which Bill and Harry each love their own wives while Mike loves Sam's. These crossed understandings should be possible if (84) were unspecified.

There are other cases where application of identity tests yields no significant results. Lakoff and Peters 1969 analyze both

(86) John and Martha left.
(87) John and Martha are married.

as ambiguous between sentential conjunction and phrasal conjunction, the latter corresponding to sentences like

(88) John left (together) with Martha.
(89) John is married to Martha.

respectively. David Dowty, Larry Martin, and Carlota Smith have suggested to us that identity tests indicate that (86) is unspecified and (87) ambiguous:

(90) John and Martha left, and so did Dick and Pat.
(91) John and Martha are married, and so are Dick and Pat.

According to them, (90) allows the crossed understandings, (91) does not.

But it seems to us that the crossed understandings are available for (91) as well, since anyone who is married is married to someone. Similarly, it is not surprising that (90) can have crossed understandings, since anyone who has left together with someone has left, and the fact that someone has left does not exclude the possibility that he left together with someone. We are dealing here with privative oppositions, so that no matter what the linguistic state of affairs, by applying identity tests we will always conclude that
we are dealing with a lack of specification; the existence of the
less specific understanding guarantees that we will get all possible
understandings.

The same is true of other cases of privative oppositions.
Consider the sentence

(92) I saw a dog, and so did Harold.

as a relevant datum bearing on the putative ambiguity of

(93) I saw a dog.

Now (92) is to be derived by an identity-of-sense transformation
from

(94) I saw a dog, and Harold saw a dog.

which has four understandings in which the phrase a dog is understood
to be nonspecific: 28

(95) I saw a dog, and Harold saw a dog.

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The identity-of-sense condition on so should eliminate understandings
2 and 3. But how can we tell? Even if we have strong intuitions
about what (92) and (94) say, how could we elucidate these intuitions
to someone who doesn't share them, or is puzzled about them? No
appeal to contexts will help, because every context in which the
crossed understandings (2 and 3) are appropriate is also a context
in which the parallel understanding is appropriate. Therefore, we
can't test the possible understandings of (92)---or (94), for that
matter---by supplying a context that forces one of the crossed under-
standings, as we did in the discussion of (61)-(62) and (75)-(76); if
we eliminate the parallel understandings, we also eliminate the
crossed understandings.

Yet another example involves verbs that may be understood
factively, but are not necessarily so understood (Kiparsky and
Kiparsky 1970:163). If someone hypothesizes that a sentence like

(96) The police reported that the culprit had fled.

has a factive understanding and an understanding with no commitment
as to factivity, we cannot use identity tests to support or to
attack the hypothesis; the factive understanding implies the other.

In fact, ambiguities involving privative opposites will be
extremely difficult to argue for with any syntactic test. Intersection-
of-pattern arguments will be very hard to come by, since we will need
not only a diagnostic element with a distribution that is syntactically
constrained in part, but also one constrained semantically to occur
only with items having the more general understanding; a restriction
to occurrence with the more specific understanding would not be
detectable, since any sentence with the more specific understanding
is consistent with the more general understanding. Thus, in the
case of dog we would need an element constrained to occur only
with nouns whose gender is not indicated (person, lion, friend,
neighbor, and the like) and nouns with one semantic representation
in which gender is not indicated (dog, goose, duck, and so on),
and constrained syntactically in addition. Much the same is true
for transformational potential tests other than those using identity
of sense: we would need a transformation whose applicability
depended upon the occurrence of the more general understanding,
therefore which applied only to structures that lacked indication of
the value of some semantic feature. It isn't clear that there are
any such transformations, or even that these are any diagnostic
elements with the required sort of distributional restriction.

In contrast, a very promising area for the application of
identity tests is that of illocutions and perlocutions. For the
purposes of the following discussion, we will use the term illocution
to refer to those speech-act types that are distinguished in the
semantic representations of a particular language. It follows that
one of the ways in which languages can differ is in their sets of
illocutions, and this seems to be so. For any particular language,
our task is to decide what its illocutions are and how they are
realized in terms of linguistic form. Some illocutions will have
forms unique to them, like the English reduced sentences that are
unambiguously suggestions:

(97) Why not move to Chicago?
(98) How about giving yourself a treat?

Much more commonly, however, the surface forms of different
illocutions will coincide in part, and we are confronted with the
problem of deciding which sentences are illocutionally ambiguous
and in what ways. This problem is made more difficult by the fact
that a given sentence will have many different understandings, as
far as its possible uses are concerned, but that only some of these
require representation in semantic structure. Those uses which do
not require representation we term perlocutions.

We now turn to an examination of the properties of perlocutions with respect to
identity tests.

2.2. The unexceptional perlocutions.

We wouldn't expect identity tests to be sensitive to perlocutions,
since these effects (or the intention of the speaker to accomplish
them) are not part of the semantic representations of sentences.
In most cases this expectation is fulfilled. Suppose, for example,
that the assertion that Bill dated Martha would surprise an addressee
in some circumstances. Then in these circumstances, the same
addressee would be surprised by any of the following sentences:

(99) Bill dated Martha and so did Harry.
(100) Harry dated Martha and so did Bill.
(101) Bill and Harry dated Martha.
(102) Harry and Bill dated Martha.
(103) Bill dated Martha and Harry Cynthia.
(104) Harry dated Cynthia and Bill Martha.

Notice in particular that the surprisingness of the assertion that Bill dated Martha is entirely independent of whether or not the other conjunct is surprising. That is, the crossed understandings are available regardless of what reduction rules have applied. Observe also that a speaker might intend either one, or both, or neither of the underlying conjuncts in the sentences above to be surprising, so that the crossed understandings having to do with the speaker's intentions are available as well.

Many other typical perlocutions share this behavior. Thus, either of the conjuncts in (99)-(104) can be intended to mislead and could succeed in misleading. In a suitable context any conjunct in (99)-(104) could amaze, please, offend, or hurt the addressee, make the speaker seem petty, forthright or ridiculous. In all of these cases the reduction tests give believable results: sentences are not many-ways ambiguous as to perlocutionary intent or effect; they are unspecified.

2.3. The exceptional perlocutions.

In isolation, any strong assertion is open to both a literal and a sarcastic understanding; the stronger the assertion, the more plausible the sarcasm. Thus

(105) Grobman is a real genius.

can be used to convey something on the order of

(106) Grobman is a complete idiot.

Now consider the following sentences:

(107) Grobman is a real genius, and so is Chomsky.
(108) Grobman and Chomsky are real geniuses.
(109) Grobman is a real genius and Verhall an absolute prince.
(110) Grobman and Verhall are a genius and a prince, respectively.

The second conjunct in (107) and (108) has been chosen so that the sarcastic understanding is far-fetched. The result is that the first conjunct cannot be understood sarcastically either. In (109) and (110), where we have no special prejudices which could influence the understanding, the conjuncts may be literal or sarcastic. But both must be literal or both sarcastic; the crossed understandings do not exist. According to the identity tests, then, we must adjudge the difference between a literal and a sarcastic understanding as an ambiguity. This result it tantamount to the problematic claim that the noun genius (and all similar lexical items) is ambiguous between an understanding 'exceptionally intelligent individual' and an understanding 'exceptionally stupid individual'; compare the
discussion of brilliant in section 1.2.3.

Let us consider metaphor next.

(111) Irving has jumped into a pit of alligators.

could be used to signify something on the order of the literal sense of

(112) Irving has embarked on a dangerous course of action.

Now with this metaphorical interpretation, notice that only a parallel metaphorical understanding is available for the second underlying conjunct in any of the following sentences:

(113) Irving has jumped into a pit of alligators and so has Gebhardt.
(114) Irving has jumped into a pit of alligators and Gebhardt has too.
(115) Irving and Gebhardt have jumped into a pit of alligators.

Thus the reduction test informs us that the metaphorical sense of the first conjunct is one pole of an ambiguity. But there is no obvious bound on the number of metaphorical uses of a given sentence, so the identity tests tells us that every potentially metaphorical sentence is infinitely ambiguous.31

Similarly, the following sentence cannot be taken as a non-literal insult followed by a serious assertion:

(116) Your father drives a semi and so does your brother Mark.

Nor is there any understanding of

(117) The Polish Academy of Sciences just announced the first successful appendix transplant and so did the Bulgarian Academy of Sciences.

in which the first conjunct is a joke while the second is a statement of fact.

(118) There are about a million students in my introductory class and about a half million people in Greater Winnipeg.

is likewise odd unless the first conjunct expresses a reasonable estimate of the size of the class. And finally,

(119) Alfred eats like a horse and so do zebras.

can only be taken as indicating that Alfred is a grazing animal or
something of the kind. These examples illustrate that insults, jokes, exaggerations, and similes work like metaphor in limiting the understanding of subsequent reduced conjuncts.

Several of these perlocutions share an additional behavior with respect to the identity tests, a behavior that makes it certain that the tests need revamping: if the first conjunct is understood literally, a second reduced conjunct may be understood nonliterally. That is, for several of these perlocutions, an identity test yields neither the straightforward result that the difference in understanding is an ambiguity (two understandings), nor that it is a lack of specification (four understandings). Instead, there are three understandings. To see that this is so, consider again example (116). This sentence can certainly be understood as a serious assertion of the beliefs or as a double insult. In the latter case it could be felicitously uttered when the speaker does not believe that either person in fact drives a semi. As has already been pointed out, (116) doesn't have an understanding in which the first conjunct is nonliteral but the second conjunct is literal. But if the speaker of (116) believes that the addressee's father does indeed drive a truck and that the addressee knows he believes this, he could well intend the second conjunct to be understood nonliterally as an insult. The first conjunct, the literal one, would serve to soften the addressee up for the blow of the second, nonliteral, conjunct.

One totally unacceptable interpretation of the fact that some reduced sentences have three understandings would involve the claim that the range of ambiguity of underlying clauses is partially dependent on whether they are first or second conjuncts. Such a conclusion could be accommodated in a generative grammar only by means of a novel sort of semantic well-formedness constraint.

2.4. An interpretation of the facts.

It is clear first of all that there is a property shared by all of the anomalous perlocutions which distinguishes them from the perlocutions that behave in the expected manner. The anomalous perlocutions involve a suspension of a fundamental principle of conversation: the sincerity principle (Grice's supermaxim of quality: 'Try to make your contribution one that is true'). Joking, irony, sarcasm, metaphor, simile, and nonliteral insults all involve the speaker's saying something he does not literally mean. Furthermore, the speaker wants the addressee to recognize that he is not speaking sincerely. In contrast, the unexceptional perlocutions either require no suspension of the sincerity principle (as in pleasing, shocking, offending, etc.) or else involve the speaker's concealment of a suspension (as in misleading, lying, some flattering, etc.).

The fact that the speaker wants the addressee to recognize his insincerity can help to explain why the anomalous perlocutions can be signalled nonlinguistically by winks, jabs in the ribs, and so on. There is also a tendency for these perlocutions to become partially conventionalized in the forms of the language—that is,
for them to become illocutions. Thus a dialect of American English which employs nasalization to indicate sarcasm has been reported. Similarly, it is possible to mark an utterance as a joke by putting on a W. C. Fields or Groucho Marx accent. In English and Russian, literal comparisons can be distinguished from similes.

(120) He eats like a bear does.
(121) On jest kak medved'.

can only be literal, whereas

(122) He eats like a bear.
(123) On jest medvedem.

can also be exaggerated similes. Of course when these intentions become codified, the original effect is weakened or lost. A joke is better if told with a straight face, and sarcasm is more biting if the pretense of seriousness is maintained. Hence there is also a tendency for differences between the literal and nonliteral intentions to disappear. Note that there is no form in English or Russian that signals that an utterance is to be taken as a nonliteral simile. Now observe that the ways of understanding (103)-(105) are just those available for the unredex sentence

(124) Irving has jumped into a pit of alligators, and Gebhardt has jumped into a pit of alligators.

The same is true for examples involving the other exceptional perlocutions. In each case, the absence of one crossed reading is a pragmatic phenomenon, not a semantic one; recall the earlier discussion (section 1.4) of Thomason's suggestion. That is, identity tests for ambiguity are irrelevant for cases like (103)-(105). But why should the anomalous perlocutions—those involving the suspension of the sincerity condition and an intent on the part of the speaker that this suspension be recognized—fail to have one crossed understanding in examples like (124)?

A plausible line of explanation is the following. Once a conversational principle has been violated, the hearer has no way of telling when the rule will be back in force and tends to assume that the violation will continue for some time. Thus, the violation persists through some stretch of discourse. For certain conversational principles, those concerning politeness, for instance, the span of violation is considerable. Once a speaker has failed to 'keep his distance', he cannot easily resume a polite stance. Consequently, once he has asked a personal question, it is strange for him to use the formula if you don't mind my asking to introduce another personal question; he has already been presumptuous:

(125) A. How much did that dress cost?
   B. Twenty dollars.
   A. ?If you don't mind my asking, where did you buy it?

Note that the same questions, but with the formula first, are in no way odd:
(126) A. If you don't mind my asking, how much did that dress cost?
    B. Twenty dollars.
    A. Where did you buy it?

The same persistence effect explains why the unreduced example (124) lacks the crossed understanding metaphor-literal statement, and why

(127) There are about a million people in San Antonio and there are about a million people in my introductory class.

lacks the crossed understanding hyperbole-literal statement, and why

(128) There are about a million people in my introductory class and there are about a million people in San Antonio.

is odd.

The anomalous perlocutions, then, do not provide true exceptions to the identity tests for ambiguity; their properties seem to follow from their nature and from the pragmatic considerations sketched above.
Appendix. Intentionality and identity tests.

The problem of intentional versus nonintentional understandings of sentences like

(129) John cut his arm with a knife.
(130) John hit the wall.
(131) Bruce stumbled coming down the stairs.

is considered by G. Lakoff 1970b, who argues for an ambiguity by applying the identity test with so:

(132) John cut his arm with a knife and so did Harry.
(133) John hit the wall and so did Harry.
(134) Bruce stumbled coming down the stairs and so did Herb.

are said by Lakoff to lack both crossed understandings. He cites one language, Cope, that appears to distinguish intentional from nonintentional understandings by morphological means, thus offering the defense that the differencia between the understandings of (129)-(131) is not implausible (compare the discussion in section 1.2.1). Lakoff's conclusion has been disputed by Catlin and Catlin 1972.

There are several difficulties in these discussions. First, there is some terminological confusion; the terms intentional (versus nonintentional or unintentional), volitional (versus nonvolitional), and purposive or purposeful (versus nonpurposive or accidental) have been used by one writer or another. But these words do not mean quite the same thing in English, and it is not clear which of them, if any, correctly describes the difference between the understandings of (129)-(131).

Second, it is hard to tell how the negative terms are to be understood: do they indicate polar oppositions or privative oppositions? Both Lakoff and the Catlins seem to take the former position, but without any argument on the point. Note that in the latter position the identity tests would be inapplicable, as we pointed out in section 2.1.

Third, it is not obvious that the differences in understanding exhibited by (129)-(131) are a matter of intention alone. Sentence (130), for example, might be claimed to exhibit two different understandings of the subject (John versus John's body), a difference in agentivity, a difference in the sense of hit, or a difference in deleted adverbials (with his fist versus with his body, or either of these versus no adverbial element in semantic structure). Sentence (130) might, in fact, have more than two readings in semantic structure. One possibility, based on analyses in Dowty 1972:ch. 5, is that (130) has three semantic representations—intentional agentive, nonintentional agentive, and nonagentive. In the intentional agentive understanding, John intends to hit the wall and accomplishes this; in the nonintentional agentive understanding, John intends to act, but doesn't necessarily intend to hit the wall; in the nonagentive understanding, John doesn't necessarily intend to act. Note
that the distinction between intentional and nonintentional agentives, as well as the distinction between agentives and nonagentives, is a privative rather than a polar opposition, so that identity tests will not be applicable.

Fourth, different speakers give somewhat different judgments on the ways in which sentences like (129)-(131) can be understood. Catlin and Catlin claim that the two understandings of (129), like those of (130) correspond to two quite different physical acts, 'John's nicking his arm while peeling potatoes versus gouging his arm to the bone' (507). Our own feeling is that the difference in the actions doesn't correlate at all with intentionality, that (129) has all four possible understandings.

Furthermore, on reductions with so, the Catlins disagree directly with Lakoff, who claims that (132) 'can involve two purposeful, or two accidental, cuttings. But (132) cannot mean that John accidentally nicked his arm (while slicing potatoes) and Harry purposefully slashed away at his, nor the reverse' (359). The Catlins say that in (132), Harry 'in a particularly violent episode of sleep-walking can have nonvolitionally...cut his arm with a knife, in a manner sufficiently similar to John's parallel intentional actions that the conjunction with so + Aux is perfectly acceptable' (507). The question is then whether sentences like

(135) *John, intended to commit suicide, cut his arm with a knife, and so did Harry, who accidentally ran into a bread knife while sleepwalking.

are peculiar because they involve an internal self-contradiction. Our own acceptability judgment on (135) is that it merits at best a question mark. Lakoff should reject it, the Catlins accept it, given their respective positions on (132). Our opinion of the other crossed understanding is the same:

(136) *John, accidentally running into a bread knife while sleepwalking, cut his arm with a knife, and so did Harry, who tried to commit suicide.

is quite peculiar.

Fifth, different identity tests give different results. Identity tests using deletion appear to be more stringent than those using so and do so, since the crossed understandings of

(137) John and Harry (both) cut their arms.
(138) John cut his arm, and Harry his leg.

are quite impossible for us.

Sixth, different examples have different properties. Example (129), for which both crossed understandings are peculiar, contrasts with (131). We agree with the Catlins that (134) may report a situation in which 'Bruce may have drunk too much to make his way down a flight of stairs without mishap. Herb wants to demonstrate
how clumsy Bruce looked coming down the stairs and repeats Bruce's performance, this time stumbling on purpose' (506). Thus,

(139) Bruce, the drunken oaf, stumbled coming down the stairs, and so did Herb, who was cruelly making fun of Bruce.

isn't odd. But the other crossed understanding is much more difficult:

(140) ?Bruce, illustrating how he portrayed a drunk on stage, stumbled coming down the stairs, and so did Herb, who was so interested in the demonstration that he wasn't looking where he was going.

is somewhat odd.

The difference between (129) and (131) can be accounted for if (as David Dowty has suggested to us) stumble on purpose is treated as a nonliteral phrase. If the meaning of stumble specifically involves lack of intention, then stumble on purpose ought to be a much odder phrase than cut on purpose, and using it should require some extension of the literal sense of stumble. Certainly it is odder. Its nonliteral character is indicated by the oddness of the unreduced sentence corresponding to (140):

(141) ?Bruce, illustrating how he portrayed a drunk on stage, stumbled coming down the stairs, and Herb, who was so interested in the demonstration that he wasn't looking where he was going, stumbled coming down the stairs.

That is, saying stumble on purpose is a sort of temporary redefinition of stumble; this temporary redefinition shows the same properties as the other exceptional perlocutions discussed in section 2.3.

The difference between deletion rules and pro-formation rules is general and has a plausible explanation. Consider the exceptional perlocutions of section 2.3—hyperbole, for instance. The unreduced sentence

(142) Astorville has about a million people in it,
and Penntown has about a million people in it.

can be understood as two literal statements, two exaggerations, or a literal statement followed by an exaggeration. A pro-formation rule applied to (142) yields a surface sentence with two VPs and having the same three understandings as (142):

(143) Astorville has about a million people in it, and so does Penntown.

A deletion rule applied to (143), however, yields a surface sentence with only one VP:
Astorville and Penntown (each) have about a million people in them.

To obtain the crossed understandings, a hearer must perceive a single occurrence of the VP have about a million people in it as both literal and nonliteral, which is, of course, difficult. This perceptual difficulty occurs in (137) and (138) as well.

The difference between speakers is harder to account for. Perhaps different speakers have somewhat different sets of semantic interpretations; such variation has been attested for other constructions in English. However, this difficulty is overshadowed by the problem of determining exactly what the readings of (129) and (130) are for any particular speaker. If the suggestion above is correct for (130), there are more interpretations than Lakoff and the Catilins give, and identity tests will shed no light on the subject. In any event, the discussion by Lakoff and the Catilins is quite inconclusive, and new sources of syntactic evidence are needed to decide the issues.

Footnotes

*This is a considerable revision and expansion of 'Failing the Ambiguity Test', read before the Linguistic Society of America at Ann Arbor, Michigan, in August 1973. During 1972 and 1973 versions of parts of this paper were presented to several audiences at the Ohio State University, the University of Chicago, the University of Edinburgh, and the Linguistic Institutes (at the University of North Carolina, Chapel Hill, and the University of Michigan). We thank our auditors for their comments and criticisms. We thank especially David Dowty, Orvokki Heinämäki, Christopher Longuet-Higgins, John Lyons, G. K. Pullum, David Stampe, Richmond Thomason, and Robert Wall for their comments on earlier versions. Our work was supported in part by the John Simon Guggenheim Memorial Foundation and in part by a National Science Foundation grant to the Mathematical Social Sciences Board.

