

RECURSIVE ADJECTIVES - PROBLEMS FOR A GENERATIVE GRAMMAR

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In this paper I will test the hypothesis that all recursive rules in a generative grammar of natural languages are found in the base component:

the recursive property is a feature of the base component,
... The transformational component is solely interpretative.

Chomsky, 1965: 137.

To my knowledge, this hypothesis has not been seriously challenged. It will be tested here in the light of some interesting facts about the iteration of individual modifiers (adjectives, adverbs and intensifiers), in cases such as the following:

- (1) *You stupid, stupid girl.*
- (2) *That problem is weird, weird, weird.*
- (3) *You must lie perfectly, perfectly still.*
- (4) *She is a very, very, very, very well-developed secretary.*

The general distributional properties of this type of iteration seem to be that it occurs with adjectives in both attributive and predicative positions (but subject to certain further constraints mentioned later); that it also occurs with intensifiers and adverb modifiers in adjective phrases; that it does not occur with adverbs functioning as heads of adverb phrases in any of the characteristic positions that adverbs may function in, except initially under heavy juncture.

- (5) **He can get up slowly, slowly.*
- (6) **He can certainly, certainly come tomorrow.*
- (7) *Surely, surely he hath borne our griefs.*
- (8) *Carefully, carefully, John ascended the stairs.*

In this paper I will confine myself to the rule(s) which generate iteration in adjective phrases.

What rule type will weakly generate such iterative modifiers? Since the iteration appears to be non-finite, the rule will have to be recursive. Two possibilities therefore suggest themselves: the coordinative type such as that formulated by Dougherty, 1968, which is essentially of the X^n type where X is a node label and n

is an index specifying the number of times the node is to be repeated. The second type is the embedding type such as the phrase structure rule which embeds NPs within NPs, see Chomsky, 1970. These are the only two which allow for recursion. Both are superficially plausible.

The first would state that iterative modifiers are appositives similar to those studied in Delorme and Dougherty, 1972. This possibility has the virtue that it accounts for the fact that iterative modifiers are not stacked, i.e., subject to successive modification the way unbroken chains of adjectives are. One might also argue that they are paraphrasable by *and* coordination.

The second possibility could not generate iterative modifiers directly since single modifier nodes are lexical nodes and therefore do not dominate structure. However it might be possible that phrase structure rules embed structures which underly iterated modifiers, the actual surface appearance of the iteration being a function of transformations. This would be in line with the traditional view that attributive adjectives are fronted from an underlying predicate position by a fronting transformation.

Either of these two possibilities is a deductive consequence of the hypothesis that all recursive rules are to be found in the base and thus both are a test of it. Should they fail to find support from the facts relating to iteration of modifiers, there do not seem to be further possible rules of the base which would corroborate the hypothesis.

Let us begin then by supposing that the rules which generate these modifiers are of the form:

$$R1 \quad AP \longrightarrow (int)^n + Adj^n$$

The first problem with this rule is that it potentially generates both iterated intensifiers and iterated adjectives. This is not warranted. In adjective phrases only one lexical item can be iterated:

- (9) *A *very, very, warm, warm* day.
- (10) *An *awfully, awfully, dry, dry* day.
- (11) *That man is *very, very, old, old*.
- (12) *The grasshopper was *quite, quite, thin, thin*.

The fact of the matter is that only the first modifier in an adjective phrase can undergo iteration. Since this is a context-sensitive restriction, a rule of transformational power would be needed to handle it.

The same problem is apparent in both broken and unbroken chains of adjectives.

- (13) *An *old, wealthy, wealthy* bachelor.
- (14) *The *inconsiderate, dirty, dirty* wretch.

(15) **It was a fine sunny, sunny morning.*

This suggests that we examine the second of our possible solutions; that is, the one which supposes that iterated modifiers have relative clauses underlying them. The transformation which fronts the adjectives might be able to be made sensitive to the position of the modifier in the attributive chain, i.e., it would front iterated modifiers first and any further modifiers later. There are at least 3 initial reasons why this solution seems wrong. First it could not account for iterated adverbs and intensifiers since these are not transformationally derived. It could not account for iterated adjectives which are not fronted, i.e., those in predicate position, since these would not be T derived; and third, the derivation of attributive adjective ordering by transformations is suspect on a number of independent grounds: see Sussex, 1974, and Chomsky, 1971.

