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## XII. LINGUISTICS

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### A. THE SEMANTICS OF GROWTH

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Mark H. Aronoff

There are verbs in English that have both a transitive and an intransitive sense, where the transitive may be roughly interpreted as meaning cause to V, V being the intransitive sense of the verb. These verbs are called causatives. Chomsky<sup>1</sup> has noted that these verbs have derived nominals associated only with the intransitive sense of the verb. He uses this observation to construct an argument in favor of the Lexicalist Hypothesis. The argument goes approximately as follows: the Lexicalist Hypothesis predicts that derived nominals should correspond to base forms, rather than transforms. If the transitive sense of a causative verb is derived from the intransitive, via a transformation, then there will be no derived nominal corresponding in sense to the transformationally derived form. As an example of a nominal that conforms to his observation, Chomsky cites the word growth. (1), but not (2), is well formed.

(1) The corn's growth

\*(2) The farmer's growth of the corn

Smith<sup>2</sup> has found numerous counterexamples to Chomsky's observation, especially in the Latinate portion of English vocabulary, where many derived nominals have senses

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corresponding to both the transitive and the intransitive. Smith's conclusion is "Evidently, either the lexicalist position or the transformational derivation of causatives must be given up."

I would like to present a bit of evidence against the former alternative. First, I should note that Chomsky himself presents a puzzling problem for the causative analysis in the very paper in which it is proposed. There he notes forms such as the nominal in (3).

(3) The growing of tomatoes

"If", as he says, "the lexicalist hypothesis is extended to the forms (56) [among which our (3)], then we must suppose that both tomatoes grow and NP grows tomatoes are base forms." This is because the nominal in (3) corresponds in sense to the transitive, contrary to the predictions of the combination of the lexical hypothesis and the causative analysis. Wasow and Roeper<sup>3</sup> have demonstrated quite conclusively that the lexicalist hypothesis accounts very neatly indeed for such forms as that in (3), and their demonstration lends great support to Chomsky's supposition. I shall now show that (2) can be ruled out on grounds other than those Chomsky suggests. Since the impossibility of (2) is the only evidence that Chomsky provides for the transformational derivation of causatives, we can conclude that such a derivation may be rejected, in favor of the lexicalist hypothesis.

The intransitive verb grow has at least two distinct senses (it certainly has more, but the fact that it has these two will suffice to demonstrate the point). One sense has a meaning something like become larger, and may select as its subject anything capable of doing so. Some sentences in which grow has this sense are given in (4)

- (4) The economy grew by leaps and bounds last year.  
Alice grew three feet in as many minutes.  
His anger grew to the point where he could no longer contain it.  
The corn hasn't grown much yet.

We shall now derive a transitive verb from this sense of grow, by a causative Transformation. The subjects of all the sentences in (4) will be the objects of the corresponding transitives, as in (5):

- (5) \*The government grew the economy by leaps and bounds last year.  
\*The drug grew Alice three feet in as many minutes.  
\*His mother grew his anger to the point where he could no longer contain it.  
\*The farmer hasn't grown the corn much yet.

Something is wrong here. The verb grow is supposed to be a causative, that is to say it should have both a transitive and an intransitive sense, differing only in subcategorization, with certain correspondences in selection. Yet none of the sentences in (5)

is acceptable.

But, intransitive grow has another sense, predicated only of plants, beards, and sometimes minerals. This sense may be defined roughly as to exist in a specified habitat. This sense of grow is exemplified in (6):

- (6) This grass will grow just about anywhere.  
 There's corn growing in that field.  
 Gold grows well underground.

As it happens, there is a transitive associated with this sense of grow:

- (7) You can grow this grass just about anywhere.  
 The farmer is growing corn in that field.  
 God grows gold well underground.

So we have two senses of the intransitive verb grow, each with its own particular selectional restrictions, and only one of which has an associated transitive sense. The next question concerns the meaning of the nominal growth. What does it mean? It is very hard to pin down a simple definition, but a few sample sentences may help us.

- (8) The rapid growth of the economy is encouraging.  
 Alice's growth was astounding.  
 \*The growth of corn in that field is impossible.  
 \*They tried to encourage the growth of flax.

Intuitions are not clear in this matter, but there does not seem to be any sense of the nominal growth that may be derived from, or even corresponds to in any manner, the second sense of the verb grow, that of the transitive-intransitive pair, exemplified in (6) and (7). That is why (2) is ill-formed, not because the source of the nominal is a transitive verb which should not have a corresponding nominal, but rather because the only sense of the verb grow that appears as a transitive does not have a corresponding nominal, transitive or intransitive.

Let us review the argument. Chomsky presented one fact that could be accounted for by a combination of the lexicalist hypothesis and a causative Transformation. Smith noted that this fact is not very general, and I have shown that it has nothing to do with causatives. Another minor wrinkle has been ironed out. It is striking, however, that no one had noticed the semantic discrepancy before. Chomsky's paper is not unknown, the argument based on the fact of (2) is almost as celebrated, and yet all a person had to do was look the words up in a reputable dictionary, or think about the words for a long time: grow - growth. But in this fact of academic history lies the greatest confirmation of the lexicalist hypothesis. It is the characteristic of syntactically related forms that the semantic differences between them remain constant. In English a sentence containing a passive verb will differ semantically from its active counterpart in a

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predictable way. The predictability of this difference is expressed in any theory of Transformational Grammar now current by the assumption that Transformations do not change meaning. Schooled in this assumption, the linguist who finds a set of morphologically and semantically related items goes on calmly with his business, believing that whatever differences there are among the members of the set will be constant, predictable, and for his present purpose, disregardable. It is only within the lexicalist hypothesis that we are warned to look more closely at the semantic differences. In fact, this hypothesis tells us that morphologically related items that are members of distinct Deep Structure lexical categories may be related semantically in a somewhat haphazard fashion.

References

1. N. Chomsky, "Remarks on Nominalization," in Roderick A. Jacobs and Peter S. Rosenbaum (Eds.), Readings in English Transformational Grammar (Ginn and Co., Waltham, Mass., 1970), pp. 184-221.
2. Carlota S. Smith, "On Causative Verbs and Derived Nominals in English," Ling. Inquiry, Vol. III, No. 1, Winter 1972, pp. 136-138.
3. T. Wasow and T. Roeper, "On the Subject of Gerunds," Foundations of Language 8, 44-61 (1972):