1. Most of what follows applies equally to underlying (or deep) syntactic representation and to semantic representation. Consequently, the discussion below uses only one term, semantic representation (also known as semantic structure, (semantic) interpretation, (semantic) reading, semantic description, logical representation, logical form, logical structure, sense and meaning by various writers). When a distinction might be important, there is brief discussion in a note.

2. The term ambiguity is used here only in this sense. For a survey of the variety of applications of the terms ambiguity and vagueness, see Binnick 1970.

3. For the distinction, compare the discussion of ambiguity in Katz 1972:59-63, in response to Weinreich.

4. The following discussion uses the term unspecified throughout.
5. This useful example is due to Dennis Stampe, with the collaboration of Thomas Paton.

6. Sections 1.2.1, 1.2.3, 1.3, and 2.1 are based upon section 2 of Zwicky (to appear).

7. To argue for a difference in semantic representations is also to argue for a difference in underlying syntactic representations, in some (but not all) theories of grammar. If it is possible for a single underlying syntactic representation to correspond to two or more semantic representations, by virtue of rules relating the former to the latter, then an argument for a difference in semantic representations will not necessarily count as an argument for a difference in underlying syntactic representations. There might, for instance, be a rule saying that every underlying syntactic representation of type X corresponds to semantic representations of types X' and X". In theories that countenance such interpretive rules, only syntactic tests are truly decisive.

8. From here on the count noun understanding as a neutral term to cover both those elements of 'meaning' (in a broad sense) that get coded in semantic representations and those that do not. Each understanding corresponds to a class of contexts in which a linguistic expression is appropriate—though, of course, a class of contexts might correspond to several understandings, as in examples like Someone is renting the house (courtesy of Jerry Morgan).

9. The assumption referred to here is the substance principle, discussed in Zwicky 1971.

10. There is more to be said here. A particular systematic lack of specification might involve the product of several distinctions, of course (right-handed younger sister vs. left-handed older sister in (3), for instance). Also, the reference to 'simple' distinctions presumes at least a rough classification, on the part of linguists, of the universe of meaning distinctions.

11. Plausibility of lack of specification is treated by Richman 1959 as the sole (and rather unsatisfactory) criterion of ambiguity:

The dispute over [a general term] T's ambiguity arises presumably because that T denotes can be divided into two (or more) classes, a and b, with defining characteristics φ and ψ respectively. The question of the ambiguity of T turns on the question of whether or not a and b are sub-classes of a larger class, or of whether φ and ψ have some characteristic in common. The obvious answer that a and b are sub-sets of a ∩ b, or that φ and ψ share the characteristic 'φVψ' is not intuitively satisfactory. The question is this, are φ and ψ sufficiently alike (in some unspecifiable way)? If they are, T is unambiguous; if not, not. (91f.)

12. For ease of exposition here, we make the simplifying assumption that understandings can be compared by means of binary semantic features.

13. 'Privative Oppositionen sind solche, bei denen das eine Oppositionsglied durch das Vorhandensein, das andere durch das Nichtvorhandensein eines Merkmals gekennzeichnet sind' (Trubetzkoy 1958:67).
14. Some speakers will have difficulty in accepting (11), because of the repetition of the word dog with two different meanings. Compare the discussion of psychological set in section 1.4.

15. The question mark (here and throughout this paper) indicates an anomaly other than ungrammaticality, in particular internal contradiction or inappropriateness.

16. Implausible differentiae and inconstancy of substitution are the methods used by Alston 1971:36-42 to distinguish different senses of run. Alston’s treatment includes a nice discussion of the way in which these arguments depend upon a systematic development of the semantics of a language, and of how they can nevertheless be used ( provisionally ) in the absence of a fully developed semantics.

17. Thus, That was an excellent idea has only one of the understandings of (23), You wagered it’s cold only one of the understandings of (24), and How come you don’t feed the emu? only one of the understandings of (25). The ambiguity of (26) is supported by reference to other sentences with interrogative form, some of which have paraphrases lacking one of the understandings of (26) (true question vs. ‘requestion’): Is it raining (please)?, Do you suppose it’s raining (*please)?


Many ambiguities will manifest themselves in separate deep grammar representations for the same formal item. The question of what ambiguities should be distinguished in deep grammar is largely a question of the "economics" of the total language description... All we assert by means of [our definition of ambiguity as the 'condition of one formal item satisfying more than one semantic description' (29)] is that they have to be distinguished in semantics.

19. Weinreich 1966: 404 remarks that the typical examples of syntactic ambiguity are of a 'bifocal' kind, e.g. The statistician studies the whole year or He left his car with his girl friend. That is to say, if an insufficiently delicate subcategorization, as in (9), were to be brought to a degree of

\[ S \]
\[ NP \]
\[ VP \]
\[ He \]
\[ studied \]
\[ Determiner \]
\[ Quant \]
\[ N \]
\[ the whole year \]

delicacy at which the ambiguity were to be exhibited, two interconnected revisions would have to be made: Verbs would have to be divided into transitive and intransitive, and NPs would correspondingly have to
be divided into objects, dominated by VP, are adverblike Temporals. The great rarity of unifocal ambiguities in grammar—even in languages with very poor morphology—is itself an interesting comment on the design of language. However, unifocal syntactic ambiguities do exist, as do bifocal semantic ones. Footnote 18 cites She threw a ball and He arranged the music.

20. Unambiguous in the relevant respect. (28) is still ambiguous, since it can be used to report habitual acts of saving birds, and (37) can also describe the (rather unlikely) escorting of a duck into a cell. 21. He also gives an argument from transformational potential (section 1.3.3), based on the fact that the phrase on the boat can be preposed only on one understanding of (36). 22. It may well turn out that the facts surrounding the distribution of prenominal genitive adverbials deserve a transformational account. The restriction may turn out to be one on a rule of grammar which produces the genitives from adverbial source structures. But from the point of view of methodology—which is the main concern of this paper—simply the distribution of these adverbials relative to understandings can be used in sound arguments for the existence of syntactic ambiguity, without commitment to any specific analysis of the relevant phenomena.

23. The discussion of phrasal conjunction in Lakoff and Peters 1969 uses Conjunct Movement in just this way. 24. A similar point is made by Dieterich 1973. 25. This sentence must be read with full stress on the second occurrence of croaked. Destressing repeated occurrences of a lexical item is itself an identity-of-sense transformation. 26. We discuss Lakoff's cases and the response to them by Catlin and Catlin 1972 in an appendix; the phenomena are much more complex than would appear from this exchange. 27. An interesting question which will not be pursued here is why identity tests work as well as they do in distinguishing ambiguity. There is no obvious reason why at least some reductions could not take place blindly and subsequent to the falling together of two source structures. In such cases, the tests would fail to reveal genuine ambiguities. 28. For ease of exposition we disregard the specific understandings of (92)-(94).

29. These examples are to be read without contrastive or emphatic stress. The main stress in (97) falls on Chicago, in (98) on treat. With stress on not and about, respectively, the examples are both ambiguous between suggestion and question. 30. We adopt this terminology as the simplest for our purposes here. In Sadock ms., following L. J. Cohen and others, perlocution is used as a general term encompassing illocutions. 31. There is a way out of this trap. It could be claimed that the ambiguity the identity test leads us to postulate between a literal and a metaphorical intent does not involve the specific
interpretation of the metaphor in question but only the fact that the sentence is to be taken metaphorically. That is, one might claim that one of the literal senses of example (111) is accurately captured by a paraphrase such as Metaphorically speaking, **Irving has jumped into a pit of alligators.**

32. Compare Austin 1961:45--
When we make an assertion such as 'There is a goldfinch in the garden' or 'He is angry', there is a sense in which we imply that we are sure of it or know it ('But I took it you knew', said reproachfully), though what we imply, in a similar sense and more strictly, is only that we believe it. Searle 1969:57 treats sincerity as one of the 'normal input and output conditions' on utterances.

33. By R. Lakoff in oral presentations.

34. For English see Morgan 1972. The Russian examples were pointed out to us by William Daniels.

35. Dovty's arguments do not carry over directly to (130), since they concern the understandings of accomplishment verbs with by-phrases.
References

Alston, William P. 1971. How does one tell whether a word has one, several or many senses? In Steinberg and Jakobovits 1971: 35-47.


CLS x = Papers from the xth regional meeting, Chicago Linguistic Society. Department of Linguistics, University of Chicago.


Comparative Simplification
Michael L. Geis

In an unpublished paper (Geis ms.), I argued that there is a systematic transformational relationship between sentences like (1) and (2) that contain adverbial occurrences of earlier than and later than and sentences like (3) and (4) that contain adjectival occurrences of these comparatives.

(1) John left earlier than Sue did.
(2) John arrived later than Sue did.
(3) John left at a time that was earlier than the time at which Sue left.
(4) John arrived at a time that was later than the time at which Sue arrived.

I further argued that the rule that relates (1) and (2) to (3) and (4), respectively—a simplification (SIMP) rule that deletes the underlined elements of (3) and (4)—must have a global derivational constraint imposed on it. The results of this paper were briefly presented by Lakoff 1970 in support of his contention that global constraints are required to account for a wide range of phenomena.

Baker and Erame 1972 have since argued that there is a simpler description of sentences like (1) and (2) than that suggested above, one that does not require postulation of a global constraint. In this paper, I shall present a strengthened version of my original argument, as well as provide additional evidence in support of it, and then go on to point out some major difficulties with the analysis provided by Baker and Erame.

I.

Sentences like (1) and (2) which contain adverbial occurrences of earlier than and later than (adverbial time comparatives or AdvTC) differ from sentences like (3) and (4) which contain adjectival occurrences of these comparatives (adjectival time comparatives or AdjTC) in that AdvTC are unacceptable if their main and subordinate clauses have different verbs, while AdjTC are acceptable. Sentences (5)-(8) illustrate this difference.

(5) *John left earlier than the volcano erupted.
(6) *John arrived later than Sue's party ended.
(7) John left at a time that was earlier than the time at which the volcano erupted.
(8) John arrived at a time that was later than the 
time at which Sue’s party ended.

These data might appear at first to be evidence against the 
hypothesis that there is a systematic transformational relationship 
between AdvTC and AdjTC. However, I shall demonstrate that a 
proper formulation of the constraint responsible for blocking 
derivations of AdvTC like (5) and (6) actually requires that AdvTC 
be derived from AdjTC.

To account for the fact that (7) and (8) are unacceptable, we 
might, as a first approximation, impose constraint A on derivations 
of AdvTC.

(A) The main and subordinate clauses of any AdvTC 
must each contain an occurrence of the same 
verb.

Note, however, that sentences (1) and (2) do not satisfy A, but are 
nevertheless acceptable. This problem can easily be resolved, of 
course, if we assume that (1) and (2) are derived from (9) and (10), 
respectively, by an application of VP deletion and assume that 
constraint A applies prior to the application of this deletion rule.

(9) John left earlier than Sue left.
(10) John arrived later than Sue arrived.

Although constraint A will account for the simplest cases of 
AdvTC, it is clearly too weak to account for certain more complex 
cases. Note, for example, that (11)-(14) satisfy A but are 
unacceptable.

(11) *John left earlier than the girl who left died.
(12) *John left later than we made the claim that he 
would leave.
(13) *John left later than Sue suggested that for 
Harry to leave would be a crime.
(14) *John left earlier than we knew that Bill left.

The comparative clauses of (11)-(14) do not have a great deal in 
common: the subordinate occurrence of leave is in a nominal 
complement in (11), a relative clause in (12), a sentential subject 
in (13), and the object complement of the factive verb know in (14). 
However, there is one property that they share, namely that these 
subordinate occurrences of leave—the only verb in the comparative 
clauses of these sentences capable of satisfying constraint A—are 
in constructions that constituents cannot be moved out of.

Let us consider example (12) in some detail. Pairs like (15) 
and (16) are very similar in meaning, but differ syntactically in 
the important respect that the that-clause of (15) is within a 
complex NP (cf. Ross 1967), while the that-clause of (16) is not.
(15) We claimed that John would leave.
(16) We made the claim that John would leave.

One consequence of this difference is that constituents of the that-clause of (15) can be moved out of this clause while constituents of the that-clause of (16) cannot. In this light, note that (17) is ambiguous while (18) is not.

(17) When did we claim that John would leave?
(18) When did we make the claim that John would leave?

In (17) when can be interpreted as modifying either claim or leave, for the time adverbiai underlying when can have been moved to initial position from either clause of this sentence. In (18), on the other hand, when can be interpreted as modifying made the claim, but not leave, for Ross' complex NF constraint (CNPC) would block the movement of when (or, rather, the constituent underlying when) out of the clause containing leave, but not out of the clause containing made the claim.

Now compare the unacceptable sentence (12) with (19).

(19) John left later than we claimed he would leave.

In (19), the subordinate (deleted) occurrence of leave—the verb that satisfies constraint A—is not within a complex NF and the sentence is acceptable, but in (12), as we noted above, the subordinate occurrence of leave is within a complex NF and the sentence is unacceptable. This important difference between (12) and (19) can be exploited if we assume that AdvTC are derived from AdjTC, for in the derivation of AdjTC, a time adverbiai (cf. at which in (20) and (21)) is moved to clause-initial position.

(20) John left at a time that was later than the time at which we made the claim that he would leave.
(21) John left at a time that was later than the time at which we claimed he would leave.

Note that (20) is unacceptable if at which is interpreted as modifying leave, the only verb in the unacceptable AdvTC (12) that satisfies constraint A. On the other hand, (21) is acceptable if at which is interpreted as modifying leave, the only verb in the acceptable AdvTC (19) that satisfies A. Thus, we may conclude that a given AdvTC will be acceptable if, in the derivation of its corresponding AdjTC, at which can be moved out of the clause containing the verb that satisfies A.

The above correlation between AdvTC and AdjTC can be captured if we assume that AdvTC are derived from AdjTC by SIMP and if we revise A along the following lines:

(B) SIMP may apply to a given AdjTC if and only if there exist a verb $V_i$ in the main clause and a verb $V_j$ in the subordinate clause such that
(a) \( V_i = V_j \) and (b) at which originated in the same clause in underlying structure as \( V_j \).

Let us briefly see how \( B \) works. In AdjTC (20), we do have an occurrence of the same verb in the main and subordinate clause. Thus \( B(a) \) is satisfied. However, the subordinate occurrence of leave in (20) cannot satisfy \( B(b) \), thanks to the CNPC. Thus, (12) cannot be derived from (20). In the case of AdjTC (21) we have verbs which satisfy both \( B(a) \) and (b). Thus (19) can be derived from (21).

The need to state \( B \) as a global derivational constraint is clear. We must impose constraint \( B \) after at which has been moved to clause-initial position in the derivation of AdjTC, if the CNPC is to do its work. On the other hand, after at which has moved to the front of a given AdjTC, it is impossible to determine at which came from unless we allow \( B \) to look back at some earlier stage of the derivation of that AdjTC. I have chosen to have \( B \) look back to underlying structure, but I have no compelling argument that it must look back that far. However, it is certain that \( B \) must look back to a stage in the derivation of AdjTC that precedes the movement of at which to initial position.

Returning to (11)-(14), we note that the deviance of (11), like (12), is due to the CNPC. The AdjTC corresponding to (11), namely (22), is unacceptable if at which is interpreted as modifying leave:

(22) John left at a time that was earlier than the time at which the girl who left died.

A somewhat different explanation is required for (13) than that given for (11) and (12), since Ross' sentential subject constraint (SSC) is involved. The AdjTC corresponding to (13), namely (23), is acceptable, but not if at which is interpreted as modifying leave:

(23) John left at a time that was later than the time at which Sue suggested that for Harry to leave would be a crime.

In this case, leave occurs within the sentential subject of would be a crime and the SSC blocks movement of at which out of the clause containing leave, the only verb capable of satisfying \( B(b) \). Still another explanation is required for (14), for its unacceptability is due to the fact that constituents cannot be moved out of the complements of factive verbs. Observe that the AdjTC corresponding to (14), namely (24), is unacceptable if at which is interpreted as modifying leave.

(24) *John left at a time that was earlier than the time at which we knew that Bill left.

(Sentence (24) is also unacceptable if at which is interpreted as modifying know, for reasons of no interest to us here.)
Although constraint B accounts for a wider class of \textit{AdvTC} than does A, it is also too weak. Observe that (25) and (26) satisfy B, but are unacceptable nevertheless.

(25) *The boy who left died earlier than Sue left.
(26) *That Harry left upset me later than Sue left.

The explanation of the deviance of (25) and (26) is quite straightforward. Note that (27) and (28), the \textit{AdvTC} corresponding to (25) and (26), respectively, are acceptable, but not if at a time is interpreted as modifying the superordinate occurrences of \textit{leave} in these sentences.

(27) The boy who left died at a time that was earlier than the time at which Sue left.
(28) That Harry left upset me at a time that was later than the time at which Sue left.

In order to account for (25) and (26), we need only revise B along the lines of C:

(C) SIMP may apply to a given \textit{AdvTC} if and only if there exist a verb \( V_i \) in the main clause and a verb \( V_j \) in the subordinate clause such that (a) \( V_i = V_j \), (b) \textit{at which} originated in the same clause in underlying structure as \( V_i \), and (c) \textit{at a time} originated in the same clause in underlying structure as \( V_i \).

Constraint C(c) need not, of course, be formulated as a global constraint, but since C(b) must be so formulated, there is no harm in formulating C(c) in a similar way.

The focus of the above argument has been on a proper formulation of constraint A. However, we must not overlook the fact that the proper formulation of this constraint appears to require that we assume that \textit{AdvTC} are derived from \textit{AdvTC}, for only on this assumption can Ross' constraints on movement rules be exploited. In what follows, I provide additional evidence for this analysis.

Observe that (29) is self-contradictory.

(29) *John was born earlier than he was \textit{(born)}.

Not surprisingly, the \textit{AdvTC} corresponding to (29), namely (30), is also self-contradictory.

(30) *John was born at a time that was earlier than the time at which he was born.

The presence of the time adverbials in (30) is crucial to an explanation of the fact that it is self-contradictory. We can factor (30) into the three propositions of (31).
(31) a. John was born at \( t_1 \).
b. John was born at \( t_j \).
c. \( t_1 \) was earlier than \( t_j \).

However, since John can only have been born once, \( t_1 \) and \( t_j \) must be
the same time, but \( t_j \) cannot both be earlier than \( t_j \) and the same
as \( t_1 \).

Since (29) contains no time adverbials, we cannot account for
(29) in the way that we accounted for (30)—unless, of course, we
derive AdvTC from AdjTC. But it would not be rational to provide
different explanations for the fact that (29) and (30) are self-
contradictory. Consideration of a more complicated case will drive
this point home.

As we noted earlier, if the verb in the comparative clause of
any AdvTC which satisfies C(a) is in the complement of a factive
verb, the AdvTC will be unacceptable. This is the case with (32).

(32) *John was born earlier than we knew he was.

Sentence (32) not only violates constraint C, it, like (29) and (30),
is also self-contradictory, a property not normally associated with
violations of C. Now, suppose we were to claim that what is wrong
with (29) is that it asserts that the state of affairs 'John was
born' obtained earlier than the state of affairs 'John was born'.
Such an explanation is reasonable and does not require reference to
the presence of time adverbials. However, this ploy will not work
for (32), since there is no conflict in saying that the state of
affairs 'John was born' obtained earlier than the state of affairs
'we knew that John was born'. On the other hand, if we factor (32)
into the three propositions of (33), i.e. if we derive AdvTC from
AdjTC, we can account for the unacceptability of (32) in a straight-
forward way.

(33) a. John was born at \( t_1 \).
b. We knew that John was born at \( t_1 \).
c. \( t_1 \) was earlier than \( t_1 \).

Proposition (33c) is, of course, self-contradictory. It would
therefore appear that the hypothesis that time adverbials do exist
in the underlying structure of AdvTC is correct.

Let us consider another, somewhat different, phenomenon. Observe
that (34) is self-contradictory.

(34) *John left later than we will.

We might attempt to account for (34) with a constraint to the effect
that the main and subordinate clauses of AdvTC must agree in tense.
However, the problem is somewhat more complicated than this. Notice
that the highest verb in the comparative clause of (35) disagrees
in tense with the verb in the main clause, but the sentence is
nevertheless acceptable.
(35) John left later than he says he did.

What appears to be going on in the case of (34) and (35) is that the verbs that satisfy constraint C must agree in tense. This description will, I think, work. However, it is not difficult to see that it would be a mistake to associate this tense harmony phenomenon with constraint C.

Observe that (36), like (34), is unacceptable, but that (37), like (35), is acceptable.

(36) *John left at the time when we will leave.
(37) John left at the time when he says he did.

In a previous study (Geis 1970), I showed, on the basis of data like (36) and (37), that sentences containing temporal relative clauses uniformly exhibit tense harmony and argued that this fact can best be accounted for by assuming (a) that the head noun phrases of time adverbials like those that occur in (36) and (37) have temporal reference features assigned to them—let us say either [+past] or [-past]—which are consistent with the auxiliaries of the clauses they occur in, and (b) that the identity condition on relativization is sensitive to these features. Given these two assumptions, we can account for the fact that (36) is unacceptable by noting that the head noun phrases of at a time and the adverbial underlying at which must have the temporal reference features [+past] and [-past], respectively, and, thus, that the identity condition on relativization cannot be satisfied. Sentence (37), on the other hand, is acceptable, but only on a derivation in which where originates in the clause containing did.