There is a further range of distributional facts which neither of the two solutions which I have so far sketched appear able to account for.

A. Differences in the distribution of iteration for attributive and predicative adjectives.

1. Predicative adjectives appear to require at least three iterations of the adjective whereas attributive adjectives take two normally:

(16) *That man is old, old, old.*

(17) *The weather has been foul, foul, foul.*

(18) *The music was loud, loud, loud.*

(19) **The man was old, old.*

(20) **The weather was foul, foul.*

(21) **The music was loud, loud.*

The problem here for the transformational solution is that one would not expect distributional dissimilarities between structures which have, or have not undergone an optional transformation. The problem for the appositive solution is that it would not be possible to place a value of 2 on the index n when the AP is in predicate position, since this again entails context-sensitivity; not to mention the unprecedented nature of such a restriction in any other appositive construction.

2. Predicative adjectives only iterate when in sentence final position regardless of how deeply embedded the S is in which they appear.

- (22) *The man who lives down the road is old, old, old.*
 (23) *The weather which we had last week was foul, foul, foul.*
 (24) **The weather was foul, foul, foul yesterday.*
 (25) **The man is old, old, old and decrepit.*
 (26) **The man who is old, old, old, lives down the road.*
 (27) **The weather which was foul, foul, foul turned out fine.*
 (28) *Yesterday I met my uncle who owns a dog which eats mutton that is foul, foul, foul.*

Exactly the same objections to both solutions are present here. For the transformational solution the problem is that these modifiers are not transformationally derived and for the appositive solution the problem is that this restriction is one of context, i.e., not able to be captured by PS rules.

B. Morphological constraints on iteration of modifiers.

1. Comparative and superlative forms of adjectives cannot be iterated.

- (29) **It's a slower, slower train than last week.*
 (30) **An older, older man lives here.*
 (31) **The longest, longest road in the world is in Canada.*
 (32) **The finest, finest jewellery is sold here.*

If we suppose that the comparative and superlative are derivational morphemes then neither solution offers any opportunity to capture this constraint since neither transformations nor PS rules are sensitive to the morphological structure of lexical items. If we suppose that these are inflectional morphemes in an *Aspects* style grammar then this constraint could be potentially captured by the appositive solution since PS rules can be sensitive to lexical features.

2. Compound adjectives cannot be iterated.

- (33) **A fast-growing, fast-growing plant.*
 (34) **An ill-informed, ill-informed critic.*

If we accept the evidence of Meys, 1975 and Kuiper, 1972, that compounds are lexically derived then this constraint offers no support for either solution since neither PS rules nor transformations are sensitive to lexical information.

C. Phonological constraints on iteration.

1. Length

Words of three or fewer syllables appear to be able to take iteration whereas words longer than three syllables do not.

- (35) ?*We had an agreeable, agreeable time at the party.*
- (36) ?*He was an evangelical, evangelical parson.*
- (37) ?*An exemplary, exemplary pupil stayed at school.*

2. Rhythm

In polysyllables words with initial strong stress appear more felicitous than words with stress elsewhere. Final stress seems least felicitous, at least in attributive position.

- (38) *That's a fascinating, fascinating talk.*
- (39) *The dirty, dirty room.*
- (40) ?*That's a felicitous, felicitous expression.*
- (41) ?*A destructive, destructive habit.*
- (42) ?*A depraved, depraved person.*

Note that the rhythmic constraint seems to be stronger than the length constraint in that (38) is a four syllable word but permissible. Further examples of this phenomenon are:

- (43) *What a terribly, terribly shocking thing to happen.*
- (44) *What a dissipated, dissipated existence.*
- (45) *That's a singularly, singularly unexciting book.*

If we accept the hypothesis that stress assignment occurs at surface structure (Chomsky and Halle, 1968), then this constraint can offer support for neither of the two hypotheses. Since syllabic information is lexical this also offers no support for either solution.

