Up the Noun Phrase: Another Stress Rule

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The extension of transformational theory given in Bach (1977) singles out both sentences and noun phrases as having special status. Bach says (p. 35)

> Barbara Partee has pointed out to me that these two categories correspond to the two categories that Frege considered to be the only complete expressions of a language: names and sentences. There are a number of respects in which these two categories seem to have a special status. As far as I know, every natural language does have these two syntactic categories, and it is hard to imagine a natural language that did not. . . The two categories are related in an intimate way to two necessary uses of language: to refer to objects and to make statements that can be true or false.

The special status of noun phrases and sentences has also been noted in syntax. Both are claimed to be cyclic domains (for example, in Akmajian (1975)) and certain transformations have been proposed as applying to both domains (as in Chomsky (1967)). In Bing (1979) I claimed that within metrical structure the domain of the root sentence is special; I would like to claim here that the noun phrase also has a special status in metrical structure. I will argue for a principle that says (with some qualifications) that in metrical structure, noun phrases are more prominent than other kinds of phrases.

I will be making the following assumptions. First, I am assuming that stress and intonation can be described as separate but interdependent systems; I am not assuming an accent system such as that argued for in Bolinger (1958). I am also assuming a system of prominence such as that described in Liberman (1975) and Liberman and Prince (1977). The Liberman-Prince hypothesis treats stress as a relative rather than an absolute value. That is, words, syllables, and phrases do not have an absolute value (primary, secondary, tertiary, etc) but have the values weaker or stronger only in relation to other words, syllables and phrases in the structure. The statement of the Nuclear Stress Rule and the Compound Stress Rule in relational terms in Liberman and Prince (1977:257) is:

(1) In a configuration $_{c}[\ A\ \ B\ ]_{c}$

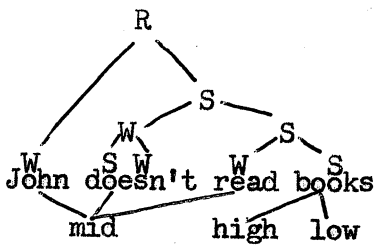
a. NSR: If C is a phrasal category, B is strong.
b. CSR: If C is a lexical category, B is strong iff it branches.

Sentence (2b) would be assigned the values shown in (3) by rule (1b).

(2) A. What is it you don't like about John?

B. John doesn't read books.

(3)



Liberman (1975) proposed rules for associating the tones of intonation contours to metrical trees, as shown in (3). The important aspect of Liberman's algorithm is that a particular tone in the contour is always associated with primary stress, which in the representation above is the node not dominated by a weak node. This is called the designated terminal element in Liberman's hypothesis, and particular tones in different contours become associated with it (as high is in the case above). Other tones in the contour are associated with the rest of the sentence, subject to certain principles, with the result that a contour becomes correctly associated with an utterance, as indicated in (2 b).

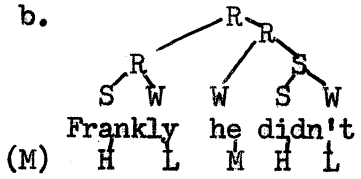
A final assumption I will make, and one which I will argue for, is that there is more than one way to achieve prominence on the metrical tree. Traditionally the word prominence, as used by Jones (1932:228) refers to the degree of distinctness, this being "the combined effect of the timbre, length, stress, and intonation of a syllable." My definition of a prominent syllable in metrical structure is the same as that for Liberman's designated terminal element; that is any syllable is prominent which is not dominated by a weak node in the metrical tree. In (3) above, there is only one prominent syllable, the word book.