The AdjTC corresponding to (34) and (35), namely (38) and (39), respectively, also exhibit tense harmony.

(38) *John left at a time that was later than the time at which we will leave.
(39) John left at a time that was later than the time at which he says that he left.

If the principles used in the description of (36) and (37) are extended to (38) and (39), it will follow that the subject of later than in (38) must be marked [+past] and its object [-past], an empirical impossibility, but the subject and object of later than in (39) must both be marked [+past] (on the derivation of (39) in which at which originates in the same clause as left), which is empirically possible.

It should be clear that if we derive AdvTC from AdjTC, we can account for the fact that (34) is unacceptable and (35) acceptable in a straightforward fashion, for AdvTC and AdjTC pattern alike. Were we not to relate AdvTC to AdjTC, on the other hand, we would be forced to conclude that the fact that AdvTC and AdjTC function alike with respect to the phenomenon of tense harmony is an accident. This is, I think, an untenable conclusion.
My account of the phenomenon of tense harmony may not, of
course, prove to be completely satisfactory. However, it is very
important to note that the facts that comprise the tense harmony
phenomenon pertain to temporal relative clauses alone. As (40)
illustrates, tense harmony does not obtain in the case of locational
relative clauses, and as (41) suggests, it does not typically obtain
for comparatives.

(40) John lives at the place where Joe once lived.
(41) John runs faster now than he ever did before.

Thus, if we do not derive AdvTC from AdjTC, we will miss an important
linguistic generalization.

II.

In a reply to Lakoff 1970, a paper that discussed a number of
global derivational constraints, including the one presented
above, Baker and Brame 1972 argue that AdvTC can be accounted for
without imposing a global constraint on their derivations. In this
section, I examine their counter-proposal and show it to be
unsatisfactory on a number of grounds.

According to Baker and Brame, AdvTC (42) is derived from an
underlying structure something like (43).

(42) John left earlier than Bill left.
(43) John left [AP [Deg more than [S Bill left
    that early]] S] [Deg early] AP

Several grammatical processes are required in order to map (42) into
(43), including in particular the deletion of the subordinate
occurrence of that early. Baker and Brame agree that a constraint
like A above must be imposed on the derivation of (42), but they do
not state it. I presume that it should be formalized along the
lines of D.

(D) For comparative formation to apply (including
the deletion of that early from the subordinate
clause), there must exist verbs \( v_1 \) and \( v_4 \) in
the main and subordinate clauses respectively
such that (a) \( v_1 = v_4 \), (b) \( v_1 \) and early are
clause mates, and (c) \( v_1 \) and that early are
clause mates.

Thus, the two occurrences of early in (43) play the same sort of
role as the time adverbials referred to in constraint C.

Let us turn now to consider (44), one of the data that gave
rise to the global constraint of the previous section.

(44) *John left earlier than the girl who left died.

According to Baker and Brame's analysis, (44) would have to be
derived from (45).
(45) John left [AP [Deg more than [S [NP the girl [S who left that early] NP died] NP early] AP

And they say, 'We can account for the ill-formedness of the sentences resulting from the application of Comparative formation by assuming, as does Ross (1967:41ff.) that this rule, like the very similar rule that forms relative clauses, is subject to the Complex NP constraint' (71). Thus, according to Baker and Brame, (44) cannot be derived from (45) because the CNPC will, if extended to comparative formation (a deletion rule), block the deletion of that early from (45). Examples like (12)-(14) would be dealt with by a similar extension of other constraints on movement rules to the Baker and Brame rule of comparative formation.

Baker and Brame's assumption that their rule of comparative formation is subject to the CNPC is absolutely crucial to the viability of their alternative analysis. As we shall see below, there is very good reason to doubt the correctness of this assumption. First, however, I would like to draw attention to certain other defects.

Baker and Brame claim that their analysis is simpler than the analysis suggested above. This claim could scarcely be more facile. In the first place, note that the analysis of section I is semantically as well as syntactically motivated, in that it correctly predicts that a given AdvTC will be semantically equivalent to its corresponding AdjTC. This semantic fact must be accounted for, presumably by mapping AdvTC and corresponding AdjTC into semantically equivalent, if not identical, semantic representations. Baker and Brame do not indicate how they would propose to account for the semantic equivalence between AdvTC and AdjTC and, until they do, it will be impossible to determine if their analysis is simpler than the one presented in section I.

We noted above that sentences like (46) and (47) are self-contradictory.

(46) *John was born earlier than he was.
(47) *John was born earlier than we knew he was.

Within the framework of section I, (46) and (47) could be accounted for without difficulty. However, it is by no means clear that they can be accounted for at all within the framework provided by Baker and Brame. We might stipulate that John was born early cannot be both subject and object of more than, but this ploy cannot, as far as I can see, be extended to account for the fact that (47) is self-contradictory.

The phenomenon of tense harmony could be accounted for within the Baker and Brame framework by including within constraint D a statement to the effect that the tenses of the verbs that satisfy D(a) must be compatible. However, such a move would entail that we miss the generalization that the phenomenon of tense harmony is associated with temporal relative clauses. Since the Baker and Brame proposal and the one advanced in section I both appear to work, we must choose the one that is superior on explanatory grounds, i.e. the proposal of section I.
Baker and Brame note that AdvTC containing sooner than are also subject to the like-verb constraint, and cite data like (48) and (49) in support of this claim.

(48) John left sooner than Bill did.
(49) *John left sooner than Sam slugged Pete.

They go on to point out that (48) creates a problem for the view that AdvTC are derived from AdjTC for (50), the AdjTC corresponding to (48), is ungrammatical:

(50) *John left at a time that was sooner than the time at which Bill left.

Baker and Brame correctly note that this problem does not arise for their analysis. However, they fail to note that (48) presents an even graver problem for their analysis than for that of section I, for according to their analysis, the main and subordinate clauses of (48) would have as their sources the semantically deviant (51a) and (51b), respectively.

(51) a. *John left soon.
   b. *Bill left that soon.

A crucial assumption of Baker and Brame's analysis is that their rule of comparative formation, the rule that deletes that early from structures like (43), is subject to Ross' constraints (as well as those discovered since) on movement or chopping rules, i.e. rules that move constituents over essential variables. Ross based his suggestion that comparative formation is subject to his constraints on chopping rules on data like (52) and (53):

(52) John is taller than we claimed he is.
(53) *John is taller than we made the claim that he is.

In (52), the subordinate (deleted) occurrence of tall is inside a complex NP and, according to Ross, if we were to impose the CNPC on this deletion rule, we could account for the unacceptability of this sentence. Similar data appeared to support the view that such deletions are subject to his other chopping constraints.

Let us now attempt to determine whether Ross' constraints on chopping rules do, in fact, apply to the deletion rule in question. First, note that (54), an admitted stylistic barbarity, is more acceptable than (55).

(54) ?John is taller than we claimed he is wide.
(55) *John is taller than we made the claim that he is wide.

There has been no deletion of the subordinate adjective in the case of (54) and (55), and thus we cannot appeal to any constraint on
deletion rules, including Ross’ constraints on chopping rules, to
account for the difference in the degree of acceptability of (54)
and (55).

There are more convincing examples. Consider

(56) The room turned out to be a little wider than
      we thought it was long.
(57) *The room turned out to be a little wider than we
      knew it was long.

In (57), but not (56), long occurs in a construction that constituents
cannot be moved out of. However, note that extending to the deletion
associated with comparative formation the constraint which prohibits
movement of constituents out of factive clauses will not enable us
to account for the fact that (56) is acceptable and (57) unacceptable,
for long is deleted from neither of these sentences.

Robert Freund has suggested to me an alternative interpretation
of the facts which led Ross to think that the rule that deletes the
subordinate occurrences of compared adjectives is subject to his
chopping constraints. Freund noted that if we assume a comparative
like (58) is derived from the structure underlying (59), we can
account for all of the data that led Ross to think that comparative
formation is subject to his chopping constraints.

(58) John is taller than Bill.
(59) John is tall to a degree that is greater than
      the degree to which Bill is tall.

Observe that the adverbial underlying to which in (59) moves in the
derivation of this sentence. As a result, if we were to adopt such
an analysis, Ross’ chopping constraints would necessarily come into
play in the derivation of comparatives. In this light compare
(60) and (61) with (56) and (57) respectively.

(60) The room turned out to be wide to a degree that
      was a little greater than the degree to which
      we thought it was long.
(61) *The room turned out to be wide to a degree that
      was a little greater than the degree to which
      we knew it was long.

Since (60) and (61) are very complex, it is difficult to make very
good judgments concerning them. However, note that the constraint
that prohibits movement of constituents out of the complements of
factive verbs will block derivation of (61), but will not block
derivation of (60). This analysis thus correctly predicts that (56)
is acceptable but (57) is not. Thus, it would appear that Baker
and Braine’s suggestion that their rule of comparative formation
is subject to Ross’ chopping constraints is not as well motivated
as either they or Ross have imagined.

I would be less than honest if I failed to point out that
AdvTC do not fit very nicely into the framework of this alternative
analysis of comparatives. Note how cumbersome (62) is.

(62) *John left at a time that was early to a degree that was greater than the degree to which Sue’s leaving was early.

A major difficulty with (62) is that, to the degree to which it is interpretable at all, early is understood in its absolute, rather than its relative, sense. However, a close look at underlying structures like (43) will reveal that the Baker and Brame analysis is infected by the same problem.

References

On the Global Nature of the Sentential Subject Constraint

Ronald W. Noold

When the island constraints presented in Ross 1967 were first formulated, they were regarded as transformational in nature. Recent work indicates, however, that (at least) some of them are derivational in nature: they do not constrain transformations from applying, but they mark certain derivations as ill-formed. Ross 1969 and Koutsoudas 1973a present evidence that the Complex Noun Phrase Constraint is a derivational constraint. In this paper I present evidence that the Sentential Subject Constraint is a global derivational constraint, which is stated at the level of surface structure, but makes reference to earlier stages of a derivation.1

The evidence depends upon prior assumptions about the nature of rule ordering. There is now an extensive literature which indicates that all rules are unordered—i.e. all constraints on the order of application are predicted by language-universal principles.2 I find the evidence in favor of the Unordered Rules Hypothesis convincing, and will adopt it for the purposes of this paper. As a preliminary to further discussion, I present a summary of the basic principles of the Unordered Rule Hypothesis. These appear in Koutsoudas 1973b.

(1) a. All restrictions on the application of rules are determined by universal principles (and hence there are no language-specific ordering restrictions between the rules of a grammar).

b. An obligatory rule must apply whenever its structural description is met, unless its application is precluded by some universal principle. It follows from this requirement that rules will apply simultaneously if possible; otherwise they will apply sequentially.

c. All rules are scanned for applicability to each new representation in a derivation.

d. A derivation is terminated when no obligatory rules are applicable.

The relation between rule ordering and island constraints should be kept clearly in mind. Island constraints are defined on certain structural configurations, e.g. sentential subjects and complex noun phrases. There are some transformations which destroy the structures defining islands. For example, Extrapolation from NP
and Relative Clause Reduction destroy complex noun phrases. As demonstrated by Koutsoudas 1973a, when complex noun phrases are destroyed, they maintain their integrity as islands: no elements may be moved out of them. This restriction may be expressed in global terms by saying that nothing may move out of a constituent if that constituent was under the domination of a complex NP node earlier in the derivation. In this case, once some node is an island, it remains an island.

Now let us consider the other logical possibility with respect to the destruction of islands. It could be the case that some node is an island, that the island is destroyed by the application of some rule, and that elements may then be moved out of the former island. Using extrinsic ordering, we could order all movement rules to apply after the rule (or rules) which could destroy the island in question. But using the Unordered Rules Hypothesis, some other approach must be taken.

The Sentential Subject constraint presents an example of just the sort that I have outlined in the paragraph immediately above. A sentential subject may be destroyed by the application of Extraposition, as shown in (2).

\[(2)\]
\[
\begin{align*}
\text{a. } & \text{That John read the book is probable.} \\
\text{b. } & \text{It is probable that John read the book.}
\end{align*}
\]

When a sentential subject is destroyed, elements may be extracted from it. Compare (3) and (4).

\[(3)\]
\[
\begin{align*}
\text{a. } & \text{What is that John read probable?} \\
\text{b. } & \text{There is the book which that John read is probable.}
\end{align*}
\]

\[(4)\]
\[
\begin{align*}
\text{a. } & \text{What is it probable that John read?} \\
\text{b. } & \text{There is the book which it is probable that John read.}
\end{align*}
\]

Even if we were to use extrinsic ordering, we would face a serious problem with respect to (2)-(4). Each extrinsic ordering statement is an ad hoc statement for a particular pair of rules, and does not generalize to other pairs. Given that we must order Wh Q Movement after Extraposition (to account for 4a), there is no reason why we should order Wh Rel Movement after Extraposition (to account for 4b). Any extrinsic ordering of one rule before another carries with it implicitly the possibility that the order could be opposite to that actually found. It would then be completely accidental that all movement rules followed the rule(s) which could destroy a sentential subject. No explanation could be offered for the fact that all movement rules can operate on elements inside the former island.

Of course, adopting the Unordered Rules Hypothesis, we must find some other explanation for (2)-(4). I shall now sketch an alternative explanation wherein the Sentential Subject Constraint is viewed as a global constraint, stated at the level of surface structure, but making reference to earlier stages in a derivation.
I shall argue that the constraint is to be stated in the following way.

(5) The Sentential Subject Constraint.
Given a phrase marker containing a clause $S'$ and a constituent $C'$, the derivation of that phrase marker is ill-formed if:

a. in surface structure $S'$ is a sentential subject,
b. $C'$ is not under the domination of $S'$ in surface structure,
c. in semantic structure, $C'$ is under the domination of $S'$.

The sentences in (3) illustrate the fact that the presence of a sentential subject in surface structure is sufficient to block movement out of the subject clause. The sentences in (4) show that the presence of a sentential subject in deep structure is not sufficient to block movement, for (4a, b) are derived from structures in which the constituents that have been moved were under the domination of a sentential subject. Furthermore, there are rules which can create sentential subjects, such as Passive. The clauses which are moved into subject position by this rule are islands:

(6) a. Bob did not know that John had read the book.
b. That John had read the book was not known by Bob.
c. *What was that John had read not known by Bob?
d. *That is the book which that John had read was not known by Bob.

The above facts indicate that the presence of a sentential subject in surface structure is crucial.

Given the Unordered Rules Hypothesis, there is no restriction against applying movement rules to a clause before that clause has become a sentential subject. For example, consider the deep structure of (6b), which is given in (7).

(7) 

```
S_1
  /\  /
 /   \
NP   VP
  /\   /
 /   \
that V      
   /\      /
   /   \
  NP is     
     /\    /
    /   \
   NP the book
   /\ /
 /   \
s_2 VP
     /
    NP
      /
    Bob did not know NP
      /\ /
     /   \\s_3
      that John had read the book
```
There is nothing to block Wh Rel Movement from applying to move the book out of S3. If we left things at this stage, the result would be:

(8) That is the book which Bob did not know that John had read.

But there is no restriction against going on to apply Passive to S2 in (7) after Wh Rel Movement has applied, the result of which is (6d). There would be nothing to block (6d), and it should in fact be generable by a grammar which contains neither extrinsic ordering nor constraint (5). I claim that (6c, d) are ruled out because they violate the global constraint (5). I have already shown that the presence of a sentential subject in surface structure is crucial, so the constraint must be stated at that level. Furthermore, in the absence of extrinsic rule ordering constraints we have to know whether C' was under the domination of S' in semantic structure. Therefore, we have to make reference to earlier stages of a derivation.

There are alternatives to the formulation of the constraint as presented in (5), but they are less than optimal. To begin with, (3a, b) are acceptable because Extraposition has destroyed the sentential subject. We might try to make Extraposition obligatory, along the lines presented in (9).

(9) Extraposition is obligatory if:
   a. there is a sentential subject, S', and some other constituent C' outside the domination of S';
   b. C' was under the domination of S' earlier in the derivation.

The problems with (9) are twofold. First, making rules obligatory on the basis of derivational history is an extension of the power of global grammars. Constraints typically prevent the application of rules in certain cases. The application of a rule is determined by the structural description of the rule, and the optional or obligatory nature of the rule. If we can eliminate conditions which require that an optional rule become obligatory on the basis of derivational history, then we have limited the power of global rules. More damaging is the fact that Raising can destroy sentential subjects, as demonstrated in (10).

(10) a. g([That John will read the book]g) is certain.
   b. John is certain to read the book.

Here the subject of S' has been raised into the higher sentence, and the remainder of S' has been shifted to the end of the higher sentence. If a sentential subject has undergone Raising, constituents may freely move out of it. Compare (11) with (12), where Raising has applied to the sentences in (12).
(11) a. *What is that John will read certain?  
(Wh Q Movement)

b. *That's the book which that John will read is certain.  (Wh Rel Movement)

c. *It's the book that John will read is certain. (Cleft Formation)

d. *What that John will read is certain is the book. (Pseudo Cleft Formation)

(12) a. What is John certain to read?

b. That's the book which John is certain to read.

c. It's the book that John is certain to read.

d. What John is certain to read is the book.

If we chose (9), we would have to make Raising obligatory under the same conditions given for Extraposition. In fact, we would have to repeat the constraint expressed by (9) for any rule which could destroy a sentential subject. But this repetition leaves unexplained why the constraint should apply to rules which destroy sentential subjects (based on the conditions (9a, b)) which will prevent the conditions expressed in (5) from existing. Repeating conditions (9a, b) for a set of rules does not express the connection which holds between the rules in the set. The crucial factor is whether or not a sentential subject exists in surface structure, something not expressed by (9), where it is derivative that the rule made obligatory happens to destroy a sentential subject. An outcome of this discussion is that it may be possible to add the following restriction to the class of global grammars:

(13) No rule may be made obligatory on the basis of derivational history.

Another alternative to (5) is the constraint given in (14).

(14) Given a clause S' and a constituent C' such that
a. C' is under the domination of S' and
b. S' will appear as a sentential subject in surface structure, then C' may not be moved out of S'.

The underlined restriction in (14) is necessary because of cases like (4), where a sentential subject is destroyed. It appears that (14) merely states constraint (5) in inverse terms. In (14) we are blocking a rule, but on the basis of 'future history'. But there is a conceptual flaw in (14). The deep structure of (15a, b) is as in (16).

(15) a. *That is the dress which that Alice would buy was suspected by her husband.

b. That is the dress which it was suspected by her husband that Alice would buy.
Constraint (14) claims that nothing may be moved out of a clause that will appear as a sentential subject in surface structure. (15a) is blocked by this constraint, while (15b) is not. But consider more closely the case in which Wh Rel Movement is blocked from applying to (16) because Passive will later create a sentential subject. If we did not apply Passive, then the conditions for blocking Wh Rel Movement would not exist, and we should not have blocked Wh Rel Movement. In essence, Passive becomes obligatory on the basis of having blocked Wh Rel Movement. We would have to add another constraint making certain rules obligatory (just those which create sentential subjects) on the basis of constraint (14). In other words, we have to block Wh Rel Movement from applying to (16) because Passive must apply, where Passive must apply just because we blocked Wh Rel Movement from applying. The circularity, redundancy, and lack of insight of this analysis is obvious. I conclude that the proper way to express the necessary constraint is as in (5). The downfall of (14) leads me to suspect that another constraint may be added to the theory of global grammar:

(17) No rule may be blocked on the basis of the future history of a derivation.

I have shown above that the Sentential Subject Constraint is global in nature. It should be noted that there is a surface structure constraint similar in nature to the Sentential Subject Constraint. In (18) and (19), the violation could not result from moving something out of a sentential subject.

(16) a. *What is that John did surprising?
   b. What is it surprising that John did?
(19) a. *I went out with a girl who that John showed up pleased.
   b. I went out with a girl who it pleased that John showed up.

To account for the ungrammaticality of (16a) and (19a) Ross (1967:251)
proposed the following constraint:

(20) The S-Internal NP Clause Constraint (SINPC\textsuperscript{2}).
Grammatical sentences containing an internal NP which exhaustively dominates S are unacceptable, unless the main verb of that S is a gerund.

It might be claimed that all sentences which are putative violations of the SSC are actually violations of the SINPC\textsuperscript{2}. But the following considerations indicate that the SSC is necessary. The SINPC\textsuperscript{2} refers to internal NP: for example, Subject-Aux Inversion in (18a) has caused the subject NP to become internal. Notice that in (22), the deep structure of (21), the sentential subject S\textsubscript{3} has material to both the left and right, but it is not clause-internal since it is the leftmost constituent of S\textsubscript{2}.

(21) We believe that Harry read the book is surprising.

(22)

```
NP  VP
  |   |
we  V  NP
  |
believe S\textsubscript{2}
  |
NP
  | S\textsubscript{3} VP
  | is surprising
```

Now notice that in (24), the deep structure of (23), NP' is not clause-internal.

(23) a. *Mary asked what John believes that Harry read is probable.
   b. Mary asked what John believes it is probable that Harry read.
But in the structure derived from the application of Wh Q Movement (illustrated in (25)), NP' is not clause-internal either.