D. Semantic constraints on iteration.

- 1. Only gradable adjectives (Sussex, 1974), will take iteration.

- (46) **A wooden, wooden house.*
- (47) **A concrete, concrete wall.*
- (48) **The former, former President.*

Note: This appears to parallel the cooccurrence restriction on non-gradable adjectives and intensifiers.

Since gradability or non-gradability is a semantic fact, neither of the two proffered solutions is able to capture this constraint since syntactic rules cannot be sensitive to semantic facts.

The facts that I have presented up to this point appear to point very firmly to the conclusion that, however these iterated modifiers may be generated, it can not be by base rules. I therefore suggest that the hypothesis that recursion is a function of the base holds only for phrase nodes but not for lexical nodes.

Let me conclude by looking at some of the avenues which may be searched for a more likely solution. First, the fact that a number of the constraints on iteration relate to lexical information suggests that the process we are dealing with is post-lexical. Second the fact that some of the constraints appear to relate to surface features suggests that this is a surface structure rule. The fact that predicate position has to be sentence final also suggests this, as does the string initial constraint for attributive adjectives, since whether or not a modifier is first in an attributive string or last in a sentence must await the application of fronting transformations, clefts, question transformations and the stylistic reordering typical of late transformations.

A further fact which points to a surface structure rule is that iterative modifiers do not appear within the range of negation. If one accepts the hypothesis of Jackendoff, 1972, that this range is determined at surface structure by the association of negation with the focus of the sentence then this is a further surface structure constraint.

(49) ?*John didn't see an old, old man.*

(50) ?*Yesterday wasn't lovely, lovely, lovely.*

(51) *John didn't see the girl whom I thought had a lovely, lovely complexion.*

Let us suppose that we have a recursive rule which operates at surface structure to generate iterative modifiers. We are still left with a bewildering set of constraints which appear to have very little to hold them together into a coherent rule system.

The way out may be to suggest that some of the constraints are performance ones or indeed that the whole business of iterating modifiers is a performance function and not part of the

grammar of English at all. This cowardice has its attractions but before resorting to it, it is essential to note an important methodological consideration and indeed a conclusion.

I have presented a range of data whose unity lies in only one thing; its relationship to an apparently unified phenomenon, that of iteration of single modifiers for emphasis. Other than that there is patent disunity. First disunity of the data themselves. I have presented syntactic facts of various types, distributions, frequency of iteration facts, cooccurrence restrictions and a variety within each of these. I have presented some apparent phonological constraints, and lastly a range of semantic facts. None of these facts seem to fit into any presently available theory and yet they seem a paradigm of the kinds of facts which are being turned up in recent generative studies. I have shown how these facts do actually conflict with an otherwise well-motivated theory. Am I therefore, as I suggested earlier, in a position to abandon this otherwise well-motivated theory? I feel the answer has to be "no". All I have really done is demonstrated that the phenomenon I have been studying is not a unified phenomenon and that I cannot within present theories offer a unified account of it. This may mean that the original intuitions which suggested that this was a unified phenomenon, were wrong, or that their treatment in a theory of language must await further developments in that theory. The crucial point is that there are no linguistically significant generalisations to be made in spite of my linguist's intuitions that there are. This is therefore a paper bearing more on methodology than substantive considerations. I have, in fact, borne out the contention of Botha (1971: 101):

... neither a linguist, nor a grammarian, has at his disposal an adequate *a priori* measure more distinguishing between linguistically relevant and non-relevant data, or between linguistically significant and non-significant facts. It is therefore impossible to judge on *a priori* grounds whether a given generalisation is significant or not.

Footnote

This paper is a report on research in progress on a problem which has proved to be rather refractory. It has gone through a number of drafts and trans-Pacific journeys in the process and I would like to thank Richard C. DeArmond of Simon Fraser University who has worked on it at the other end of those journeys.

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