In Bing (1979) I argued for an extension of the use of the value R(oot) in the metrical tree. This value had previously been used only to designate the initial non-branching node in the metrical tree, but I proposed that the value R could be used to indicate a relationship which was neither stronger or weaker than its

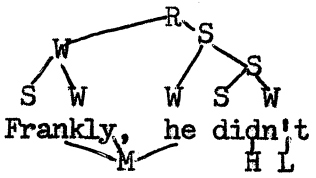
sister node in the metrical tree. I showed that, given this representation, one could define phrase boundaries on a metrical tree as the point where two structures dominated by R were adjacent. I argued that obligatory phrase boundaries (as described in Downing (1970)) could be accounted for if the value R were assigned to all nodes corresponding to those dominating root sentences and to all nodes which had more than one sister. Thus, the representation for (4a) would be (4b) rather than (4c) because he didn't is a root sentence and would therefore be dominated by R; its sister would necessarily be given the value R as well.

(4) a. Frankly, he didn't.

b.



c. x

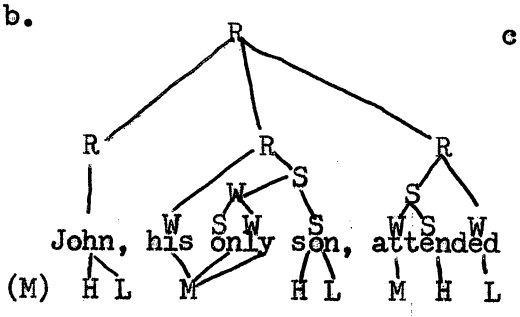


Given the proposed structure (4b) intonation contours can be associated with each domain R, with the tone high aligned with the prominent syllable for each R, as was done in (3) above. The same procedure for (4c) results in an incorrect assignment of contour.

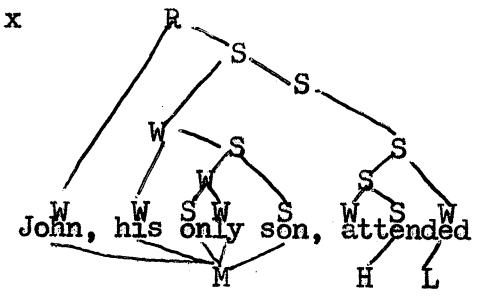
In the same article, I argued that the value R could also be assigned to nodes which had more than one sister. This would assign the representation (5b) rather than (5c) as the correct metrical tree underlying (5a).

(5) a. John, his only son, attended.

b.



c. x



The representation given in (4b) and (5b) not only makes it possible to correctly assign intonation contours to these sentences, but also makes it possible to define phrase boundaries on the metrical tree.

In sentences such as (4) and (5), sentences in which phrase boundaries are always obligatory, it is obvious that there is more than one intonation contour associated with a sentence. What is noticed less frequently is that in cases where the phrase boundaries are variable, there can also be more than one intonation contour, although depending on context, there may be only one. Consider the following sentences.

(6) The governor, I think, has been kidnapped.

(7) a. What happened?

b. The governor has been kidnapped.

(8) a. I thought Jay was going to talk to the governor.

b. He can't. The governor has been kidnapped.

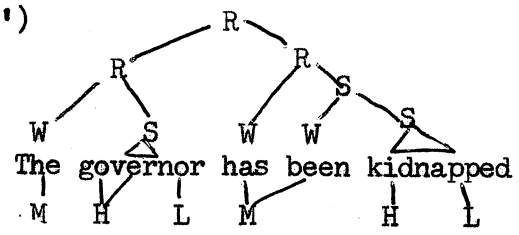
In (6), the sentence has three intonation contours for the same reason as (5); that is, the underlying structure is not binary. In (7), the noun phrase, the governor, is given prominence because it is being introduced into the discourse. In (8), however, the governor does not receive prominence, for in the context given it is destressed because it is "old information." Other patterns of prominence are also possible, of course, depending on context.

(9) a. Did you say someone has been kidnapped?

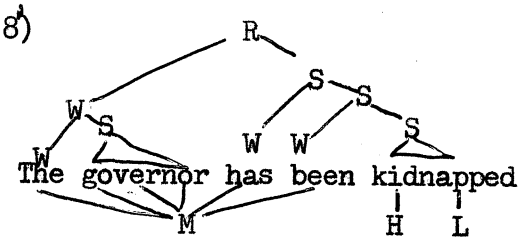
b. Yes, the governor has been kidnapped.