Since Wh Q Movement has an essential variable in its structural description it may move the wh-element to the left over any number of S boundaries. Therefore the wh-element can move over the S which dominates the NP complement that it originated in. By virtue of this property of Wh Q Movement, NP' in (25) does not appear as clause-internal in surface structure. It would appear that (23a) must be blocked because something has moved out of a sentential subject, and that the Sentential Subject Constraint is necessary. Given that the constraint is needed in the grammar of English, the evidence that I have given here indicates that it is global in nature.
Notes

1. The Sentential Subject Constraint was defined by Ross 1967:134 as follows:
   No element dominated by an S may be moved out of that S if that node S is dominated by an NP which itself is immediately dominated by S.


3. When I say that a transformation 'destroys' a sentential subject I mean that it alters the phrase marker so that the former sentential subject is no longer in subject position. Likewise, when I say that a transformation 'creates' a sentential subject, I mean that the rule moves a sentence into subject position.

4. It would be possible to order Wh Rel Movement after Passive, so that a sentential subject would be present at the point that Wh Rel Movement applies. But in the absence of extrinsic ordering, this option must be rejected.

5. Ross 1967:134-3 gives two other pieces of evidence that the SSC should be included in the grammar of English.

References

On Suggesting*

Patricia Lee

It has been suggested by Heringer 1971 that speech acts can be performed indirectly by reference to certain participant-based felicity conditions on those speech acts. Heringer's proposal is that some conditions on the speaker's psychological state are essential to the performance of particular illocutionary acts, and that such essential conditions can be either asserted or questioned to perform those acts indirectly. Suggestions provide an excellent opportunity to test this hypothesis because there is a great variety of ways to perform indirect suggestions. I will attempt to show that a large number of such indirect illocutionary suggestions can, as Heringer predicted, be derived from certain essential felicity conditions on direct suggestions.

Before going into these conditions, I would like to make a few comments on direct suggestions. They are a type of speech act which can be called impositive, to use Green's term; that is, like commands, requests, warnings and pleas, they are attempts to get the hearer to do something. Suggestions differ from other impositives in the relation that holds between the speaker and the hearer; for a command to be felicitous, the speaker must be in some position of authority over the hearer, while for requests and pleas, the opposite is necessary—that is, the speaker must be at least assuming a position inferior to that of the hearer. This is basically the same thing as saying that the speaker is showing deference toward the hearer. Suggestions, on the other hand, have no such requirement. For conversations in which suggestions occur, the speaker and hearer have equal status.

Suggestions also differ from most other impositives in that, for the most part, what the speaker is trying to get the hearer to do is to consider or think about a particular proposition. In other words, the perlocutionary effect of suggestions is to make the hearer think about the proposition being suggested. Furthermore, it seems that this perlocutionary effect is crucial to the performance of suggestions. In the broadest possible sense of the term 'suggestion' then, anything which serves to make someone think of something is a suggestion.

If what we're interested in is indirect illocutionary acts, we must be able to distinguish such illocutionary acts of suggesting from those acts which are suggestions only by virtue of their perlocutionary effect. The sentences (1)-(6)

(1) It's time to go.
(2) Well, Josie, it's about that time.
(3) You haven't eaten your spinach.
(4) There's rice to be cooked yet.
(5) Did you clean up your room?
(6) Should you do that?

are perlocutionary suggestions only; they cannot be predicted
systematically from the semantic structure or felicity conditions
of direct suggestions.

One way of distinguishing such perlocutionary suggestions
from indirect illocutionary suggestions is in terms of what type of
responses are appropriate to them. True indirect illocutionary
suggestions may be responded to by remarks that make reference to
either the act of suggesting or a felicity condition on that act.
Responses like (7)-(12)

(7) That's a good idea.
(8) That's a lousy idea.
(9) That's a possibility.
(10) That's worth thinking about.
     considering
(11) I'll keep that in mind.
(12) That's a fine suggestion you just made there.

are not appropriate to the perlocutionary suggestions (1)-(6), but
are to the indirect suggestions discussed below.

(13)

There is a condition on CONSIDER in this structure that the speaker
believe that the hearer has not already considered the embedded
proposition, that is $S_2$ in the diagram (13). This is actually just a
specific instance of a more general condition on impositives, that the
speaker does not attempt to get the hearer to do something which he has
already done. According to Heringer's proposal, this condition may be
either asserted or questioned to perform, indirectly, the act of which
it is a condition (namely, the act of suggesting). Sentences (14)-(20)

(14) You haven't considered Jeremiah's doing it.
(15) You don't seem to have thought about my going to Detroit.
(16) Have you considered taking Kalanianole?
(17) How about a cup of coffee?
(18) What about visiting your in-laws?
(19) Are you aware that you could grow soy beans?
(20) You don't seem to be aware of the possibility of hiring women.

are examples of indirect suggestions based on this condition; (14), (15), and (16) are relatively straightforward, but (17) and (18) are more complicated, and there are differences between them that I won't go into here. Basically, the how about and what about questions ask for opinions on the matter being discussed; since it is necessary to have thought about something to have an opinion on it, (17) and (18) function as indirect suggestions by causing the hearer to consider the proposition in order to give an opinion. These questions are, as are all sentences that can be indirect illocutions, ambiguous between a literal reading, in which the speaker assumes the hearer has considered the proposition (and so, the speaker is not suggesting anything), and an indirect suggestion sense, where the speaker assumes the hearer has not considered the proposition.

These sentences indicate that not only can conditions of this type be asserted and questioned, but also they can be used as presuppositions upon which questions are based, and these questions can perform the indirect illocutionary act. That this is actually what's going on here is not certain; it may be that how about and what about questions are idiomatic in this respect.

The sentences (19) and (20) are also complicated; they may even be too indirect for everyone to agree that they are actually suggestions. The complexity of these sentences arises from the fact that they are based on a condition of a condition (namely, that in order to consider something one must be aware of it); in addition, these sentences involve a second condition on suggestions concerning the possibility of the proposition being suggested. I will return to this condition on possibility in a moment. First, I would like to point out that another aspect of suggestions is illustrated by (19) and (20): as far as the hearer is concerned, these sentences are suggestions if he was actually unaware of the possibility mentioned. Thus, if the speaker's and hearer's beliefs do not coincide, what may be a suggestion in the speaker's opinion may not be one in the hearer's opinion.

Returning to the condition on possibility: this condition is that the speaker believe that the proposition being suggested is possible. (21)-(23)

(21) You could eat liver.
(22) It wouldn't kill you to wash your feet.
(23) Maybe she could take you to school.

assert this condition and (24) and (25)

(24) Could we move that thing?
(25) Is it possible to turn the radio down?
question it. It might be noted here that understanding (22) also
requires the commonly held assumption that those actions which
result in one's death are not to be considered legitimate
possibilities.

I consider recommendations to be a special type of suggestion.
They have the same semantic structure as suggestions, and both
conditions mentioned so far also hold for them. In addition, they
have the condition that the speaker believe that the action indicated
in the proposition is in the best interest of the hearer, or is
desirable for the hearer to do. Some indirect recommendations based
on this condition:

(26) It would be nice if you visited your mother.
(27) He should learn to drive.
(28) You should read Tolkien.
(29) Shouldn't you try sketching first?
(30) It wouldn't hurt you to straighten up your desk
     once in a while.

Sentence (30) is complicated in the same way as (22) is, with the
additional element of sarcasm being supplied by the speaker's
assumption that the reason that the hearer hasn't done the recommended
action is that it would in some way be harmful to his health or
well-being.

There is another condition specifically on recommendations, no
doubt related to the previous one: the speaker must believe that
there is a good reason to do the action mentioned in the proposition.
From this condition the following indirect recommendations result:

(31) There's at least one good reason to impeach the
     president.
(32) We'll make a lot of money if we sell now.
(33) You'll live longer if you practice yoga.
(34) Why don't we go horseback riding?
(35) Why not buy the Bishop Estate?

It is necessary to point out that there are some apparent
paraphrases of (34) and (35) that do not seem to be indirect
suggestions, for instance:

(36) Isn't there some reason to go horseback riding?
(37) What's the reason for not buying the Bishop Estate?

It may be that (36) does suggest indirectly, but it certainly is not as
clearly a suggestion as (34). And (37) seems only to have its literal,
information-seeking sense, and not to be a suggestion at all. I
don't know why this should be so, but I strongly suspect it is
related to the fact that stress (and ultimately, deletion) also play
a part in indirect illocutions. If there is extra stress on don't
in (34) the suggestion reading is lost and, of course, the reduction
parallel to that exemplified in (35) cannot take place. It seems
as if there may be certain stress rules (and possibly other sorts of phonological rules) whose applicability correlates with the illocutionary force of such an utterance, and questions like (36) and (37) do not undergo such rules. The matter certainly warrants further investigation.

There is one more condition on the type of suggestion I have been discussing that I would like to mention; it is similar to the last condition given on recommendations, but more general in nature: the speaker must believe there is no reason not to do the action specified. This condition is exemplified by the following indirect suggestions:

(38) There's no reason not to have a party.
(39) There's nothing preventing us from making fudge.
(40) I see no reason not to drink wine.
(41) Is there any reason not to invite Yuriko?
(42) Does anyone have anything against eating now?

One category of suggestions has been ignored so far in this paper—those beginning with let's, as in (43) and (44).

(43) Let's think about why we're here.
(44) Let's stay for the forum at 5:00.

I believe these suggestions are basically different from the more common ones discussed above. The let's suggestions are not necessarily attempts to get people to consider things, specifically, as were the others; rather, they are attempts to get people to do things in general (and, of course, what they try to get people to do may be to think about something, as (43) does). They have the same semantic structure as impositives that are not suggestions (that is, a structure different from the one shown in (13) in that instead of CONSIDER as the first embedded verb, this more general suggestion simply has DO as the predicate in S1). These let's suggestions are distinguishable from other impositives in that the relation between speaker and hearer is not one of ascendancy, as it is in commands and requests. For the let's suggestions the conversational participants must have equal status, just as for other suggestions. I think it likely that the form of the suggestions beginning with let's is a consequence of this equal status condition, although I don't see how. It may be that this status condition needs more precise formulation, or it may just be that suggestions of this form are entirely idiomatic. Any suggestions on this matter will be welcome.

Note

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References

Green, Georgia M. Ms. How to get people to do things with words.

Discord*

Clare M. Silva
Arnold M. Zwicky

1. Introduction

The existence of various styles, levels, or tones of spoken and written language has long been recognized, and there is now a considerable literature—much of it prescriptive—dealing with particular examples and their classification. Our concern here is with the distinction between formal language and casual language, as reflected in the lexicon, in phonology, and in syntax. In all of the following pairs, the (a) examples are more formal than the (b) examples:

(1) a. She was quite tall.
    b. She was pretty tall.

(2) a. I am unhappy with these avocados.
    b. I’m unhappy with these avocados.

(3) a. He won’t eat fava beans.
    b. Fava beans he won’t eat.

The sentences in (1) are distinguished by the choice of lexical item, the adverb quite as opposed to pretty; the sentences in (2), by the nonapplication versus application of a phonological contraction rule, auxiliary reduction; and the sentences in (3), by the nonapplication or application of the syntactic rule of topicalization (or Y-movement). Compare DeCamp 1971:352-3: 'If I shift into a formal, oratorical style, several rule-predictable things happen to my grammar: the contraction transformation is blocked, so that I say is not and he has instead of isn't and he's; the ordering of the rules for case marking and for relative attraction is reversed, so that whom appears in my surface structures; conversely an otherwise dormant rule of disjunctive pronounization makes me sprout it is he and it is I; several phonological rules of assimilation and vowel reduction are blocked.'

Although there are complex interrelationships, we propose to discuss formality separate from other categorizations of language—for instance, categorization by geographical origin of the speaker, social class of the participants, their sex, their ages, their personal involvement in the discourse, politeness, occurrence of grammatical shibboleths or simple errors, poetic texture, or specific context of discourse. This idealization permits us to treat a wide
variety of cases within a single framework. The idealization also reflects the fact that speakers seem to be able (within limits) to make judgments about which of two examples is the more formal, about whether a single example sentence is formal or casual, and even about whether an example is extremely, fairly, or only a bit formal (or casual). Now it may turn out that this ability is not at all simple—in section 3.2 below, in fact, we consider some possible difficulties—but it seems sensible to examine less complex treatments of linguistic behavior before taking on elaborate models.

Again, compare DeCamp's statement: 'Of course the sociological correlates of the linguistic variation are multidimensional: age, education, income bracket, occupation, etc. But the linguistic variation itself is linear if described in linguistic terms rather than in terms of those sociological correlates' (1971:354).

In general, we must stress that our work is in several ways quite exploratory.

We have restricted our discussion largely to our own judgments about levels of formality and about stylistic anomaly in American English. The restriction to two informants (occasionally supplemented by others) is a matter of convenience only; we would hope to see careful studies of informant reactions on a large scale. Our reference to informant judgments rather than to properties of masses of elicited or collected data is intensional, however. Although we recognize the significance of the work of Labov and those influenced by him, we do not wish to dismiss informant judgments as sources of insight into linguistic systems.

In the next section we consider a simple account of stylistic level and observe that this account is insufficiently delicate to categorize our judgments. Sentences exhibiting stylistically discordant elements are then used to get at fine distinctions in level. A more complex gradation model is outlined in section 3.1, where a catalogue of elements is also provided, and the ways in which this model could fail to be adequate are canvassed in section 3.2. In section 3.3 we consider several cases that might illustrate one type of failure, the grammaticalization of instances of discord into conditions on rules.

2. A simple account

A straightforward categorization of lexical entries and rules with respect to stylistic levels would be: formal, neutral (usable in all styles), casual. Using these categories, (1a) is formal, (1b) casual; (2a) formal, (2b) neutral; (3a) neutral, (3b) casual. Other examples of lexical items and rules that distinguish among the three styles are considered below.

2.1. Some examples

A (peremptory) request with if you please is formal, while the corresponding request with please is neutral:

(4) a. Give me that negative, if you please.
    b. Give me that negative, please.
Interested in is neutral, but go for is casual:

(5) a. He's not interested in yoga.
    b. He doesn't go for yoga.

The preposing of negative adverbials (together with subject-verb inversion) is formal, while sentences without preposing are neutral:

(6) a. Nowhere does he state the nature of the process.
    b. He doesn't state the nature of the process anywhere.

A question tag with opposite polarity from its main clause (a flip tag) is neutral, but a tag with matching polarity (an alpha tag) is casual:

(7) a. She's the chairman, isn't she?
    b. She's the chairman, is she?

A sentential subject is formal, but extraposition gives a neutral sentence:

(8) a. That he paid only $1800 in taxes was no surprise.
    b. It was no surprise that he paid only $1800 in taxes.

The deletion of certain sentence-initial elements transforms a neutral utterance into a casual one.3

(9) a. Are they going with us?
    b. They going with us?

The phonological process of initial glide deletion in unstressed words is suppressed in the formal (10a), but applies in the neutral (10b). Flap deletion and desyllabication give the casual (10c).

(10) It would be easier to say.
    a. [It wəd bɪ iziɾ tu se]
    b. [Iɾəd bɪ iziɾ te se]
    c. [Id bɪ·iziɾ tə se]

2.2. Evidence that the simple analysis is inadequate

The three-way distinction, although initially attractive because of its simplicity, is insufficient for a comprehensive analysis of stylistic levels; and, in fact, most writers on the subject have seen more than two marked levels.4 Intuitively, certain items or rules have a much more extreme effect than others; uncontracted let us in

(11) Let us go now.
is much more formal than uncontracted *I am in* (2a). Preposing the
adverbial phrase of (12a) gives a more formal sentence, (12b), than
preposing the appositive, as in (12c):

12a. John went back to work, somewhat ill and
utterly depressed.
12b. Back to work John went, somewhat ill and
utterly depressed.
12c. Somewhat ill and utterly depressed, John went
back to work.

So plus a clause is felt by some speakers to be more casual than the
same clause with an alpha tag, even though the two constructions
have similar meanings and uses:

13a. So you're a man-hater now.
13b. You're a man-hater now, are you?

In addition to judging relative levels directly, we can get at
fine distinctions in stylistic level by considering cases of discord,
conflict in level between elements. In what follows, we consider
only discord between elements from different components of grammar;
here the effects are quite striking (sometimes definitely funny),
although discord within a component deserves study too. We present
below a sampling of cases in which formal and casual lexical entries,
syntactic rules, and phonological processes are variously juxta posed.
To indicate degrees of deviance, we have used the question mark
quantitatively—that is, the more deviant the sentence is thought to
be, the greater the number of question marks assigned to it (up to
three). The asterisk is used to mark sentences we judge to be so far
beyond the pale they are ungrammatical (though we return to these
eamples in later sections).

**Formal lexicon, casual syntactic processes.** Casual topicalization
of NP conflicts with the formal lexical items in

14. Men who eschew controversy we are not in need of.

Discord results when the formal impersonal *one* appears in casual
pseudo-imperative conditionals or in a sentence with a casual tag:

15. *Wash oneself every day, and one's skin gets dry.*
16. *One should eat violet leaves, should one?*

**Formal lexicon, casual phonology.** Discord (in different degrees)
arises in the association of formal lexical entries with the casual
phonological processes that give *gon na, wanna,* and *lemme:*

17. I submit that what they are { *going to* } do might
well discredit the program in its entirety.
(18) I {want to} *wanna* make one thing perfectly clear.

(19) *Let me???*Lemme*} assure you of my dedication to this office.

**Formal syntax, casual lexicon.** Adverbial preposing conflicts with the casual entries go for and you know:

(20) *?? Never did he go for rock or cool jazz, you know.*

The casual impersonal pronoun they and the predicate great are discordant with a sentential subject. Compare casual (21a) and formal (21b) with the juxtaposition of styles in (21c).

(21) a. It's great they finally caught up with those hoods.
   b. That the miscreants were finally apprehended is splendid.
   c. *?? That they finally caught up with those hoods is great.*

**Formal syntax, casual phonology.** Casual processes of flap deletion, auxiliary reduction, and desyllabication (illustrated in (22a)) are at variance with the formal sentential subject of (22b).

(22) a. *[hi dIn se Id bin i zi wrd te se] He didn't say it would be an easy word to say.*
   b. *??[ɔ cried bin izi wrd te se dIn mʊŋ] That it would be an easy word to say didn't matter.*

**Formal phonology, casual lexicon.** Suppressing contraction renders (23) discordant.

(23) *??Let us cut out now, baby.*

The sentential idioms of (24) lose their idiomatic understanding when casual phonological processes are suppressed, as in (25).

(24) a. What's up?
   b. You're telling me!
   c. So's your old man!

(25) a. What is up?
   b. You are telling me!
   c. So is your old man!

**Formal phonology, casual syntax.** The casual tag of (26) conflicts with the formal suppression of contraction.

(26) *??She is the chairman, is she?*
The casual deletion in (27) conflicts with suppression of contraction.

(27) *Have not seen George around for a long time.

3.1. A more complex linear model.

Given that a three-way division is not adequate, the next possibility to explore is that there are merely more degrees of casualness and more degrees of formality, as various writers have suggested. A gradation model of this type might provide two scales deviating from the neutral, or zero, position—say, from +1 to +10 for formal elements and from -1 to -10 for casual elements (the choice of the number 10 here is without significance). Each linguistic element (lexical entry or rule) would be assigned a value between -10 and +10, and the degree of stylistic deviance of a sentence could be calculated as the difference between the values of the most extreme elements in it. Thus, a sentence having a very formal element in it, one assigned the value +9, and also a fairly casual element, one with the value -5, would receive the deviance index 14, and would be predicted to be more anomalous than a sentence with the same formal element in combination with an only slightly casual (-2) element (index 11), or a sentence with the same casual element in combination with a moderately formal (+4) element (index 9).

Our gradation model is quite similar to (but distinct from) DeCamp’s model. DeCamp proposes to order linguistically variable elements on a linear scale, each point on the scale separating occurrence of the element from its nonoccurrence. DeCamp does not incorporate neutral elements into his model, nor does he provide a mechanism for distinguishing larger or smaller distances between two elements (except insofar as there are intervening elements on the scale; but nothing guarantees that such intervening elements will happen to occur). On the other hand, DeCamp assumes that his scales are indefinitely divisible (‘by calling it a continuum I mean that given two samples of Jamaican speech which differ substantially from one another, it is usually possible to find a third intermediate level in an additional sample’ (354)), whereas the number of levels in our model is bounded by speakers’ abilities in discriminating styles. This last difference between the two models points to the major distinction between DeCamp’s treatment and ours: he is primarily interested in systematizing variation across speakers, while our purpose is to systematize variation across contexts for a single speaker. These are related types of variation, but not necessarily the same.

Within our framework, the linguist’s problem is to determine which rules and lexical entries are stylistically marked and then to assign them values in a way that predicts both the correct ordering of elements and the correct relative ordering of discords. A first attempt at a sample of this catalogue is given in the next section.

3.1.1. Phonological rules.6

+10: uncontracted let us
+9: suppression of t + a / ##, as in right, got, cat,
especially before word-initial consonants or in pause; suppression of a rule that deletes morpheme-final t and d after certain continuant consonants, as in and, soft, must, especially before other consonants

+7: suppression of n → /V C, as in can’t, hand;
suppression of a rule syncopating vowels, roughly

\[
\begin{array}{c}
\text{V} \\
-\text{stress}
\end{array} → \emptyset / C \quad \begin{array}{c}
\text{V} \\
-\text{stress}
\end{array}
\]

as in hindering, pedaling, happening

+4: failure to delete initial glides h and w in unstressed words, as in his, would; suppression of auxiliary reduction; failure to reduce vn to n in in, on, an and

0: obligatory morphophonemic rules

-1: rules yielding wanna from want to

-3: rules yielding gonna from going to

-5: vowel centralization (Shockey 1973 observes a significant degree of centralization in the conversational style of her subjects); flap deletion, as in magnetic and about it

-7: desyllabication after flap deletion, as in being [bin], be an [bin], it'd [Id]; rules yielding lemme from let me.

Note that formality in phonology largely derives from suppressing rules rather than from applying them. Also note that it is very hard to find an optional phonological rule without any stylistic import whatsoever. In these respects, phonology is different from syntax, and it would be very interesting to try to explain why.

3.1.2. Syntactic rules.

+10: counterfactual inversion, as in Were John here, we could discuss your problem

+8: subject-verb inversion after preposed negative elements, as in Nowhere does he state the nature of the process

+7: pied piping in questions and relatives, as in At whom are you smiling? and The person to whom he spoke was a former dean; preposing of adverbial phrases, as in To her closest friends we related what was happening
and On your answer our future lives depend; preposing of appositive clauses, as in Feeling that he might be in danger, I ordered him to return and The largest single campus university in the U.S., Ohio State offers 250 programs of study.

+5: failure to extrapose sentential subjects, as in That the test case was disappointing surprised no one and For the test case to be disappointing surprised no one.

+3: use of existential there with verbs other than be, as in There are said to be several candidates for the job, There remained several matters to attend to.

0: passivization; flip tags, as in This dog is handsome, isn't it? and This dog won't bite, will it?; VP deletion, as in These machines can handle that job, but the new ones can't.

-2: extraposition from NP, as in A man came in who was wearing a headphones stereo; topicalization of NP, as in This paper I'm going to regret ever having begun. (Huddleston 1971:315 finds that the focusing achieved by topicalization of NP 'is effected just about exclusively' by passivization in scientific English).

-4: alpha tags, as in You're going to town, are you?; pseudo-imperative conditionals, like Add acid and the solution will turn blue; retention of pronouns in Don't you talk to me that way! and I got me a wife; left dislocation, as in That guy, he's a bum; right dislocation, as in He's a bum, that guy; emotive negative tags, as in Not this bottle, you won't!

-5: topicalization of VP, as in Call a cab I never could; emotive extraposition of NP, as in It's great the way he's handling the ball (Elliott 1971).

-9: various deletions of sentence-initial elements, illustrated by Think I'd better get this in the mail today, See where he went?, Can't be many people here, Ask me, I'd say he went that way.

3.1.3. Lexical items.9

+9: hereby

+8: performative formulas like I submit, let me say, I should point out, I conclude, etc.
+7: impersonal one (rather than you); eschew

+2: subsequently, in this respect/ regard, in conjunction with, in the event

0: then, and, after, chair, ...

-3: intensifying pretty, really, awful; you know and similar filler items; impersonal they

-5: many slang expressions, for instance exclamatory boy!, great [good], beat it [leave], step on it [hurry up], bust [arrest], go for [be interested in]

-8: obscene expressions

We return now to the discordant example sentences of section 2.2, to see what deviance indices would be assigned to them by the scheme just outlined. The table below includes all question-marked (but not asterisked) examples:

<table>
<thead>
<tr>
<th>Example number</th>
<th>Deviance index</th>
<th>Question marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>(14)</td>
<td>9</td>
<td>?</td>
</tr>
<tr>
<td>(17)</td>
<td>11</td>
<td>??</td>
</tr>
<tr>
<td>(18)</td>
<td>9</td>
<td>?</td>
</tr>
<tr>
<td>(19)</td>
<td>15</td>
<td>??</td>
</tr>
<tr>
<td>(20)</td>
<td>11</td>
<td>??</td>
</tr>
<tr>
<td>(21c)</td>
<td>10</td>
<td>??</td>
</tr>
<tr>
<td>(22b)</td>
<td>12</td>
<td>??</td>
</tr>
<tr>
<td>(23)</td>
<td>15</td>
<td>??</td>
</tr>
<tr>
<td>(26)</td>
<td>8</td>
<td>?</td>
</tr>
</tbody>
</table>

Our assignment of values to the elements in these sentences is consistent with our original judgments of the relative deviance of the sentences; an index of 8 or 9 corresponds to one question mark, 10 to 12 corresponds to two, and by 15 we have reached three question marks. We discuss the asterisked examples in section 3.3.

3.2. Potential difficulties

The model of stylistic level outlined above could be inadequate in a number of ways. In fact, several of these difficulties are implicit in the previous discussion. But let us take up the problems one by one.

Variation in values by environment. It might be impossible to assign invariant values to an element because the degree of formality of the element is different in different linguistic environments. In particular, it might be impossible to assign an invariant value to a rule because application of the rule to different lexical items or structures yields results not on the same stylistic level. We have already seen a few cases of this difficulty. For instance, as
noted in the previous section, existential there with verbs other than be is somewhat formal. But there with predicative be is neutral; there is nothing marked about sentences like

(28) There is a car in the driveway.

Consequently, unless it can be argued that there are two or more there-insertion rules, we have here an example of a rule that gives different values in different environments.

Similarly, pied piping is not a rule, but a mode of application of rules. Yet the result of moving wh-words in questions and relatives has different values, depending upon whether or not these rules pied pipe.

We have also pointed out that topicalization of NP is less casual than topicalization of VP. For some speakers, moreover, topicalization in negative sentences is less casual than topicalization in positive sentences, so that (29) is less casual than (30):

(29) Beans I never eat.
(30) Beans I eat often.

Other cases are easy to find. Preposing of adverbials has quite different effects depending upon what sort of adverbial is preposed. Contrast the formal sentences in 3.1.2, which have preposed negative elements and the phrases to her closest friends and on your answer, with sentences with preposed time adverbials, which are stylistically neutral:

(31) Yesterday we went to Philadelphia.
(32) At the beginning of the week they should receive the letter.

The effect of preposed negative elements isn't constant, as a matter of fact, since the not only construction is not particularly marked:

(33) Not only do I read Spanish, (but) I also play polo.

For syntax, it seems to be that stylistically marked elements typically vary in their effect according to environment. Phonological rules and lexical items don't seem to exhibit variation to this degree. We have, however, illustrated a few cases of variation within phonological rules. Presumably, the rules yielding lemme, gonna, and wanna are drawn from the same set, yet the three results are not on a par stylistically. And perhaps the contraction in let's can be argued to be part of a more general contraction process, in which case this general process would have different stylistic values in different environments. Moreover, extension of phonological processes has been widely noted by students of casual speech. Nevertheless, the syntactic cases are much more striking than the phonological ones, and there is no obvious syntactic parallel to
the paths along which phonological processes extend with increasing casualness of speech.

Complexity of the deviance function. The deviance function might be more complex than $F - C$, where $F$ is the extreme formality value and $C$ the extreme casualness value. The correct function might involve coefficients, or assign different weights to different components of grammar, or even be nonlinear. We see no indication that this is so, except in the cases discussed in section 3.3.

Range and distribution of values. The presentation of the model above claims that the most formal possible element is as marked as the most casual possible element, and provides equally spaced degrees between a neutral point and these extremes. It is not required that each component of the grammar of a language, or even each language, exhibit elements at the extremes. Moreover, it is not required that the value within some component, or the total set of values for a language, distribute themselves evenly over the range from $+10$ to $-10$. Values might cluster at (say) $+10$, $+8$, $+2.5$, $0$, $-5$, and $-7$. Restricted ranges and skewed distributions are consistent with the model as presented. But they would indicate—especially if they recurred in many languages—that the model was insufficiently restricted. We have not surveyed a large enough body of phenomena to tell whether this problem arises.

At the moment, then, it appears that the major difficulty with the gradation model is the variability of elements according to environment. This is a very serious difficulty, and it is not easy to see how to accommodate the sorts of facts exemplified above. A brute force solution would be to mark subsrules of rules for their stylistic level, and to mark, in the same way, lexical items to which rules apply—that is, to treat formality as squishy (Ross 1972) in several dimensions 'below the level of the rule'.

David Dowty has pointed out to us that our observations can be taken as leading to quite a different conclusion: since the stylistic level of transformational operations seems to be psychologically real, facts about discord can be interpreted as evidence that similar operations with different stylistic levels constitute different rules. That is, we might simply conclude that there are two or more distinct there-insertion rules, several adverbial preposing rules, several topicalization rules, distinct rules of wh-movement according to whether or not pied piping takes place, and so on. In some cases—there-insertion, for instance—this conclusion would not be surprising, but in others—as in the pied piping examples—it would be distasteful, since we would have to break up a number of rules in a parallel way.

3.3. Grammatized discord

The examples in (24) and (25) of section 2.2 illustrate a specialized form of deviation from the simple gradation model: the combination of a casual lexical item (in each case a sentential idiom) with formal phonology (failure to contract auxiliaries) is simply
impossible. Apparently, the English sentential idioms *What's up*, *You're telling me*, and *So's your old man* must either be marked as obligatorily undergoing deletion of the vowels in *is* and *are*, or lack these vowels in their phonological underlying representations. Note that degree of discord by itself is not sufficient to explain our judgments; on the assumption that the sentential idioms are simply slang, or just a bit more casual than the slang expressions listed in section 3.1.3, the deviance index for (25) is only 9 to 11.

In (27) above, we saw a similar example, this time involving a syntactic deletion rule in combination with the suppression of contraction. Apparently, contraction is obligatory in certain reduced sentences. Again, the deviance index for (27) is 13, which is less than the index for (19) and (23).

Sentence (15) (similarly (16)) illustrates an interaction between a syntactic rule and the formality of the lexical item *one*. The syntactic rule in question is one that forms imperative-looking sentences from conditional remote structures. The source of (15) would be the grammatical

(34) If one washes oneself every day, one's skin gets dry.

parallel to the derivation of

(35) Wash yourself every day, and your skin gets dry.

from

(36) If you wash yourself every day, your skin gets dry.

(understood with the impersonal *you*). Apparently, this rule of pseudo-imperative conditional formation must require the subject *you* in the antecedent of the conditional; antecedents with *one* in them cannot undergo the rule, even though there is no semantic anomaly. Although the deviance index for (15) is only 11, we suggest that the explanation for the restriction on the rule is the stylistic discord between the rule and the lexical item *one*. Like some of the perceptual constraints studied by Grosu 1972, the condition has become grammaticized, made absolute rather than graded. Grosu notes that different languages grammaticize different constraints—English, for instance, has grammaticized a constraint against complex prenominal modifiers, while German has not. Similarly, we would not be surprised to find other languages in which the translations of (15) and (16) were merely somewhat odd.

We conclude that the most attractive accounts of stylistic level are inadequate in several ways. Apparently, what is called for is a descriptive device of at least the complexity of subrule hierarchies (or the partition of standard rules into many rules each), plus the postulation of conditions on rules which are motivated by stylistic discord but are categorical.
Footnotes

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1. Traditional discussions of usage—the surveys by Fowler, Gowers, Partridge, and the Evanses, for instance—tend to concentrate on lexical choices, and their judgments of stylistic levels are not clearly distinguished from judgments about grammaticality, clarity, beauty, regional or arealistic character, and other matters. Technical linguistic discussions have concentrated on phonology (as in Dressler 1972 and Zwicky 1972b) or on correlations between linguistic and sociolinguistic variables.

2. To classify styles we use the terms formal and casual where Labov 1966 uses careful and casual, respectively (he reserves formal and informal to characterize contexts, noting that styles and contexts are correlated but not coextensive).

3. See Schmerling 1973 for a discussion of subjectless sentences. Schmerling 582 notes that 'some elusive element of spontaneity and impulsiveness' is involved in uttering sentences like Guess I should be going.

4. Thus, Labov's studies see five or more stylistic levels, ranging from casual speech to the reading of minimal pairs, and Pouché 1959, treating liaison in French, distinguishes two styles (labeled conversation sérieuse et soignée and style soutenu) more elevated than a basic style (conversation courante).

5. This proposal has something of the flavor of Ross' 1964 treatment of degrees of grammaticality for superlative constructions. In addition to rules which have no effect on grammaticality, there are rules whose application is said to raise or lower grammaticality by a specified number of degrees.

6. These examples are drawn from various sources, in particular Zwicky 1972a.

7. Lawrence Schourup has pointed out to us that contracted mightn't and shan't are more formal than uncontracted might not and shall not.

8. The examples are taken from various sources, in particular Ross 1967.

9. Wells 1960 observes a general preference for nominal forms in formal style, where verbal expressions would be used at a nonformal level. He contrasts at the time of our arrival with when we arrive/arrived, in the event of his doing that with if he does that.
References


On the Semantics of Futurate Sentences

Fred Goodman

0. Introduction

G. Lakoff 1971:339 credits K. Burt with observing 'that the future auxiliary will can be deleted in what looks like a very strange set of environments in terms of presupposition-free syntactic structure.' Some examples he gives:

(1) a. The Yankees will play the Red Sox tomorrow.
b. The Yankees play the Red Sox tomorrow.
c. The Yankees will play well tomorrow.
d. *The Yankees play well tomorrow.
e. I will get my paycheck tomorrow.
f. I get my paycheck tomorrow.
g. I will get a cold tomorrow.
h. *I get a cold tomorrow.

Lakoff concludes that 'in terms of presupposition-free syntax no general principle for the deletion of the will can be stated. However, ...will can be deleted just in case it is presupposed that the event is one that the speaker can be sure of.'

Vetter 1973:105 points out that if Lakoff's formulation is correct then the sentences

(2) a. I'm not sure that the Yankees play the Red Sox tomorrow.
b. I can't be sure whether the Yankees play the Red Sox tomorrow.

'would deny their own presupposition.' He concludes that 'rather than presupposing the event to be one the speaker can be sure about, it seems to me that the sentences without the will immediately entail that the event is planned.'

Prince ms. 1973 uses the term futurate for present-tense sentences that can occur with future time adverbials, a piece of terminology I adopt here. She is particularly interested in progressive futurate sentences, like (3d) below:

(3) a. The hostages will be trying to escape tomorrow until the very last minute.
b. The hostages are trying to escape tomorrow until the very last minute.
(3) c. Mary will be taking prelims next weekend.
    d. Mary is taking prelims next weekend.
    e. Mary will be taking prelims next weekend when you call.
    f. *Mary is taking prelims next weekend when you call.

From examples like these, she concludes that 'if one derives futurate be-ing via will-deletion, it is clear that (1) additional bizarre conditions will have to be met, and (2) in certain cases, will-deletion is blocked.' She then proposes that no will-deletion transformation exists, but rather that 'futurate be-ing is derived from an underlying structure containing PLAN as its higher predicate' and that simple futurate has 'DEFinite or CERTAIN as a higher predicate.'

Prince, then, disagrees with both Lakoff and Vetter on the mechanics of a will-deletion transformation; however, she takes basically Lakoff's notion of 'sureness' to derive simple futurate sentences, and Vetter's notion of a 'plan' to derive progressive futurate sentences.

Jenkins 1972 takes an interpretivist view of the phenomena. He considers sentences like the following:

\[(h)\]

a. *John knows the answer tomorrow.
   b. I hope that the Red Sox do well tomorrow.
   c. *I know that the Red Sox do well tomorrow.
   d. He will be right back.
   e. *He is right back.
   f. It will do you some good.
   g. *It does you some good.

Commenting that 'in a theory which countenances will-deletion one would expect all cases of will...to be able to delete' (169), he maintains that 'there are no underlying modals later deleted by transformational operations. Rather we argue that in each case the specific implicit model interpretation of futurity is due to a rule of semantic interpretation' (174). He does not, however, provide any precise account of what those interpretations are, and is, therefore, unable to account for the deviance of (4a), which problem he sets aside (178).

In this paper I consider only futurate sentences. Thus, I will not be looking at such environments as if complements, POSS-ing complements, and for-to complements, where no will\(^2\) can ever appear. I believe that these must receive a separate account from futurate sentences.

My approach is to present a series of contrasts between futurate and future sentences. In so doing, I hope to isolate the additional semantic characteristics or conditions which distinguish the futurate class. The following are those conditions as I will develop them:

(A) The entailment that at the time of the assertion the speaker believes that a current state of affairs exists, the future result of which is described in the surface form;
(B) the entailment from the time adverbial that there is a definite upper time bound for what is described;
(C) the presupposition that the speaker has no control over whether or not what is described in the surface sentence will in fact result from the current state of affairs.

1. Transformation or interpretive rule

As is obvious from my discussion of the literature, there is considerable controversy about whether there is a transformation or an interpretive rule involved; and, if it is a transformation, whether there is ever a will deleted along with the higher material. I do not know which alternative is the correct one, but I believe that I can contribute the first step in the final analysis of futurates, no matter from what school that analysis comes.

If a transformation (be it one that deletes will or one that deletes higher material) is the best explanation, then the structure which triggers that transformation must be specified in detail. If my conditions accurately characterize the class of futurates, then those conditions must be represented in the deep structure.

Alternatively, if an interpretive rule is involved, then the interpretations must be specified precisely. As Jenkins points out, if the interpretation simply consists of re-inserting the future auxiliary, then it would be expected that any sentence containing will should also appear in futurate form, since the two would have identical interpretations. It must be remembered that interpretive rules perform an important formal function, marking as deviant those sentences which have contradictory interpretations. Within this theory, then, my conditions, if correct, could be used as those interpretations.

2. Condition A: current state of affairs

The first semantic requirement is the entailment that at the time of the assertion the speaker believes that a current state of affairs exists, the future result of which is described in the surface form. This claim can be brought out in several ways.

Consider first the sentences below.

(5) a. Kurt will have a date with Wanda June tomorrow.
   b. Kurt has a date with Wanda June tomorrow.
   c. Kurt will have a date with Wanda June tomorrow, but he probably won't keep it.
   d. Kurt has a date with Wanda June tomorrow but he probably won't keep it.

I chose the idiom to have a date deliberately, because it is ambiguous in English in just the right way: under one reading, it means to have an arrangement to go somewhere with someone, while under the other it means actually to go.
Sentence (5a) is ambiguous between the assertion that arrangements for a date between Kurt and Wanda June will be made tomorrow, and the assertion that arrangements have already been made for them to go somewhere together tomorrow. In my speech the first of these two readings is very much preferred. Sentence (5b), however, has only the second of these two readings. It asserts that the current state of affairs is that there is an arrangement between Kurt and Wanda June that they will be together tomorrow.

The above distinction between the readings is brought out especially well by (5c) and (5d). In my speech the preferred reading for (5c) seems to be that Kurt both will and will probably not take Wanda June out, which is contradictory. I can, however, get the other reading—clearly expressed in (5d)—in which Kurt has an arrangement with Wanda June but probably won't honor it.

As further evidence for the first condition, consider the following:

(6) a. I don't know whether or not the Yankees will play the Red Sox tomorrow.
   b. I don't know whether or not the Yankees are playing the Red Sox tomorrow.
   c. I don't know whether or not the Yankees will play the Red Sox tomorrow, because it may rain.
   d. *I don't know whether or not the Yankees are playing the Red Sox tomorrow, because it may rain.
   e. I don't know whether or not the Yankees will play the Red Sox tomorrow because tomorrow is Memorial Day.
   f. I don't know whether or not the Yankees are playing the Red Sox tomorrow because play tomorrow is Memorial Day.
   g. The Yankees are playing the Red Sox tomorrow, play if it doesn't rain.

In (6a) and (6e) there are two possible readings, one of which is that the speaker does not know whether or not the game is scheduled and the other of which is that he does not know if the game will actually occur. The corresponding sentences (6b) and (6f) have only the first of these readings. They are perfectly acceptable because the scheduling is noncontingent—i.e. the fact that tomorrow is Memorial Day did or did not affect the scheduling of the game.
The sentences (6c) and (6d), on the other hand, can only be said to express a contingency about whether or not the game will actually occur, and not about whether or not the game is scheduled. Thus, (6c) has the second reading of (5a) and (6e), while (6d) is deviant because that reading is not in accord with condition A. Notice that in (6g) the outcome of the schedule is itself asserted to be contingent upon whether or not it is raining; (6g) is therefore acceptable.

The principle being invoked here is that a current state of affairs cannot be contingent upon a future state of affairs (although the current state of affairs can be such that its outcome is contingent upon some future state). This relationship can be brought out in another way by examining sentences like

(7) a. The Yankees will defeat the Red Sox tomorrow.
   b. *The Yankees are defeating the Red Sox tomorrow.
   c. The Yankees will be playing well tomorrow.
   d. *The Yankees are playing well tomorrow.
   e. It is prearranged that the Yankees defeat the Red Sox tomorrow.

In (7a) a prediction is being made about the outcome of the game. The outcome of the game is a future event contingent upon the way in which the game is played, which is future with regard to the assertion; consequently (7b) is out, since it cannot pertain to a current state of affairs. Similarly, (7c) is contingent upon the state of the Yankees during the game and cannot, therefore, be expressing a current state of affairs. (7d) is thus deviant, and I can think of no context to make it acceptable.