As (7), (8) and (9) illustrate, a variety of patterns of prominence can occur. The underlying metrical trees for these sentences, and the tonal assignments associated with those trees are indicated in (7')-(9').

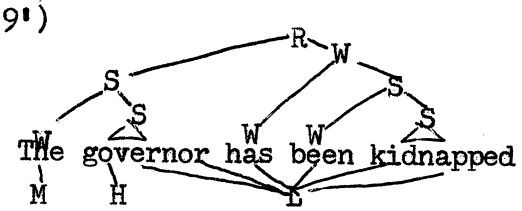
(7')



(8')



(9')



It is usually assumed that the pattern of prominence in (8) is the unmarked case, and that (7) is an exceptional case. The fact that (7b) can occur in the relatively neutral context "What happened" indicates that the opposite might be true. I will argue in the remainder of this paper that noun phrases are always prominent unless they have been destressed for contextual reasons, and that (7b) rather than (8b) would be the pronunciation of the sentence least dependent on context.

The idea that noun phrases which introduce something into the discourse are more prominent than other kinds of phrases has been stated repeatedly in descriptions of English prosody. Recent statements to this effect can be found in Kingdon (1958), Schmerling (1973), Gunter (1974) and Ladd (1978). Although I will be drawing heavily upon the ideas of Ladd, I should make it clear that Ladd's arguments are for a stress hierachy with noun phrases at the top of the hierarchy. I will be arguing only for the special status of noun phrases, and for the following hypothesis:

(10) Noun Phrase Prominence Principle: A node in metrical structure corresponding to a node in syntactic structure which is a noun phrase cannot be dominated by any node labelled W(eak) except when that node has been destressed because of reference to previous discourse.

The principle of Noun Phrase Prominence has been stated in terms of syntactic structure, and can be interpreted in relationship to a model of the grammar such as that proposed in Jackendoff (1978). However, I believe that it is more easily accomodated given a model of the grammar such as that proposed in Bach (1977), Partee (1975) or Montague (1973) both because many structures it presupposes are binary and because fewer counterexamples can be found if (10) is stated in terms of the T-phrase[1] rather than in terms of the noun phrase. The statement in (10) should be considered a first approximation.

The statement of (10) is obviously very vague because of the final reference to noun phrases which are not prominent. The idea of prominence "except when that node has been destressed because of reference to previous discourse" relies very heavily on Ladd's (1978) discussion of <u>default accent</u> and Gunter's (1974) discussion of how listeners interpret what they hear. Due to the limitations of space, the summaries I will give of their ideas will be admittedly inadequate.

Ladd's investigation of stress is done within the relational framework described in Liberman and Prince (1977). He shows

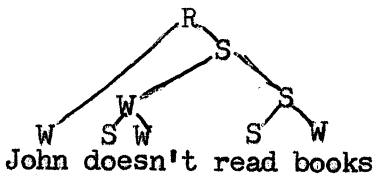
that within this framework it is quite simple to show why the destressing of one element results in another element receiving prominence. For example, if we assume an underlying structure for (11b) such as that given in (2b), it is easy to see why prominence falls on read if books is destressed. The following dialogue is from Ladd (1978:129).

(11) a. Has John read Slaughterhouse-five?

b. No John doesn't read books.

In this example, the destressing of books, which refers back to the previous sentence, causes prominence to fall on read, since a change from strong to weak on one node also necessarily effects a change in the sister node in the metrical tree. The metrical tree for (11b) would be:

(12)



Ladd (p. 114) calls the prominence which falls on read, "accenting by default."