The sentence pair represented in (7e) is particularly interesting and important. The simple futurate form is possibly acceptable, though in my speech it is questionable. If it is acceptable, it seems to be saying that the outcome of the game, the event being described, has somehow been prearranged. It is hard for me to imagine how a future event as such can be prearranged; as a result, I find the simple futurate form to be very doubtful. The futurate progressive form, on the other hand, sounds perfectly good to me. It seems to be describing the prearrangement itself, rather than the event which is yet to occur. As such, then, the futurate progressive form is describing a currently extant state of affairs and is, therefore, in accord with condition A. In contrast, the simple futurate is not fully in accord with condition A because it doesn't describe (in a direct way, at any rate) a current state of affairs.

2.1. The notion of a plan

It is basically the above data, with the possible exception of (7e), which led Vetter to conclude that futurate sentences must describe planned events. Additional data of the type in (7e) caused
Prince to say that only futurate progressive sentences had a higher predicate PLAN. As I will now show, the notion of a plan is far too narrow to account for all the instances of English futurate sentences, be they simple or progressive.

Taking the claim quite literally, the predicate PLAN requires a subject, though this subject is apparently always deleted or lost in the interpretation of the surface sentence. Now consider:

(8) a. The sun will \{be setting\} at 6:39 tomorrow.
   b. The sun \{is setting\} at 6:39 tomorrow.
   c. An eclipse will \{be occurring\} tomorrow morning.
   d. An eclipse \{is occurring\} tomorrow morning.
   e. It will \{be raining\} tomorrow.
   f. *It \{is raining\} tomorrow.

To retain the predicate PLAN for (8b) and (8d), an appeal to the notion of a divine planner would have to be made. It makes no sense to say that physical laws plan the movement of the heavens. Thus, it might be said that these futurate sentences are acceptable because there is a divine plan controlling the movement of the heavens. The same divine plan, however, could also be said to control the changes in climate, if I remember my religion correctly. The issue would not then seem to be the existence of a plan, but rather whether or not the speaker has knowledge of the workings of that plan. I showed in sentence set (6), however, that speaker knowledge of the details of a plan is not required to allow futurate forms to appear. The notion of a plan then, when combined with the fact that (8b) and (8d) are acceptable while (8f) is deviant, would seem to yield a contradiction.

Under my formulation no notion of plan is required. I must merely appeal to the fact that the position of the sun and the moon are believed to be predictable by current technology, while the state of the weather is not believed to be predictable. Thus, given any current state of the heavens, any future state is believed to be completely determined. This belief on the part of speakers is sufficient to allow futurate forms of type (8b) and (8d) under my formulation. But people have no such belief about the predictability of the weather, so that statements like (8f) about future weather conditions are prohibited. Notice that (8f) could be made perfectly acceptable if we imagine that it is offered in a different world—say on the moon, where the weather man, rather than predicting the weather, pulls levers that control the climate in the dome.

2.2. The notion of an event

According to the formulations given by both Vetter and Lakoff, futurate sentences describe events, though the notion of event is
undefined. From an intuitive standpoint, however, it appears that my contention, that what is described must merely be something which the speaker believes can result from a previous state of affairs, is broader than the contention that these sentences must describe events.

Consider the following futurate sentences:

(9) a. I am busy tomorrow.
b. I can't see you tomorrow.
c. The computer is down tomorrow.

Each of these sentences is clearly stative. To test this, consider that each could be the subject of seems and none could be the object of force. I see no way in which they could be said to describe events, even in the broadest interpretation of that term. Rather, each describes a state which will result from some state of affairs currently obtaining: hence, each is perfectly acceptable.

2.3. The notion of certainty or sureness

I now examine the contention that the occurrence of futurate sentences is in some way dependent on speaker sureness or certainty. Lakoff says that this notion must be presupposed, and Prince says that it appears as a higher predicate in simple futurate sentences. I will now show that no such notion is necessary.

Considering first the claim that this sureness is presupposed, it would follow that those environments in which the sentence is presupposed to be true would be ideal for futurate sentences. Factive verbs are known to supply such environments in their complements. But compare

(10) a. It's too bad that the Yankees will {be playing, play} well tomorrow.
b. *It's too bad that the Yankees {are playing, play} well tomorrow.

For sentence (10b) the speaker presupposes that the complement sentence is true; therefore, it should follow that the futurate form is acceptable. But it is deviant. In fact, the distribution of futurates within complements of factives is practically identical to their distribution in nonfactive environments. I will leave it to the reader to verify this fact for himself. This fact argues against the claim that sureness is presupposed.

That no higher predicate of the form CERTAIN or DEFINITE, as proposed by Prince, need be present can be seen by examining again sentence sets (2) and (6). In those sets there are futurate simple sentences as complements of negated be sure and know. The claim that these futurate simple sentences have a higher predicate CERTAIN would entail that CERTAIN could be dominated by its own negation, which would be a contradiction. This difficulty argues against the higher predicate analysis.
3. **Condition B: a definite upper time bound**

The second semantic condition in my formulation is that a time adverbial must specify a definite upper time bound for what is described. As a first demonstration of this principle consider the contrast between until, before, and by in the following sentences.

(11)  
- a. The computer will be down until 10:00 tomorrow.  
- b. The computer is down until 10:00 tomorrow.  
- c. The computer will be down before 10:00 tomorrow.  
- d. The computer is down before 10:00 tomorrow.  
- e. The computer will be down by 10:00 tomorrow.  
- f. The computer is down by 10:00 tomorrow.

To describe the differences between the above three time adverbials in general let T be some fixed point in future time and P(t) be some proposition whose truth is predicated over time. Then

\[ P(t) \text{ until } T \text{ means that } P(t) \text{ is true if and only if } t \text{ is not later than } T; \]
\[ P(t) \text{ before } T \text{ means that if } t \text{ is earlier than } T, \text{ then } P(t) \text{ is true;} \]
\[ P(t) \text{ by } T \text{ means that if } P(t) \text{ is false then } t \text{ is earlier than } T. \]

Applying this formalism to the sentences in (11), we see that in (11a) the assertion is made that the state will last no later than 10:00 tomorrow. There is a clear upper time bound asserted, and consequently (11b) is acceptable. In (11c) the assertion is made that the state will obtain at a time earlier than 10:00 and no assertion is made about any time after that. (11d) is, therefore, marginally acceptable, and does seem to imply that the computer will no longer be down after 10:00. (11e), however, clearly asserts that the state will come into being prior to or at 10:00. The implication that the state will continue beyond 10:00 is present, so that (11f) is deviant.

3.1. **Retentive predicates**

To extend the analysis slightly, notice that there is a class of predicates in English whose properties, once ascribed to an individual, are assumed to be retained by that individual for an indefinite period into the future—for instance, knowing the answer and being dead. Once someone knows an answer he is assumed to know it for an indefinite period into the future, and once someone is dead he is assumed to be permanently dead. I do not mean that the property cannot be lost, only that the normal assumption is that it is retained indefinitely into the future. I will term these predicates retentive. It is the existence of retentive predicates, among other things, that caused Jenkins to conclude that no transformation could be specified to account for futurate sentences.

The behavior of retentive predicates with regard to until, before, and by is the precise inverse of that of futurate sentences, as can be seen in the following sentences.
(12)  
  a. *John knew the answer until 10:00.  
  b. *John was dead until 10:00.  
  c. John knew the answer before 10:00.  
  d. John was dead before 10:00.  
  e. John knew the answer by 10:00.  
  f. John was dead by 10:00.  

Thus, the until sentences are deviant and the by sentences are acceptable. The before sentences are acceptable but cannot have the reading that the state described no longer pertained after 10:00.

In conclusion, since the retentive predicates cannot be upward time bounded, their futurate forms should be deviant, which is correct:

(13)  
  a. John will know the answer tomorrow.  
  b. *John knows the answer tomorrow.  
  c. John will be dead tomorrow.  
  d. *John is dead tomorrow.  

Neither the notion of certainty nor the notion of plan can account for the facts in (13), since the attainment of these predicates can be both planned and certain—as in the case of studying all night to learn the answer, or of having terminal cancer.

3.2. Present perfect forms as retentive predicates

Vetter points out that will never deletes in the future perfect. This is just what we would expect, given the observations in the preceding section. Sentences like

(14)  
  a. It seems that the Yankees have played the  
     Red Sox.  
  b. *I forced the Yankees to have played the Red Sox.  
  c. It seems that the computer has been down.  
  d. *I caused the computer to have been down.  

show that the present perfect sentences are stative. In addition, these states are retentive, since once the Yankees have played the Red Sox it will always be the case that they played them, and once the computer has been down it is always the case that it was down then. It follows then that since present perfect verb forms are retentive predicates, they cannot have futurate surface realizations:

(15)  
  a. The Yankees will have played the Red Sox  
     tomorrow.  
  b. *The Yankees have played the Red Sox tomorrow.  
  c. The computer will have been down tomorrow.  
  d. *The computer has been down tomorrow.  

3.3. The adverbial in a moment

Another important datum that lends strong support to the formulation of condition B has to do with the relationship of achievement versus nonachievement verbs to the future time adverbial
in a moment. This adverbial describes an extremely narrow time
bound, but is nonetheless still clearly a future time adverbial
under one reading. Given condition B, then, we would expect that
in a moment would be very restricted in its appearance in futurate
sentences. This is in fact the case.

Dowty 1973b presents four classes of verbs—describing states,
activities, accomplishments, and achievements. Under his analysis,
only achievement verbs have a COME ABOUT as the highest verb in
their remote structure representation. That is, only achievement
verbs represent a change of state at the moment of their realization.
Thus, only achievement verbs would seem to guarantee an upper time
bound, and we would then expect only achievement verbs to occur in
futurate sentences with the adverbial in a moment. Note the following
contrasts:

STATE
(16)  a. The computer is down tomorrow.
b. *The computer is down in a moment.

ACTIVITY
c. The Yankees play the Red Sox tomorrow.

ACCOMPLISHMENT
e. Nixon delivers a Watergate speech tomorrow.
f. *Nixon delivers a Watergate speech in a moment.

ACHIEVEMENT
g. Dean begins his testimony tomorrow.
h. Dean begins his testimony in a moment.

Only with achievement verbs is the described state completed
at the point in time to which it is ascribed. Thus, the moment that
Dean actually begins to testify, the state of beginning his testimony
is completed. Thus, only achievement verbs can occur in futurate
sentences with in a moment. As additional evidence, notice that
sentence (16d) has a nonactivity reading (in which the game will
begin in a moment), and that this reading is acceptable.

3.4. Indefinite future time adverbials
As a result of the progressive forms of the following sentences

(17)  a. Mary will { be taking} prelims next weekend
        when you call.
    B. *Mary { is taking} prelims next week when you
takes
        call.
c. Joe will { be cooking} dinner tomorrow when he's
        unexpectedly shot.
d. *Joe { is cooking} dinner tomorrow when he's
        cooks
        unexpectedly shot.
(17) e. Sue will \{bemoving\} the lawn tomorrow when she discovers the body.

f. *Sue \{ismoving\} the lawn tomorrow when she discovers the body.

and the apparent problems associated with predicting their occurrence, Prince decides that the futurate be-ing must be derived from a higher PLAN predicate. But she completely fails to notice that the same restriction applies to simple futurate sentences as to progressive futurate sentences. As a result, her contention that the two must have separate sources no longer seems correct.

The significant characteristic of (17), and of most of Prince's other examples, is that they contain an indefinite future time adverbial. The times when the call will be made or when the body will be found are not known and are therefore indefinite. The unacceptability of (17b), (17d), and (17f) then follows directly from my condition B, which says that there must be a definite upper time bound. Notice that each sentence also contains a specific binding time phrase, such as next week or tomorrow, and that these combined with after (rather than when) would make (17b), (17d), and (17f) all acceptable.

3.5. Some special idioms

Jenkins observes that there are some special idioms in English which can never appear as futurates:

(18) a. He will be right back.
   b. *He is right back.
   c. It will do you some good.
   d. *It does you some good.
   e. It (the sweater) will do.
   f. *It (the sweater) does.

He concludes that anyone advocating a transformational approach to futurates would have to mark these idioms as not undergoing the rule. Such marking would not be necessary with an interpretive rule. As (18b) shows, the problem with (18b) derives

(18) g. He will be back in a moment.
   h. *He is back in a moment.

from the fact that right back is the same type of adverbial as in a moment--i.e. it requires that a change of state occur at the moment of its realization; therefore, (18b) is completely predictable from condition B.

In the case of (18c) and (18e), both the do predicates are retentive. Therefore, (18d) and (18f) are regular. The fact that these idioms cannot appear in futurate form does not require marking.
4. **Condition C: No speaker control**

The third and last condition is that futurate sentences have the presupposition that the speaker has no control over whether or not what is described in the surface sentence will in fact result from the current state of affairs. That an additional restriction of the above type is needed can be seen from the sentence pairs in (19).

(19) a. Kurt has a date with Wanda June tomorrow.
b. I have a date with Wanda June tomorrow.
c. Kurt dates Wanda June tomorrow.
d. ?I date Wanda June tomorrow.

The problem is that (19d) is odd, whereas (19c), where the speaker is not the subject, and (19b), where a slightly different assertion is being made by the speaker about himself, are perfectly acceptable. As it turns out, there are analogous phenomena. In (20), (20a) is acceptable while (20b) is deviant.

(20) a. John believes it's raining out even though it's not.
b. *I believe it's raining out even though it's not.

The contrast derives from the fact that simple assertions presuppose that the speaker believes them to be true. Consequently, (20a) has among its entailments:

(21) a. John believes it's raining out.
b. The speaker believes it's not raining out.

These entailments are in no way incompatible. They simply involve a disagreement between two individuals. (20b), however, has (22),

(22) The speaker believes it's raining out.

instead of (21a), as one of its entailments. (20b) then involves the contradiction that the speaker both does and doesn't believe that it's raining. Hence the deviance of (20b).

It is my contention that a similar type of contradiction causes the deviance in (19d). Notice first of all that having a date for some future time differs from dating at some future time in that in the first, all arrangements have already been made, while in the second, action on the part of the participants is required for the action to be realized. (19d) is then different from the other three sentences in that only (19d) requires that the speaker perform some action after the time of the assertion and before the time of the achievement of the state described. Only (19d) is contingent upon future speaker action.

My hypothesis, then, is that for a futurate sentence to be acceptable, what is described by that sentence must be presupposed not to be contingent upon future speaker actions. If this
presupposition is present, then an argument similar to the one about (20b) could be made to show that of the sentences in (19), (19d) and only (19d) denies its own presuppositions and is, therefore, deviant.

As further evidence for condition C, consider (23).

(23) a. Dean testifies before the Senate Watergate committee tomorrow.
   b. [...as asserted by Senator Ervin, the chairman of the committee]
   c. [...as asserted by Dan Rather, a CBS reporter]

(23c) seems to be merely reporting the facts, while (23b) seems to be insisting that the testimony will be given.

Again, the contrast can be explained by reference to analogous phenomena. Consider the contrast in the following two sentences:

(24) a. It's too bad that John hates you.
   b. It's too bad that I hate you.

The that-clause in these two sentences is presumed by the speaker to be true. In (24a) the speaker is assuming something to be true over which he has no control; consequently, the sentence seems perfectly natural. In (24b), however, the speaker is asserting that something about himself which he assumes is true and over which he presumably has control, is too bad, so that (24b) has a funny flavor.

Similarly, in (23b) by Condition C, Ervin presumes that he can do nothing about the fact that Dean must testify. Since Ervin could in fact cancel Dean's testimony, (23b) amounts to an insistence on Ervin's part that he refuses to do so.

5. Conclusion

Without couching my analysis within any specific school, I have presented three semantic conditions which must be present for a sentence to appear in futurate form. To the best of my knowledge, the conditions account for all the distributional characteristics of these sentences.

Footnotes

*This paper was originally written for a syntax course in the spring of 1972 taught by Michael Geis, who spent many hours with me on this paper and provided many of the insights—especially condition C. I would also like to thank David Dowty and Jerrold Sadock for their help and comments on the first version, and Arnold Zwicky for his help and comments on this version.

1. Prince also notices that examples like
(i) The plane was exploding at 2 p.m. until the money was delivered at noon.
(ii) "The plane would be exploding at 2 p.m. until the money was delivered at noon.

show that in some environments the will can never be present. A great deal of her analysis pertains to past forms of will, and it may be that her notion of PLAN for this class of sentences is correct.

2. It should be pointed out that there are two wills in English—the volitional will and the future will. My discussion concerns only the future will. Volitional will may appear in if-complements.

3. One other set of constructions which I will not examine is in the complements of hope and the imperatives of such verbs as assume, suppose, imagine. It is my belief that even a third process is going on here, having to do with the fact that with these complements no assertion whatsoever is being made about the actual state of the world. That is, one can hope for, or command someone to imagine, anything whatsoever, including round squares.

4. These facts were first pointed out to me by Michael Geis.

References


Prince, Ellen. Ms. 1973. Futurate be-ing or why Yesterday morning, I was leaving tomorrow on the Midnight Special is OK. Paper delivered at the LSA summer meeting, Ann Arbor.

Adverbial -ing
Clare M. Silva

In a recent squib Berman 1973:403 asks 'what sorts of -ing nouns' occur in sentences like

(1) I'm going fishing.

Berman attributes to Ross 1972:fn. 16 the notion that the acceptability of (1) depends upon the analysis of the -ing form as a noun (rather than a verb). I submit that (a) what appear to be -ing nouns are not verbs or nouns, but rather adverbials, and (b) these adverbials are members of a class that may be defined by general semantic characteristics.¹

1. Syntactic properties.
The verbs which support these -ing constructions are deictic verbs of movement, including go, come, take, bring, and carry.

(2) a. Jane said she would \{\textit{come} \textit{go}\} fishing with us.
    b. Can we \{\textit{take} \textit{bring}\} Harry camping next week?
    c. He always carries that same knife hunting with him.

The do so test (Lakoff and Ross 1966) shows the -ing form to be within the verb phrase:

(3) a. John went fishing and I did so \{\textit{hunting} \textit{too}\}.
    b. He took a friend skiing and I did so \{\textit{skiing} \textit{too}\}.

The fact that these -ing forms have Ø pro-forms, illustrated in (4), would appear to be evidence for their being verbs (and for the movement verbs' being auxiliaries); compare the effects of VP Deletion in (5).

(4) a. I went fishing and John went too.
    b. Mary's gone shopping and Janet has gone too.
(5) a. I may fish and John may too.
    b. Mary's gone and Janet has too.

However, the complements that occur with the -ing forms are like those of nouns rather than verbs. In particular, the -ing forms occur with
prepositional objects but not with plain objects. Compare (6) with (7).

(6) a. Jake said he'd be sailing \{catamarans\} in a catamaran tonight.
b. Sue is hunting \{bear\} for bears.

(7) a. Jake said he'd go sailing \{*catamarans\} tonight.
b. Sue's gone hunting \{*bear\} for bears.

Despite this, and despite the fact that the -ing form appears in object position, it fails to function as a noun insofar as it cannot be (a) questioned by what or which, (b) pronominalized by it, that, or one, or (c) qualified by a nominal modifier:

(8) a. *(Which) \{fishing\} are you going tomorrow? b. *We want to go hunting, but John doesn't want \{it\} to go \{that\}.
c. *We're going \{our fishing\} \{some fishing\} \{good fishing\} \{fishing that lasts all day\}.

In the absence of evidence for the -ing form as a verb or noun, the only function that it can fulfill within the verb phrase is that of directional adverbial. Positive evidence for an adverbial function is provided by the forms being used (a) in response to the question where, and (b) in adverbial phrases headed by from.

(9) a. Where are you \{going\} \{taking him\}? \{Downtown\} \{Through the tunnel\} \{Fishing\}.
b. She has just come home from \{the university\}.

A peculiarity of the construction is that it may not appear with a very precise specification of place.

(10) a. He went fishing \{up north\} \{under the willow by the pier\} \{at the marked spot\}. b. She went shopping \{downtown\} \{at the Petite Boutique\} \{at the wig counter\}.
2. Semantic properties.

The class of forms that function as adverbial -ing includes the following:4

(11) a. dancing boating bowling
     skiing rowing sight-seeing
     skating canoeing caroling
     hiking sailing Halloweening
     jogging caving visiting
     cycling camping calling [= visiting]
     riding swimming

b. fishing
   hunting
   nutting
   clamming
   mushrooming
   berrying
   shopping

Other forms may be constructed by compounding some of the above:

(12) water-skiing duck hunting
     trout-fishing ice-skating
     deep sea fishing motorcycling

All of the forms of (11) refer to activities which are characterized by the following properties:

(13) a. the activity is recreational;
     b. the activity is physical;
     c. the activity is relatively unstructured as far as game-like rules are concerned;5
     d. in carrying out the activity, there is continued motion from one undetermined location to another (cf. (10) above).

The forms of (11b) are further characterized by property (14):

(14) the activity involves seeking out and attempting to take or acquire some physical object(s).

To verify (13), we note that a nonrecreational activity will not do--

(15) *He's going \{ working teaching farming studying \}.

nor will a nonphysical activity--
(16) *She went \{ puzzle-solving \}
day-dreaming
meditating

nor will physical, recreational activities that are structured in a game-like manner--

(17) *Let's go \{ racing \}
polo-playing

or involve movement constrained to occur within a relatively small radius--

(18) *They've gone \{ fungo-c catching \}
boxing
piano-playing
wrestling

Berman 403 wonders what the explanation is for the grammaticality of wenching and the ungrammaticality of screwing in a pair of sentences noted by Andy Rogers:

(19) a. He's going wenching.
b. *He's going screwing.

These grammaticality judgments are predictable, however. Both wenching and screwing can be characterized by (13a-c), since they are activities which it is our custom to view as recreational, physical, and relatively unstructured with respect to game-like rules. However, only wenching satisfies (13d), since wenching requires movement from one undetermined location to another in order to carry out the activity--i.e. from a point of departure (home, office, factory, library, etc.) to another place or places (bar, brothel, hotel, etc.)--while screwing does not necessarily involve movement from one location to another, but may be carried on within a relatively small radius. Wenching furthermore satisfies property (14) for subset (b) of (11), since wenching involves seeking out and attempting to take or acquire a wench, i.e. a female sex object.

Footnotes

1. I am grateful to Arnold M. Zwicky and Michael L. Geis for discussion and examples.
2. The one exception I find to this is with the form visiting, which will give

(1) I'm going to go visiting \{ sick friends \}
relatives
old classmates

3. The adverbial -ing form cannot be pronominalized by there, as would be the case if it were a locative adverbial:
(i) I went \{ *through the tunnel \} and Bill went there too.
   *fishing

4. Note that some of these items are constrained to occur with
   \textit{-ing}, whether in a progressive or in the adverbial \textit{-ing} construction:

(i) a. I \{ \text{was} \} mushrooming this morning.
    \text{went}
    b. *I mushroomed this morning.

(ii) a. We \{ \text{were} \} sightseeing for a while.
    \text{had gone}
    b. *We sightsaw for a while.

5. Bowling would appear to be an irregularity here, since it
   is structured for play and scoring.

References

Lakoff, George, and John Robert Ross. 1966. A criterion for verb
phrase constituency. Report NSF-17, Computation Laboratory,
Harvard Univ.
A Case of Early Lexical Insertion

Ronald Neeld

One of the basic principles of Generative Semantics is that lexical insertion may follow certain transformational operations (McCawley 1968, Fodor 1972). However, it has been an open question as to whether there is a single level where lexical insertion occurs, or whether it is staggered throughout a derivation. McCawley, for example, speculates that the proper level for lexical insertion might be after the operation of cyclic rules but before the operation of postcyclic rules. Fodor 1972 presents evidence that the lexical item beware must be inserted after Affix Hopping, and is therefore a case of rather late lexical insertion. Fodor points out that if all items can be inserted late, lexical insertion need not be staggered. But if evidence for cases of early lexical insertion can be found, then this evidence, along with the arguments for cases of late lexical insertion presented in McCawley 1968 and Fodor 1972, would support staggered lexical insertion.

One piece of evidence for rather early lexical insertion comes from the study of anaphora in English. Lees and Klima 1963 present an analysis of this area of language in which there is a rule of pronominalization which converts a full noun phrase to a pronoun under certain conditions. Within the framework of Generative Semantics the semantic representation of a sentence must include, at least in part, its logical structure. The Lees and Klima analysis is deficient in that it does not properly explain the relation between the logical forms and surface forms of sentences containing pronouns. I believe that a proper explanation of this relation must have a form roughly along the lines sketched by McCawley 1970. McCawley's analysis maintains that noun phrases are represented as variables in a predicate calculus, and that there are rules which specify that some variables are replaced by a full noun phrase while the other occurrences of the variable are replaced by pronouns. This proposal is superior to that presented by Lees and Klima on syntactic as well as semantic grounds, for it avoids the difficulties inherent in the transformational rule treatment of pronominalization (cf. Bach 1970).

Given this proposal, the constraints on pronominalization must be reformulated as constraints upon which variable can be filled in by a full noun phrase. The major condition is that presented by McCawley:
(1) "...a noun phrase may be substituted for any occurrence of the corresponding index which either precedes or is in a 'higher' sentence than all other occurrences of that index." (176)

This constraint allows us to account for the cases noticed by Ross 1967 where forward pronominalization is impossible.¹

(2) a. Bill's₄ realizing that he₄ was unpopular bothered him₄.
b. Realizing that he₄ was unpopular bothered Bill₄.
c. *Realizing that Bill₄ was unpopular bothered him₄.

Using McCawley's theory of anaphora, the remote structure of (2) is (using McCawley's notation):

(3)

Either NP₂ or NP₅ may have the variable x₁ replaced by the lexical item Bill. This gives either (2a) or (2b) (where Equi has applied in the latter). However, NP₄ cannot be replaced by Bill, due to constraint (1); the variable that NP₄ dominates does not either precede or command all other occurrences of the variable. By using the underlying variable approach to pronominalization, (3c) can be explained by constraint (1), which is needed anyway in a grammar of English.

The significance of the theory of anaphora for lexical insertion is that the replacement of variables by noun phrases must take place before Equi applies. If Equi applied first, NP₂ in phrase marker (3) would be deleted. Then, when the time came to replace the remaining variables, constraint (1) would not be violated by replacing NP₄ by the full noun phrase, and there would be no way to block (2c).² After the operation of Equi, the variable which NP₄ dominates in fact precedes all other occurrences of that variable (since NP₅ is to the right of NP₄). The point is that the operation of Equi destroys part of the information needed for the statement of
constraint (1). The replacement of variables by noun phrases and pronouns is a lexical insertion process. Since this process must take place before Equi, we have a case where lexical insertion cannot take place at the end of a derivation. Since there are also cases where lexical insertion takes place late in a derivation, the evidence presented here indicates that lexical insertion should be staggered.

NOTES

1. Ross tried to explain the restriction exhibited in (2) by claiming that pronominalization is a cyclic rule. This proposal fails in several respects. To begin with, Ross is using a theory in which pronominalization is a transformational rule, and we have already seen the deficiencies of such a theory. Furthermore, there is evidence that pronominalization cannot be cyclic, summarized in Postal 1971.

2. There is no restriction in general against having an antecedent in a complement sentence, with an anaphor to the right of the complement sentence:

(1) For Mary to hit him₁ would annoy John₁.

REFERENCES

Bibliographies on Small Subjects

Arnold M. Zwicky

Editor

Introductory Remarks.

This issue of Working Papers in Linguistics inaugurates what I hope will be a regular feature, annotated bibliographies on topics of current interest—either on points of analysis in particular languages or on theoretical issues. The bibliographies are intended to be reasonably complete with respect to material (a) published in books and the standard journals or (b) distributed through a regular channel of 'semipublication' (working papers, the Indiana University Linguistics Club papers, etc.). Unpublished materials will be cited if they are likely to be published or if they contain particularly important facts or ideas.

These bibliographies are tentative. Readers are invited to correct entries and fill lacunae; I hope that some of the bibliographies will eventually find their way into standard publications (IJAL and The Linguistic Reporter, for instance).

Readers are also invited to submit bibliographies for distribution in Working Papers, using the current bibliographies as models.
A coiv (connection-of-ideas verb) is an English verb that occurs in the frame

\[(1) \quad S \quad ((\text{to}) \quad NP) \quad S\]

that is, simultaneously with sentential (or indisputably desentential) subject and object, as in

\[(2) \quad \text{That he had a false beard on suggested (to us) that he was a spy.}\]
\[(3) \quad \text{Her learning to speak Mandarin fluently showed (the sceptics) how successful operant conditioning could be.}\]

Such sentences assert that the proposition expressed by the subject clause supports a conclusion, expressed by the object clause. Different verbs describe different degrees of support, different attitudes towards the conclusion, and different types of relationships between the two propositions.\(^1\) Because of their occurrence in (1), Ross 1973:549 calls coivs bisentential verbs.\(^2\)

A coiv's subject clause is always understood factively. Coivs in (1) are stative.

Nearly all coivs can occur with agentive subjects:

\[(4) \quad \text{Margaret suggested (to us) that he was a spy.}\]
\[(5) \quad \text{George showed (the sceptics) how successful operant conditioning could be.}\]

(in which case the coiv is nonstative and differs in meaning from the verb in (1)). The few which do not are marked (-A) in the list below. The occurrence of coivs with both factive and agentive subjects makes them a subclass of the FA (factive-agentive) verbs (Stampe 1968:137f.). because coivs, unlike the "psych" FA verbs frighten, astonish, etc., can take that-clauses as objects with both factive and agentive subjects, Stampe calls coivs FA-t verbs.

All coivs can occur with concrete subjects:

\[(6) \quad \text{The blood on the staircase reminds me that caution is necessary with this fellow.}\]
\[(7) \quad \text{His false beard guaranteed that he would be stopped at the border.}\]
The coivs in the list below are classified according to their ability to occur with human objects (whether marked by to, as in (2), or unmarked, as in (3)) when they also have sentential objects. Such human objects are referred to as dative in the following discussion. The occurrence of coivs with simultaneous dative objects and phrasal objects is discussed in section B.

Coivs

1. Dative obligatory (unmarked only): acquaint with, awaken to, apprise of, assure, convince, inform, instruct, notify, persuade, remind; various complex constructions, like let one know/realize ..., make one think/realize/believe..., make one sure/certain/ convinced..., cause/require one to believe/suppose....

2. Dative perhaps obligatory (unmarked only): teach, tell, warn.

3. Dative optional
   a. Unmarked: guarantee, show.
   b. Marked: argue, betray, communicate, convey, demonstrate, emphasize, establish, explain, hint, illustrate, imply, indicate, intimate, make a case, mean, proclaim, prove, reveal, say, signal, signalize, signify, suggest, testify; questionable point out, betoken (-A), denote (-A); various complex constructions, like be/give a sign/an indication/ proof/evidence..., make it clear/known/understandable....

4. Dative perhaps permitted (marked only): foretell, point to, predict, verify.

5. Dative prohibited: entail (-A), insure, make it sure/certain..., necessitate (?-A), presuppose.

Most coivs occur as parenthetical verbs, as in

(8) Douglas, Shirley hinted (to us), was a Lapsarian.

Preserving the classification above, I list my judgments:

Parenthetical coivs

1. All except acquaint and awaken (dative obligatory).

2. All. Dative obligatory for tell, optional for teach and warn.

   b. All except make a case, mean, signalize, signify, perhaps betray, and the marginal betoken and denote. Dative optional.

4. All except point to. Dative optional.

5. None.
Also, many coivs occur as quotatives, as in

(9) 'I'd like to see your macramé', Derek reminded (her).

Again, I give my judgments, using the same classification:

**Quotative coivs**

1. **Apprise, assure, inform, notify** (dative obligatory); **instruct, remind** (dative optional)

2. **Tell** (dative obligatory), **teach, warn** (dative optional).

3. **Dative optional:**
   a. **guarantee**
   b. **argue, communicate, emphasize, explain, indicate, proclaim, reveal, say, suggest, testify, point out,** and perhaps **hit, intimate, and signal.**

4. **Predict** (dative optional), **foretell** and perhaps **verify** (dative prohibited).

5. None.

**B. The literature**

Several coivs (explain, imply, mean, predict, presuppose, prove, say, signify, verify) have been of philosophical interest and have therefore received considerable discussion in the philosophical literature. However, little of this material bears on general semantic or syntactic properties of the class. The extensive treatment of mean, for instance, largely concerns examples like

(10) 'Indolent' means lazy.

for which there are no analogues with other coivs.

Stampe 1968 examines the grammar of mean to support two philosophical theses: (a) that objects of mean are not referring expressions and (b) that sentences like

(11) A lantern placed in the tower means that the invasion is by sea.

are ambiguous, having one reading with the syntactic source

(12) By a lantern placed in the tower Agent means that the invasion is by sea.

(supporting the philosophical analysis of 'nonnatural' mean by Grice 1957; cf. also Grice 1968) and another with the syntactic source
(13) The fact that there is a lantern placed in the tower means that the invasion is by sea.

Stampe is careful to indicate a number of ways in which mean has properties different from other coivs. Davis 1970 criticizes Stampe's (a) arguments and supports the contention that (11) is transformationally related to (12), but argues further that (12) derived from

(14) Agent uses a lantern placed in the tower to mean that the invasion is by sea.

or

(15) Agent uses a lantern placed in the tower, by which Agent means that the invasion is by sea.

Coivs figure, without detailed comment, in some early transformational works; Lees 1960:23 lists two subclasses [\(V_{t_{4}2}\) demonstrate, mean, prove, show, signify, ...] and [\(V_{t_{4}3}\) convince, inform, persuade, tell'). A Harris-transformational description (Vendler 1968:74 lists coivs in what is essentially the factive-agentive class: 'Obq: surprise, astonish, shock, imply, entail, indicate' (where Ct indicates a container element for a nominalization, \(V\) that the container is a verb, \(\ast\) that the nominalization appears in subject rather than object position, \(ad\) that the nominalization can be either a that-clause or Poss-ing complement). Oddly enough, coivs do not seem to be mentioned as a class in the Indiana University lists of word classes (Alexander and Kunz 1964, Bridgeman et al. 1965), the Kiparsky's discussion of factivity (Kiparsky and Kiparsky 1970), or the UCLA grammar (Stockwell, Schachter, and Partee 1973).

G. Lakoff 1968:21f., citing a personal communication from Rosenbaum, claims that

(16) It suggests itself to me that Harry is a liar.

supports Lakoff's criticism of Rosenbaum's earlier treatment of subject movement, because this treatment requires Extrapolation to precede Reflexivization, whereas the derivation of (16) requires Reflexivization to precede Extrapolation. But Postal ms.: sec. I.D argues that the Lakoff criticism depends upon the (inadequate) view that Reflexivization is a replacement rule requiring full constituent identity and that in any event, the reflexive in (16) 'does not seem to correspond to any argument in logical structure'.

Lee 1969:52 lists verbs taking 'subject' by-clauses, as in

(17) The bloodstain proved to us that Max was the murderer by being of Type AB.

His class II (prove, demonstrate, show, verify, imply, foretell, emphasize, guarantee, betray) contains only coivs, and his class IV contains some (persuade, remind, convince, teach; but order encourage, challenge, force, doom are not coivs). Lee speculates that all the subject by-clause verbs 'are causative and take sentential objects'. In later sections (6 and 7) he argues that
sentences with subject by-clauses are derived by extraction from a subjectless structure—for (17), roughly

(18) Ø proved to us [that Max was the murderer] by [the bloodstain be of Type AB]

(cf. (12)). In Lee 1971 it is argued that 'the verbs in indirect causative constructions [like (2), (3), (6), (7), and (17)] are decomposable into cause plus another verb, but the verbs in direct causative constructions [like (4) and (5)] are not' (L-86); as in the earlier work, the subjects of indirect causatives are analyzed as deriving from by-clauses.

Bresnan 1970:304-5 appeals to coivs in an argument that complementizers subcategorize verbs, citing the contrast between the following:

(19) For him to eat cabbage means nothing.
(20) #This means for him to eat cabbage.

and the ungrammaticality of

(21) #For him to eat cabbage means that he will be sick.

To my knowledge, the constraints on subjects and objects (both phrasal and clausal) of coivs have never been investigated in detail.

Of the coivs, only the following seem to act as to-Dative Movement verbs when they have phrasal, rather than clausal, objects: promise, show, signal, teach, tell, and marginally explain. Green 1971:sec. IV.B.1 notes that although teach and show occur in both

(22) Mary taught linguistics to the class.
(23) Mary taught the class linguistics.

these sentences are not in general paraphrases, and for these two verbs the marked dative doesn't occur with abstract subjects and occurs with many fewer sorts of abstract objects than the unmarked dative (cf. Gruber 1965:sec. 7.2 on teach). In the next section she argues for the derivation of (22) and (23) from structures like those underlying (24) and (25), respectively:

(24) Intending the class to learn linguistics, Mary taught the class.
(25) Mary got the class to learn linguistics by teaching the class.

Also, in sec. III.C.2.e she suggests that explain (along with describe, recommend, recount) might be a for-Dative Movement verb rather than a to-Dative Movement verb. This leaves only promise, signal, and tell as clear to-Dative Movement coivs.

In a footnote (sec. IV.B.1), Green argues that the Internal Sentential NP Constraint, (3.27) of Ross 1967, is not responsible for the restriction involving abstract objects of teach and show.
In Ross 1973 it is maintained that the anomaly of sentences like

(26) *It proves/shows/indicates/suggests/means/implies/
entails that he is unfond of me that his finger-
prints were on my throat. (549)

is due to the Same Side Filter: 'No surface structure can have both
complements of a bisentential verb on the same side of that verb'
(554).

The relationship of coivs to the rules of Equi-NP-Deletion and
Raising is of some interest. All the coivs of groups 1 and 2 in
section A above govern Equi, with the exception of assure and the
possible exception of inform. Note that Grosu 1971:ch. 3 claims that
Equi-governing verbs are all decomposable into CAUSE TO COME TO X,
where X is a construct, like INTEND, requiring identity between its
subject and the subject of the S embedded in it. The remaining
cois (groups 3 and 4) govern Raising rather than Equi, if they
govern either rule; a list is given below. Some also occur with as
constructions (Postal ms. 1972:sec. VI.G):

(27) Alice revealed that Jordan was the culprit.
(28) Alice revealed Jordan to be the culprit.
(29) Alice revealed Jordan as the culprit.

These are marked AS in the list.

Also, most Raising coivs are subject to the Dative Object
Constraint (Postal ms. 1972:sec. IX.C), that only pronouns are
natural in object position, although full NP objects moved out of
object position (by Passive, for instance) are permitted:

(30) We argued him to be the long-lost king of Barataria.
(31) We argued Ralph Merkin to be the long-lost king
of Barataria.
(32) Ralph Merkin was argued to be the long-lost king
of Barataria.

Coivs not subject to this constraint are marked -DOC in the list.

Raising coivs

3. a. guarantee, show
   b. argue, betray (?AS), ?communicate, demonstrate (?AS, -DOC),
      establish (AS), ?illustrate, imply, indicate (AS), make
      a case (AS), prove (-DOC), reveal (AS, -DOC), ?signal,
      suggest (AS).

4. predict (AS, -DOC), verify (AS)

5. insure, presuppose (AS, -DOC).
Footnotes

*The work reported here was instigated by the 1970 Mathematical
Social Sciences Board research seminar in mathematical linguistics,
sponsored by the National Science Foundation and held in conjunction
with the Linguistic Institute at the Ohio State University.

1. It is perhaps noteworthy that no coivs incorporate negation;
deny, conceal, deemphasize, falsify, disprove, oppose, contraindicate,
rebut, subvert, contravene, contradict, controvert, gainsay,
disaffirm, impugn, repudiate, and so on do not fit in (1).

2. Bisentential verbs in this sense must be distinguished from
various classes of verbs that have been argued in certain cases to
have remote structures with sentential subjects and objects—for
instance, causal impingement verbs, as in I hit/pushed the ball over
the fence (Fillmore 1971:46-7); stative causatives, like cause, make,
require, and two types of nonintentional accomplishments, kill
[accidentally] and [animate subject] kill (Dowty 1972); psych verbs
(McCawley 1972); and Flip-perception verbs (Rogers 1972).

3. The constructions with give, unlike the simple verbs, occur
with both marked and unmarked datives.

4. Also, since Extraposition can be argued to precede Pronominal-
ization, (14) seems to prove that Reflexivization and Pronominalization
must be distinct rules.

5. In fact, suggest is the only coiv that occurs in the construction
in (15). Moreover, since sentential subjects of suggest are factive but
its sentential objects are not, it would be remarkable if Reflexivization
were applicable. Presumably, suggest itself is an 'absolute reflexive'
(Lees and Klima 1963:24-6), like absent oneself and perjure oneself.

C. Items cited

Alexander, D. and W. J. Kunz. 1964. Some classes of verbs in
English. Linguistics Research Project, Indiana Univ.

Bierwisch, Manfred and Karl Erich Heidolph (eds.). 1970. Progress

Bresnan, Joan W. 1970. On complementizers: toward a syntactic theory
of complement types. FLang 6.3.297-321.

Bridgeman, Loraine I., Dale Dillinger, Constance Higgins, P. David
Seaman, and Floyd A. Shank. 1965. More classes of verbs in
English. Linguistics Research Project, Indiana Univ.

Davis, Steven. 1970. Meaning and the transformational stew. FLang
6.1.67-86.

Dowty, David R. 1972. Studies in the logic of verb aspect and time
reference in English. Studies in Linguistics, Dept. of Linguistics,
Univ. of Texas. Reprint of 1972 Ph.D. dissertation, Univ. of Texas.

MSSL 24.35-56.

Green, Georgia M. 1971. A study in pre-lexical syntax: the interface

Strawson 1967:39-48, Steinberg and Jakobovits 1971:53-9, Travis
and Rosenberg 1971:435-44.