Although the example (11) makes the notion of destressing "old information" seem quite natural, Ladd's discussion makes it clear that clarifying the idea "refers back to the discourse" is anything but a trivial problem. He notes (p. 141) in reference to example (11):

> . . . consider a possible reply like John doesn't read trash. The conversation is not 'about trash' in any meaningful sense. Rather, deaccented trash is referred to the context; the hearer is told' this word has some special relation to the context.' Given the context, of course, the special relation can only be the implication of the speaker's critical evaluation of Slaughterhouse-Five.

Ladd specifically cautions against attributing the phenomenon of deaccenting to the syntax. He gives examples to show that speakers use deaccenting to let the hearer know that he assumes they share certain basic knowledge about the world, as in the example below (Ladd (1978:93)).

(13) A: How did your operation go?

B: Don't talk to me about it--I'd like to strangle the butcher.

By destressing the butcher the speaker is assuming that the listener is able to make the correct inferences which allow him to relate the phrase not to a real butcher, but to the speaker's doctor.

The ability of the listener to interpret destressing cues is a fairly complex procedure, according to Gunter (1974). He claims that the coherence of a dialogue is created in the mind of the listener, who must actively run through a set of hypotheses to interpret a discourse such as (13). He states his observations as a set of principles (p. 82):

> When we are listening to dialog we are always looking backward; that is, as we hear each utterance we try to relate that utterance back to its antecedents:
> A. We try to relate the utterance, first of all to any speech that may already have taken place in the dialog;
> B. We try to relate the utterance to the real setting--to the objects present or to the interlocutors and their common knowledge and experience;
> C. Failing these two attempts, we try to imagine a state of mind in the speaker that would account for the utterance.

Gunter claims that the listener goes through the hypotheses in the order given. If he cannot relate the utterance by either A or B, the listener will either supply a context or decide that there has been some sort of misunderstanding.

It is this willingness to supply appropriate contexts to sentences that makes it easy to overlook the fact that noun phrases normally receive prominence unless they somehow refer to something already in the discourse. Consider the following sentences:

(14) In twenty dissertations, John hit Mary.

(15) After twenty pointed questions, John Goldsmith hit Mary Clark.

In (14) we recognise the tiresome John and Mary who have achieved immortality in their familiar roles in linguistic examples. However, in (15) we are dealing with real people (although in an imaginary context), and the noun phrase, John Goldsmith, cannot be destressed without the implication that John is already part of the discourse; the same holds true for the noun phrase Mary Clark.

(16) John Goldsmith hit Mary Clark.

This sentence would be appropriate in the context of the question (17), but not as a reply to (18).

(17) Who hit Mary Clark? John Goldsmith hit Mary Clark.

(18) What happened at the convention?

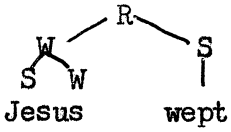
x John Goldsmith hit Mary Clark.

If full names are used rather than first names, it is much easier to decide whether or not a noun phrase is destressed. Bolinger (1972:640) says that "we rarely use just a given name unless the referent is conceptually close by;" at the very least, we use first names only when the person referred to is understood by both speaker and hearer, which means that the person has already been introduced into the discourse in some way. In examples given by linguists, it is quite common to use first names in sentences illustrating stress patterns. It is the ability of the listener to supply the appropriate context to the utterance that makes us overlook the fact that there are presuppositions associated with the sentences such as (14) in which the first names do not receive prominence.

Why should noun phrases always receive prominence? Consider the two possible communicative systems. In one system, all noun phrases would be prominent unless destressed for discourse reasons. Thus, if the listener hears (19), which has the underlying representation (20), he would assume that Jesus was destressed because it refers to a person who is already assumed to be part of the discourse.

(19) Jesus wept.

(20)



The listener can then run through his hypotheses about the possible relevance of the destressed noun phrase to what has been said and can create coherence in the way proposed by Gunter.

The other communicative system would be one in which noun phrases were sometimes destressed for discourse reasons and sometimes assigned the value weak because they happened to be a left branch of the structure (as in (20))and were given the value weak by the Nuclear Stress Rule rather than because of the context. This system would seem to further complicate the task of the listener. Not only would he have to explore a number of hypotheses in order to create coherence in what he hears, but he would have the additional burden of having to decide if there had been destressing in the first place. The first system clearly seems preferable.

Given the argument that the Noun Phrase Prominence Principle might provide a point of reference against which certain nouns might be destressed for discourse purposes, the next question to be asked is whether or not there is any real evidence for such a principle. Surprisingly, a number of sentences which have traditionally been puzzles for those who claim that stress systems are not completely arbitrary are no longer problems if one assumes the Noun Phrase Prominence Principle interacting in some way with the Nuclear Stress Rule.

If one assumes that the phrasal rules for stress in English include only the rules in (1), the following sentences from Schmerling (1973: 106-108) cannot be accounted for.

(21) John died.

(22) I looked the answer up.

(23) Great oaks from little acorns grow.

In these three sentences Schmerling claims that the greatest prominence falls on the noun phrase rather than on the right sister. Ladd (1978:124-125) provides additional examples.

(24) I'm leaving for Corfu tomorrow.

(25) My parents called.

(26) How many languages do you speak?

Of course, given the proper context, these noun phrases can be destressed, but given an "out of the blue" context, prominence falls naturally on the noun phrase. Ladd (p. 80) illustrates this with the following examples.

(27) i. ('out of the blue', parents accented)

What time are your parents coming?

ii. (in context, parents deaccented)

A. Boy I really have to get moving. My parents are coming today and I've still got to finish this paper and get the place cleaned up and get some laundary done and. . . Wow, I don't know if I'm going to make it.

B. Oh, yeah, I forgot about that. What time are your parents coming?

Although the Noun Phrase Prominence Principle accounts for the fact that in most intransitive sentences it is the subject rather than the verb which has greater prominence, there is a subclass of intransitive sentences discussed by Guéron for which she offers a different explanation. These sentences are interesting because they resist default accent.

Guéron distinguishes between presentational sentences which function to introduce the noun phrase into the discourse and which contain verbs such as come, arrive, appear, etc., and predicative sentences for which the function is to give information about the subject. In presentational sentences, the stress is normally on the subject and in predicative sentences it normally falls on the verb phrase. The examples Gueron gives are the following(p. 11).

(28) a. The case was judged. Then a lawyer appéaled.

b. The case was judged. Than a lawyer appeared.

She claims that the contrary stress patterns are unacceptable.

(29) a. The case was judged. x Then a LAWYER appealed.

b. The case was judged. x Then a lawyer APPEARED.

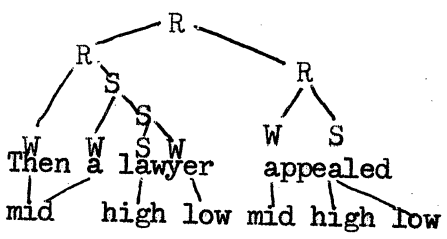
Although I agree with Gueron's judgments, I believe that there are a number of facts and possibilities she has not considered. First, in this context there is more than one acceptable pronunciation for (28a).

(30) a. Then a lawyer appealed.

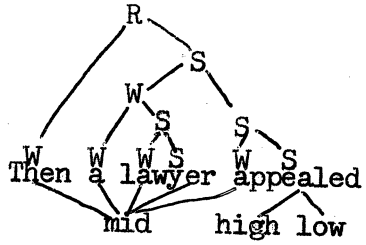
b. Then a lawyer appealed.

In (30a) the underlying pattern of prominence and its association with the tonal pattern would be the one given in (31a) and in (30b) the pattern of prominence would be the one given in (31b).

(31) a.



b.