Grice, H. Paul. 1968. Utterer's meaning, sentence-meaning, and word-
Grosu, Alexander. 1971. On coreferentiality constraints and Equi-
Ohio State Univ.
Gruber, Jeffrey. 1965. Studies in lexical relations. Ph.D.
dissertation, M.I.T. Distributed 1970 by IULC.
Kiparsky, Paul and Carol Kiparsky. 1970. Fact. In Bierwisch and
Heidolph 1970:143-73. Reprinted in Steinberg and Jakobovits
Lakoff, George P. 1968. Deep and surface grammar. Reproduction of
1966 ms., distributed by IULC.
Text of: Subjects and agents, 1970 Ph.D. dissertation, Ohio
State Univ.
Lees, Robert B. 1960. The grammar of English nominalizations. IJAL
26.3, Part II.
——— and Edward S. Klima. 1963. Rules for English pronominali-
145-59.
McCawley, Noriko Akatsu. Ms. 1972. Emotive verbs in English and
Japanese.
Rogers, Andy. 1972. Another look at Flip-perception verbs. CLS
8.303-15.
Rosenberg, Jay F. and Charles Travis (eds.). 1971. Readings in the
philosophy of language. Prentice-Hall, Englewood Cliffs, N.J.
Ross, J. R. 1967. Constraints on variables in syntax, Ph.D.
dissertation, MIT. Distributed 1968 by IULC.
Univ. Press, London.
Bibliography II. Cyclical Segmental Rules*

A.M.Z.

A. Introductory remarks

Along with the assertion in Chomsky 1965:ch. 3 that syntactic transformations apply (as a group) cyclically, early generative phonology assumed that at least some phonological rules applied in a group, first to innermost constituents, then to larger and larger constituents. The position was first enunciated for English stress rules in Chomsky, Halle, and Lukoff 1956. Since then it has been argued for Serbo-Croatian stress and pitch (McCawley 1962), Spanish word stress (Foley 1965:sec. 5.4 and Harris 1969:93-6, 125-7), German sentence stress (Kiparsky 1966) and intonation (Bierwisch 1966), Japanese accent (McCawley 1968:ch. 3), and various other prosodic phenomena; the analysis for English stress is developed further in Chomsky and Halle 1968:ch. 2, secs. 1-5; ch. 3.

Arguments for cycles are based on the fact that some rule A must apply before another rule B in certain forms, while B must apply before A in others, or on the fact that A must apply twice in the same form. Consequently, the cyclicity issue is tied up with problems of local ordering, iterative application, global rules, simultaneous ordering, and anywhere rules, which are not surveyed here.

Cyclical rules may be classified according to their domain of application (below the level of the word, both below and above, or only above) and according to the type of feature predicted by the rule (prosodic or segmental). It has been generally assumed that some prosodic rules are cyclic, though even prosodic cycles below the level of the word have been disputed (as in the reanalyses of English word stress by Lee 1969 and Ross 1972). The prediction of segmental features by cyclical rules, however, has always been an uneasy point. The cautious position of Chomsky and Halle 1968:349-50 is that

Examples of cyclical application of rules seem to be restricted to prosodic features and segmental modifications associated closely with prosodic features...We have experimented with cyclical rules in accounting for segmental features...but we are at present inclined to believe that all cases explored can be handled better with noncyclical rules.

It would, however, be premature to rule out the possibility that cyclical rules may play a role in the segmental phonology as well.
In the next section I list (roughly in order of their original appearance) the cases I know of where cyclical segmental rules have been suggested. These concern either word-internal rules or rules that apply in both internal and external sandhi; I no of no cases where an analyst has argued for segmental cyclical rules above the level of the word.

B. The literature

The first cases discussed were word-internal cycles in Russian (Halle 1961, 1963; Lightner 1962, 1963a, 1963b, 1963c, 1963e, 1965a, 1965b, 1966a) and other Slavic languages—Old Church Slavonic (Lightner 1963f, 1966b) and Polish (Lightner 1963d). There is a summary of the OCS and Russian evidence in Lightner 1972:ch. 4. The Russian analyses have been disputed by Kayne (ms. 1967).

The McCawley 1963 analysis of Serbo-Croatian stress and pitch orders several rules introducing and deleting glides and vowels within a word-internal cycle.

Cyclical application has been used to account for alternations of /e/ and /o/ in Indo-European languages by Bever and Langendoen 1963, with development for Old English by Bever 1963 and for Greek by Langendoen 1963.

Hale 1965:299-300 discusses a Papago rule of unstressed vowel reduction which he says 'applies cyclically from right to left' (300), adding in a footnote that

It is almost certain that the superficial phrase marker...provided by the syntax is relevant to the correct formulation of this rule—the details are still under investigation...It appears, at present, that the correct formulation of this rule will be highly similar to the formulation of the English stress rule given by Chomsky and Halle in their The Sound Pattern of English (forthcoming).

and that a similar length alternation had been described for Tübatulabal by Voegelin 1935.

For Sanskrit, consider Zwicky 1965:sec. 2.3 (a putative case of rule repetition in internal and external sandhi) and 4.1.3. (a putative case of a word-internal segmental cycle). The latter case depends upon the unity of the so-called ruki rule, which is in question (cf. Zwicky 1970).

Schane 1968:ch. 1 treats a case of rule repetition in internal and external sandhi (the French Truncation rule). Schane's cyclicity argument is disputed by Milner 1967, and Selkirk 1972:ch. 4 gives an analysis in which cyclical application is replaced by reference to one or two instances of the word boundary # in surface structure.

The word-internal cyclic rules of The Sound Pattern of English fall together in the ordering, and all but rule (16) (which changes \( i \) to \( y \) and \( y \) to \( i \)) are rules of primary stress assignment...We noted that the justification for ordering (16) before [the Alternating Stress Rule] is not overwhelming, and there is no relation between (16) and [the Main Stress Rule]. If, furthermore, the analysis is revised in such a way as to drop rule (16) from the cycle, then the cycle would be restricted to a single elaborate schema abbreviating a complex set of rules...all assigning primary stress in certain positions. In Chapter Three we explained why we were unable to accept this analysis, but it seems sufficiently attractive for more thought to be given to its consequences. (Chomsky and Halle 1968:237)

The cyclical rules of Italian presented by Saltarelli 1970: 78-89 include (in addition to stress assignment) rules predicting length of consonants, glide formation, glide deletion, vowel ellipsis, and consonant ellipsis. The rules are cyclical by virtue of applying both within words and between words.

Carrell 1970 argues for cyclical application of tone level rules in Igbo, according to Harms 1968:97. Harms 99-100 also develops a case for a word-internal cycle for a vowel insertion rule in Koni.

Drachman 1969:123-5 claims that a contradiction in rule ordering motivates a word-internal cycle for a shwa-insertion rule in Twana.

Nasal harmony within the word in Desano is analyzed as involving cyclical application of rules by Kaye 1971.

Klamath has been argued to have a word-internal cycle by Kisseberth 1972a, 1972b, and Kean 1973. White 1973:ch. 4 gives counterarguments to Kisseberth.

In a discussion of Sundanese nasalization, Howard 1972:99-105 offers a word-internal cycle as an alternative to the local ordering treatment of Anderson 1972.

Kaye and Piggott 1973 argue for word-internal cyclical application for the Ojibwa T-Palatalization rule.

Brame 1972b considers the general hypothesis that 'only stress-assigning rules may be cyclic' (63), suggesting a reexamination of the English \( y \leftrightarrow i \) rule. Brame goes on to argue that an English vowel reduction rule and a Spanish glide formation rule are (word-internal) cyclic. Since both rules mention stress (though they don't predict stress), Brame advances the hypothesis that 'only rules that specify the feature stress in the matrix of the affected segment may be cyclic' (71). Several of the cases cited above do not conform to this generalization, though reanalysis might well be called for.

Footnote

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C. Items cited


1963c. On the present tense theme e/o in Russian. MIT QPR 68.190-3.
1963f. The shift of s to x in Old Church Slavonic verb forms. MIT QPR 70.298-300.
Voegelin, Carl F. 1935. T'bataulabal grammar. UCPAAE 3k.2.
A. Introductory remarks

Of the many combinations of the form \( N + N \), \( N's + N \), and \( \text{Adj} + N \) in English, some have been classified as compounds, others as phrases or syntactic groups. Aside from orthographic considerations, there are two main criteria for classification—status as a word, and stress.

The first, and more traditional, approach treats as compound 'a combination of two or more words so as to function as one word, as a unit' (Jespersen 1942: sec. 8.1), 'a combination of two words forming a unit which is not identical with the combined forms or meanings of its elements' (Kruisinga 1932: sec. 1561), or 'vocables which, though felt and used as single words, are made up of two or more elements each of which may also be used as a separate word' (Zandvoort 1965: sec. 803). This approach is subject to the criticism that notions like unit are intolerably vague.

The stress criterion—forestress, as in family affair, doctor's office, and blackboard, as opposed to afterstress, as in family tree, doctor's dilemma, and black board—is clearly enunciated by Bloomfield 1933: 228: 'Whenever we hear lesser or least stress upon a word which would always show high stress in a phrase, we describe it as a compound-member: ice-cream [ˈaɪsˈkrɪm] is a compound, but icecream [ˈaɪs ˈkrɪm] is a phrase, although there is no denotative difference of meaning'. Both types of criteria are reviewed by Marchand 1960: sec. 2.1, who maintains that stress is criterial for certain types, while the 'underlying concept'—the nature of the syntactic or semantic relationship between the elements in a combination—is a significant factor in others. Quirk et al. 1972: 1040 consider stress, morphological properties, and productivity as distinguishing factors:

It is usual to emphasize the distinction between the word, where convention and semantic integration fix a stress and rhythm which the individual cannot alter, and connected speech, where the disposition of stresses is subject to the speaker's will and the meaning he wishes to convey. There is much validity in this but it must not be pressed too far, since it depends on a much sharper distinction between phrases and (compound) words than English grammar and lexicology in fact warrant. It will not do to say that initial stress...indicates compounds, and final stressing...the syntactic phrases of connected speech. We have seen
compounds like down 'stairs which (despite similarity with phrases like 'down the 'street) we would not wish to analyse as phrases. And still 'life (in painting), which is usually stressed in BrE as though it was a phrase, shows that it is a compound in having a different plural (still lifes)... So too there are initial-stressed phrases that linguists do not normally regard as compounds, since (as is not general in word-formation...) we are as free to form such sequences as we are to form any other kind of syntactic unit:

The 'strawberry picking' has gone well.
The 'cabbage sowing' has gone well.

They go on to suggest that 'the stress distribution provides a firm basis for distinguishing not between compound and phrase but different underlying relations between the juxtaposed items', citing pairs like 'toy factory - toy factory', 'bull fight - bull calf', 'French teacher - French teacher', and 'slate quarry - slate roof.

Some estimate of how complex the problem is can be gained from a survey of the types of N + N combinations with afterstress (contrasting with the 'normal' forestressed combinations). Poutsma 1914: ch. 23 lists the following types:

first nouns expressing qualities:
  substance: cotton, apron
  indicating embodiment of a quality: giant, tree, infant
  colony
  state or function (appositional): parent, bird, clergyman
  cousin
  origin or habitat: Gladstone, bag, Ceylon, tea, Bengal
  tiger

first nouns expressing relations:
  possession, origin, agency: United States, minister,
  pioneer, work, party, measures
  object relation: tariff, reform, Government, defeat
  appositive or specializing of relation: angling, mania,
  marriage, state
  other prepositional relations: chance, acquaintance,
  Court, ladies, surprise, visit, university, education
  predicatives: maiden name, schoolboy, days, student
  life

to which we may add various types from Kruisinga 1932, among them the lad Robert (sec. 1181), the Savoy Hotel (1182), Buckingham Palace (1393–4), his two-volume work (1854), two dozen handkerchiefs (1855), South America (1877). King Edward, Mr. Jones, the river Rhine, Lake Ontario (1886), and emperor-king (1888). Even these do not exhaust the types; from various sources, I can add: Ann-Margret, Taft-Hartley,
  John Jones, Hotel Ritz, Detective Inspector, Iowa City, Madison Avenue,
Dole pineapple, Grimes apple, Cadillac Riviera, Oxford University, Eliot Hall, Tuesday meeting, science fiction, machine intelligence. 102 Broadway, Columbus, Ohio, September 1973, one hundred two, Sam Smith Junior, and TV Guide. Poutsma's classification is not, of course, definitive and may require further division or recombination.

B. The transformational literature

Nearly all transformational treatments of phrases and compounds, beginning with Lees 1960, follow Bloomfield in taking stress to be criterial. Thus, Lees limits his study of compounds to combinations with forestress, although he observes that

It is possible that some transformation rules in the grammar differ solely in the kind of unitary stress pattern which they confer (in an as yet unspecified way) upon the transforms, for there are many cases of composites which seem to differ only in this one respect, as for example, Madison Street vs. Madison Avenue, or apple cake vs. apple pie. Perhaps each individual morpheme is characterized by always taking in composition some one of a small number of (syntactic) junctures introduced into the sequence by the transformation itself and yielding then, by phonological rules, in the manner suggested by Chomsky, Halle, and Lukoff, the appropriate stresses. This view is supported by the fact that, at least in the author's speech, all composites in -street and -cake are compounds, while all in -avenue and -pie are invariably nominal phrases. These favored junctures would then, presumably, be overridden by certain constructions, so that, e.g., woman and doctor could combine to yield both a compound and a nominal phrase, but from differing source-sentences by two different transformational rules, say:

The doctor is a woman. + wôman dôctor
The doctor is for a woman. + wôman dôctor (120)

In an appendix (180-5), Lees reconsiders his earlier complete separation of forestressed compounds and afterstressed phrases, noting that (a) it treats some synonymous pairs with identical syntactic structure as nevertheless in contrast, (b) it fails to explain the contrast between afterstressed combinations like young genius and child prodigy, only the former having adjectival properties, and (c) it fails to give an account of the ambiguity of phrases like legal document and logical fallacy. Accordingly, Lees develops the ideas in the long quotation above, suggesting that compounding transformations might assign both forestress and afterstress, while the shift of elements from predicate to prenominal position invariably yields afterstress. He then gives lists of 12 types of afterstressed combinations paralleling some of the 49 types of forestressed combinations treated in the main body of the work.
This proposal by Lees, that compounding transformations assign stress pattern (or, equivalently, that stress assignment rules consider earlier stages in derivations), is developed further by several authors—by Lees himself in two 1970 articles that attempt to reduce the number of source types for compounds, by Gleitman and Gleitman 1970: ch. 3, in the context of a psycholinguistic investigation, and by Levi 1973, who is interested in the derivation of combinations like electrical engineer, parallel to mining engineer (Adj + N vs. N + N: 'My claim is that both the logical structure of these two NPs, and their derivations are precisely parallel, up to the point where certain compound-initial nouns are converted into derived surface adjectives' (334)).

A survey of the literature on (forestressed) nominal compounds is to be found in Zimmer 1971 (supplemented by Zimmer 1972b), where there is also a criticism of all positive characterizations of compounds (by a listing of types or by a listing of compounding rules) and some discussion, further developed in Zimmer 1972a, of a necessary condition for compounding, the existence of an 'appropriately classificatory' relation. Zimmer 1971 includes an appendix on afterstressed combinations, with criticism of Marchand's treatment. Zimmer observes that there is 'a great deal of dialect variation which is not compatible with the neat distinction between transpositional derivation, involving no addition of semantic elements and resulting in phrases, and semantic derivation, involving addition and resulting in compounds' that Marchand proposes (C19), 2 that some examples do not square with Marchand's distinction in any event, and that Marchand refers to 'implicit contrast' to save his analysis. 3 Zimmer concludes:

Given that there are a lot of idiosyncratic factors involved in the compound vs. nominal phrase distinction, it is probably still true that the relations typically embodied in nominal phrases are of a type rather different from what is found in most compounds...And compounds do seem to have a greater tendency to become idiomatized. However, it would appear that the condition of a relation's being "appropriately classificatory" applies to most nominal phrases as well as to compounds. (C19)

The Lees position, however developed or transmuted, involves transformational prediction of stress contours. Consequently it is at variance with restrictive theories about the relationship between syntax and phonology, which would require that only information available in syntactic surface structure can condition phonological rules. In fact, the description of combinations by Chomsky and Halle 1968: secs. 2.1, 3.9 adheres to a more restrictive theory: they assume that the stress differences correlate exactly with the distinction between compounds (which are Ns) and phrases (which are NPs), so that stress assignment rules need be sensitive only to the surface syntactic distinction between N and NP. 4
This very Bloomfieldian analysis is also adopted by Halle and Keyser 1971:sec. 1.2. It is subject to the criticisms put forth by Lees and expanded on by Schmerling 1971, who concludes:

It does seem to be the case that in some instances stress assignment is governed by the choice of head or attribute, in others by syntactic characteristics (whether the attributive has the superficial form of an adjective or a noun). There ought to be rules that capture these generalizations. In other cases stress assignment is an idiosyncratic property of individual compounds and ought to be indicated in the lexicon as such. The fact that stress placement is sometimes predictable should not make us try to predict it always. (60-1)

Schmerling 63-4 also mentions an alternation between after-stress in predicate compound adjectives (bränd név) and forestress when these compound adjectives appear in prenominal position (a bränd név cár). She fails to see any satisfactory account for such facts. The facts, as it turns out, have been known for some time; a summary in Bolinger 1955b indicates that 'Jespersen credits James Elphiston with having noted in 1765 the rhythmic shift of stress in words like almost, forthwith, therein, for example, the laws written therein versus the laws therein written' (139) and lists many examples. It remains for someone to distinguish the cases in which backshifting of stress is obligatory, optional, and prohibited, and to incorporate these observations in a grammar of English.5

Footnotes

1. Although my examples are primarily nominals, the discussion below applies as well to adjectival and verbal constructions.

2. For other examples of dialect variation, consider the fact that while American English typically has forestress in combinations with Building and House, British English typically has afterstress: Eliot House, the Brixton Building (American), India House, the Clarendon Buildings (British).

3. The notion of implicit contrast, though unacceptably fuzzy, has some appeal. The idea is that certain items are stressed because they are salient (they are in contrast with a number of other items from a large set, whereas the items with which they occur are not,
or are unmarked representatives of some class). For Marchand, implicit contrast explains forestress in bookstore, hardware store, etc. (as opposed to hardware emporium, book warehouse, etc.). John Lyons has offered to me ingenious 'implicit contrast' accounts for the following puzzling facts about N + N combinations: (a) the difference between Smith Street and Smith Avenue/Place/Terrace/Lane/Way/Circle..., and (b) the difference between Oxford and Cambridge colleges with the word college in them (which are forestressed: King's College, New College), and those with hall in them (which are afterstressed: New Hall, Lady Margaret Hall); street and college are the unmarked designations, hence less stressed, while other names for thoroughfares, and hall instead of the expected college, are stressed in contrast.

Similarly, Christopher Longuet-Higgins has suggested that the large number of afterstressed combinations with student as their first element (student affairs/expedition/discipline/rule/vote/power/revolt/grant/teaching...) comes from the occurrence of such combinations in contexts where various aspects of students are under consideration, so that only the second element is salient.

Another minor mechanism that might be supposed to explain the position of stress in N + N combinations is contamination. Perhaps the forestress of Brazil nut (as opposed to the afterstress of most combinations with geographical names as their first elements) is the result of contamination from peanut, walnut, hazelnut, chestnut, etc.

It should be noted that although implicit contrast and contamination are plausible accounts of the invention of, or historical change in, certain forms, the case for reference to implicit contrast and contamination in a synchronic grammar of English is less clear. Perhaps the position of stress in combinations with street is simply learned, and must be indicated as a property of the word street in modern English, and perhaps the fact that Brazil nut is forestressed is also learned, and must be listed as an exception in a grammar.

4. Plus some indication of exceptionality:

The fact that a phrase is not subject to the Compound Rule might be formally indicated in various ways: for example, by a feature specification of the boundary between the constituents, in which case the rule can be limited to boundaries not containing this feature... Alternatively, we might provide for an ad hoc deletion of the node N dominating such compounds. (Chomsky and Halle 1968:156).

5. Various other stress peculiarities need further study. There are examples in which stress shifts to the right when a forestressed combination itself appears as the first element of a compound: household cleanser instead of household cleanser (compare sink cleanser), overseas rates (compare postage rates), back seat driver (compare motorcycle driver—a minimal pair), ball point pen (compare fountain pen and quill pen, etc.
In still other cases of combinations appearing as first elements of combinations, there is an optional shift to the right, perhaps to avoid ambiguity: afterstressed combinations like English language and Royal Society either keep their stress (English language research, Royal Society Président), or shift it to the next element (English language research, Royal Society professeur). The first of these options is the stress we would predict on other grounds (compare English research 'research on English' and Institute professeur), but it yields combinations that are ambiguous with respect to their immediate constituent division ('research on the English language' and 'language research in English', 'professor in the Royal Society' or 'society professor who is royal').

Finally, there are several familiar problems surrounding the distribution of secondary and tertiary accents—élévateur boy vs. élevator operator and Long Island vs. a long island. Since these do not concern which element of a combination receives the greater stress, I will not review the literature here. Note, however, that some of the afterstressed N + N types listed above have tertiary rather than secondary stress on their first elements (Mr. Jones, South America, King Edward, as opposed to John Jones, Elliot Hall, Grimes apple, etc.).

C. Items cited

_________. 1972b. Postscript to "Some general observations about nominal compounds". Stanford WPLU 8:153-5.