Both representations are consistent with the Noun Phrase Prominence Principle. In (30a) the speaker has chosen to give prominence to the noun phrase. However, in (30b) the noun phrase

has been destressed, which means that the speaker intends to relate it to the previous discourse. On the basis of what he judges the listener's real life knowledge to be, he knows that he can probably assume that the listener knows that lawyers are found in courtrooms, and he communicates this putative shared assumption by destressing lawyer. In (30a) he chooses not to. However, if the speaker had said,

(32) The case was judged. x Then a cleaning woman appealed.

the listener would probably have been puzzled, since one doesn't expect cleaning women to be in the courtroom during a trial. Assuming that the case was a labor dispute and that there really was a cleaning woman present, the speaker would probably have said

(33) The case was judged. Then a cleaning woman appealed.

The pattern of prominence underlying this sentence would be analogous to that of (31a).

The fact that prominence falls naturally on lawyer in (28b) can be accounted for by the Noun Phrase Prominence Principle. What is puzzling is that in (29b) it is not possible to destress lawyer in order to get default accent on appeared. As Gueron's discussion makes clear, the primary role of most presentational verbs such as appeared is to introduce the subject of the sentence into the discourse. For this reason, it is difficult to find examples in which the noun phrase is "old information." The function of introducing something and the function of destressing something because it has already been referred to are almost contradictory. One has to search to find examples such as (27ii.B) and (34).

(34) The lawyer suddenly disappeared under the table. Then the lawyer appeared.

What these examples make clear is that the importance of context cannot be ignored in an exploration of patterns of prominence.

Although Gueron's discussion of presentational and predicative sentences is interesting, it is based on the premise that a sentence can have only one prominent syllable, and as has been shown above, this is not necessarily the case. Gueron's analysis is limited to a subclass of intransitive verbs, those which occur in presentational sentences, but it ignores the fact that all intransitive verbs are less prominent than their subjects in 'out of the blue' contexts.

The Noun Phrase Prominence Principle not only unifies the explanation for intransitive verbs, but also predicts that a noun phrase which is a left sister will receive greater prominence than a phrase, not a noun phrase, which is its right sister. The following example was transcribed for intonation from an oral reading of The Story of Doctor Dolittle. The prominent syllables are shown by changes in intonation.

(35) His sister used to grumble about all the animals, and said they made the house untidy.

In the final clause, house has prominence rather than untidy, which is the rightmost node. Another possible reading for this clause would be (36), but (37) is not possible in the context in which the sentence appears because this is the first mention of the house in the discourse.

(36) and said they made the house untidy.

(37) x and said they made the house untidy.

Ideas of "new information: and "introduction into the discourse" and "relevant to the discourse" are no more precise than the idea of semantic richness proposed by Bolinger (1972), but they provide a new perspective from which to examine Bolinger's examples. Bolinger's thesis, which he argues for rather persuasively, is that the speaker adjusts the accents or prominence to suit his meaning. Although I do not disagree with Bolinger's claim that a speaker tends to give prominence to parts of the message which are essential, I believe that this adjustment is made within a system already understood by speaker and hearer, and is not totally arbitrary as Bolinger suggests.

Bolinger's examples (1972:633-634) are the following:

(38) a. The end of the chapter is reserved for various problems to computerize.

b. The end of the chapter is reserved for various problems to solve.

(39) a. I have a point to emphacize.

b. I have a point to make.

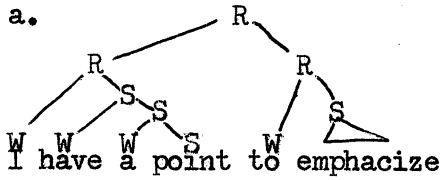
(40). I'm hot. I'm looking for something cool to drink.

There are several interesting facts about these sentences. One is that Bolinger, whose knowledge of prosody is considerable, does not mark only the primary stress on his examples. In the a. examples there are two stresses indicated, but in the b. examples, only one. If the intonation contours are added to (39) we can see that the extra stress also entails an extra intonation contour in (a), but that there is a single contour in (b). The underlying representations given in (42) are consistent with the Noun Phrase Prominence Principle.

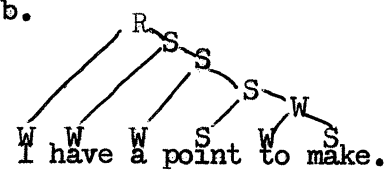
(41) a. I have a point to emphacize.

b. I have a point to make.

(42) a.



b.



The second fact is that the semantically "richer" examples tend to be longer, and thus tend to have a structure analogous to that in (42a) rather than (42b). Bolinger readily admits that (43) is perfectly acceptable, and (44) as well.

(43) I'm hot. I'm looking for something cool to drink.

(44) a. Knowing his character you can guess what he's up too--

probably looking for some boob to cheat.

b. Knowing his character you can guess what he's up to--

probably looking for some boob to cheat.

His explanation is that although cheat is the semantically richer word, the speaker can choose to accent the semantically poorer word, and deaccent the semantically richer one. What the Noun Phrase Prominence Principle claims is that the noun phrase is not de-emphacized in the (a.) cases. The choice is between also emphaciz ing the following phrase or not, and in many cases, the choice is made on the basis of length. That is, structures such as (42a) tend to be chosen if the next phrase has a lot of syllables and structures such as (42b) tend to be chosen if the phrase is short. The choice is always there, however. Lakoff (1972:299-300) first made this point with the following examples:

(45) a. The cars whose engines he fixed.

b. The cars whose engines he guaranteed.

(46) a. I pointed out the house Ed mentioned.

b. I pointed out the house that the enemy bombers had destroyed.

(47). a. Whose umbrella have I taken?

b. Whose book did the reviewer criticise?

If the intonation contours are added to these sentences, one can see that in the (a) sentences there is one prominent syllable and in the (b) sentences there are two, and two intonation contours.

(48) a. The cars whose engines he fixed.[2]

b. The cars whose engines he guaranteed.

(49) a. I pointed out the house Ed mentioned.

b. I pointed out the house that the enemy bombers had destroyed.

(50) a. Whose umbrella have I taken?

b. Whose book did the reviewer criticise?

The Noun Phrase Prominence Principle does not deny that the speaker can adjust his pattern of prominence to suit his meaning. However, it claims that the choices are limited, and that if the noun phrase is de-emphacized, this is a signal to the listener that the noun phrase is relevant to the preceding context. In the sentences above the noun phrase is not de-emphacized; the choice is made between emphacizing only the noun phrase or giving prominence to both the noun phrase and to the phrase which follows it.

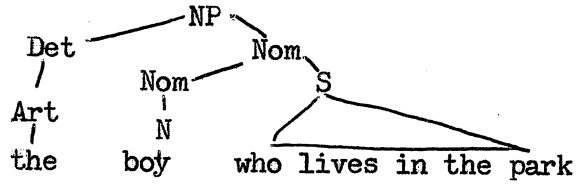
A potential argument against the Noun Phrase Prominence Principle might come from expressions such as (51).

(51) a. The boy who lives in the park

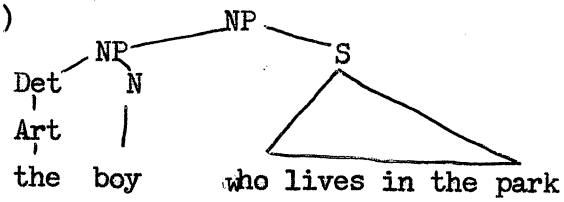
b. The president of Amherst College

However, there are good arguments to indicate that (51a) has an underlying structure (52) rather than (53).

(52)



(53)



The argument for (52) over (53) is given in Partee (1975b.) She argues that the principle for interpreting singular phrases of the form the α includes an assertion or presupposition that the class denoted by α has one and only one member. The analysis in (52) in which boy denotes a class (the class of boys) and the relative clause denotes the class of entities who live in the park, and in which the intersection of the two classes gives the class who live in the park and are boys, results in the correct interpretation when combined with the, that is, that there is only one member of the class. The other analysis (53) would first combine the with boy, and the combination of this class with the relative clause could only result in a non-restrictive interpretation. A similar argument could be given for (51b).

If one does accept the arguments in favor of the Noun Phrase Prominence Principle, how can it be incorporated into the grammar along with other rules such as the Nuclear Stress Rule and the Compound Stress Rule? The generalization (10) could be stated either as a rule assigning prominence or as an interpretive rule. Stated as a rule, it would have to assign either S or R to nodes corresponding to noun phrases being introduced into the discourse; the Nuclear Stress Rule would then apply as an "elsewhere rule." If the Noun Phrase Prominence Principle is formalized as an interpretive rule, it could be stated informally as:

(54) Interpret any noun phrase dominated by a weak node as referring back to previous discourse.

One aspect of the Noun Phrase Prominence Principle which should not be overlooked is the claim that giving prominence to one part of a sentence does not necessarily entail not giving

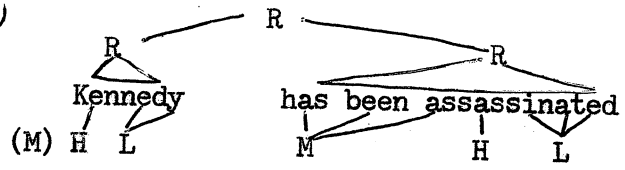
prominence to another part. For example, consider the following dialogue.

(55) a. What happened?

b. Kennedy has been assassinated.

It is not necessary to argue that because the second syllable of assassinated receives prominence, the subject, Kennedy, does not. This is because the underlying pattern of prominence (56) permits both words to have prominence.

(56)



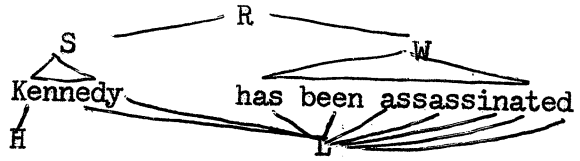
The following dialogue is also consistent with the Noun Phrase Prominence Principle.

(57) a. What happened?

b. Kennedy has been assassinated.

The underlying representation for (57b) would be (58).

(58)

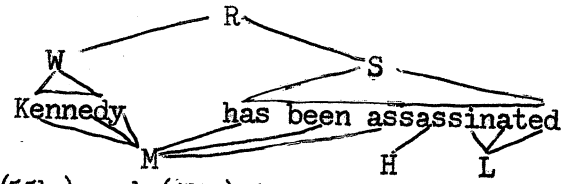


However, the following discourse is not possible in an 'out of the blue' context; Kennedy must somehow be assumed to be already part of the discourse.

(59) a. What happened?

b. Kennedy has been assassinated.

(60)



Unlike (55b) and (57b) the pattern of prominence on (59b) requires

that the listener supply a particular context in order to make the discourse coherent. For this reason I would suggest that the pattern of prominence indicated in (60) is the marked one rather than those given in (58) and (56).

To summarize, if one does assume the Noun Phrase Prominence Principle, it is possible to account for a number of sentences in which prominence falls naturally on the noun. The prominence pattern of intransitive sentences, including presentational sentences, can be accounted for with a single principle. The Noun Phrase Prominence Principle limits Bolinger's hypothesis of "semantic richness" by claiming that although options are possible for the speaker, these options are limited. If we assume the Noun Phrase Prominence Principle, it is possible to claim that all instances of destressed noun phrases are for the purpose of keeping the discourse on track; the alternative is to assume that some destressing is because of the fact that the noun phrase is a left branch and some destressing is for discourse reasons. I would suggest the former as the better alternative.

Notes

1. For a definition of T-phrase see Partee (1975 a).

2. Notice that in these sentences, cars, enemy bombers and reviewer are all presupposed.

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