

the categorial component is to define the system of grammatical relations and to determine the ordering of elements in deep structures.

This way of developing the base component is not quite equivalent to that presented earlier. The earlier proposal was somewhat more restrictive in certain respects. In both formulations, the contextual features (structure indices of substitution transformations) that may appear in the lexicon are limited by the conditions on strict subcategorization and selectional rules previously discussed. But in the earlier formulation, with subcategorization rules given as rewriting rules, there is a further restriction. The ordering of the rewriting rule $A \rightarrow CS$ places an additional limitation on the class of contextual features that may be used. Similarly, the issue discussed in § 4.2 regarding examples (66)–(68) does not arise in the new formulation. Because of the greater flexibility that it allows, certain Verbs can be restricted in terms of Subject and Object selection, some in terms of Subject selection, and some in terms of Object selection. It is an interesting question whether the greater flexibility permitted by the approach of this subsection is ever needed. If so, this must be the preferable formulation of the theory of the base. If not, then the other formulation, in terms of a lexical rule based on the distinctness condition, is to be preferred. We shall return to this question in Chapter 4.

§ 4.4. *The role of categorial rules*

We have defined the *categorial component* as the system of rewriting rules of the base—that is, the system of base rules exclusive of the lexicon and the subcategorization rules that we, for the present, regard as belonging to the lexicon. The rules of the categorial component carry out two quite separate functions: they define the system of grammatical relations, and they determine the ordering of elements in deep structures. At least the first of these functions appears to be carried out in a very general and perhaps universal way by these rules. The transformational rules map deep structures into surface structures,

perhaps reordering elements in various ways in the course of this operation.

It has been suggested several times that these two functions of the categorial component be more sharply separated, and that the second, perhaps, be eliminated completely. Such is the import of the proposals regarding the nature of syntactic structure to be found in Curry (1961) and Šaumjan and Soboleva (1963).³⁴ They propose, in essence, that in place of such rules as (6g), the categorial component should contain the corresponding rules (7o), where the element on the right is a set rather than a string:

$$(6g) \quad S \rightarrow NP \frown VP \\ VP \rightarrow V \frown NP$$

$$(7o) \quad S \rightarrow \{NP, VP\} \\ VP \rightarrow \{V, NP\}$$

In (7o), no order is assigned to the elements on the right-hand side of the rule; thus $\{NP, VP\} = \{VP, NP\}$, although $NP \frown VP \neq VP \frown NP$. The rules (7o) can be used to define grammatical relations in exactly the way indicated for the rules (6g). The rules (6g) convey more information than the corresponding rules (7o), since they not only define an abstract system of grammatical relations but also assign an abstract underlying order to the elements. The Phrase-marker generated by such rules as (6g) will be representable as a tree-diagram with labeled nodes and labeled-lines; the Phrase-marker generated by such rules as (7o) will be representable as a tree-diagram with labeled nodes and unlabeled lines.

Proponents of *set-systems* such as (7o) have argued that such systems are more "abstract" than *concatenation-systems* such as (6g), and can lead to a study of grammatical relations that is independent of order, this being a phenomenon that belongs only to surface structure. The greater abstractness of set-systems, so far as grammatical relations are concerned, is a myth. Thus the grammatical relations defined by (7o) are neither more nor less "abstract" or "order-independent" than those defined by (6g);

in fact, the systems of grammatical relations defined in the two cases are identical. A priori, there is no way of determining which theory is correct; it is an entirely empirical question, and the evidence presently available is overwhelmingly in favor of concatenation-systems over set-systems, for the theory of the categorial component. In fact, no proponent of a set-system has given any indication of how the abstract underlying unordered structures are converted into actual strings with surface structures. Hence, the problem of giving empirical support to this theory has not yet been faced.

Presumably, the proposal that the categorial component should be a set-system entails that in a set of syntactically related structures with a single network of grammatical relations (for example, "for us to please John is difficult," "it is difficult for us to please John," "to please John is difficult for us," or "John is difficult for us to please"), each member is directly related to the underlying abstract representation, and there is no internal organization — that is, no order of derivation — within the set of structures. But, in fact, whenever an attempt to account for such structures has actually been undertaken, it has invariably been found that there are strong reasons to assign an internal organization and an inherent order of derivation among the items constituting such a set. Furthermore, it has invariably been found that different sets in a single language lead to the *same decision* as to the abstract underlying order of elements. Hence, it seems that a set-system such as (70) must be supplemented by two sets of rules. The first set will assign an intrinsic order to the elements of the underlying unordered Phrase-markers (that is, it will label the lines of the tree-diagrams representing these structures). The second set of rules will be grammatical transformations applying in sequence to generate surface structures in the familiar way. The first set of rules simply converts a set-system into a concatenation-system. It provides the base Phrase-markers required for the application of the sequences of transformations that ultimately form surface structures. There is no evidence at all to suggest that either of these steps can be omitted in the case of natural languages. Con-

sequently, there is no reason to consider the set-system, for the time being, as a possible theory of grammatical structure.

The phenomenon of so-called "free word order" is sometimes mentioned as relevant to this issue, but, so far as I can see, it has no bearing on it at all. Suppose that for some language each permutation of the words of each sentence were to give a grammatical sentence that, in fact, is a paraphrase of the original. In this case, the set-system would be much superior for the categorial component of the grammar of this language. No grammatical transformations would be needed, and the rule for realizing underlying abstract representations would be extremely simple. But there is no known language that remotely resembles this description. In every known language the restrictions on order are quite severe, and therefore rules of realization of abstract structures are necessary. Until some account of such rules is suggested, the set-system simply cannot be considered seriously as a theory of grammar.

Nevertheless, the free word order phenomenon is an interesting and important one, and much too little attention has been given to it. First of all, it should be emphasized that grammatical transformations do not seem to be an appropriate device for expressing the full range of possibilities for stylistic inversion. It seems, rather, that there are several underlying generalizations that determine when such reordering is permissible, and what its semantic functions are. For one thing, richly inflected languages tolerate stylistic reordering much more extensively than languages that are poor in inflection, for obvious reasons. Second, even richly inflected languages do not seem to tolerate reordering when it leads to ambiguity. Thus in a German sentence such as "*Die Mutter sieht die Tochter,*" in which the inflections do not suffice to indicate grammatical function, it seems that the interpretation will invariably be that "*Die Mutter*" is the Subject (unless it has contrastive Stress, in which case it may be taken to be the Subject or the Object). The same seems to be true in other languages as diverse as Russian (cf. Peshkovskii, 1956, p. 42) and Mohawk. In the latter, the Verb contains affixes designating the Subject and Object, but where the reference is

ambiguous, the initial NP is taken to be the Subject, under normal intonation (I am indebted to Paul Postal for this information). If this is universal, it suggests the generalization that in any language, stylistic inversion of "major constituents" (in some sense to be defined) is tolerated up to ambiguity — that is, up to the point where a structure is produced that might have been generated independently by the grammatical rules. (As a special case of this, then, it will follow that inflected languages will tolerate reordering much more freely than uninflected ones.) Something of this sort seems to be true, and it is not storable in terms of the theory of transformations.

In general, the rules of stylistic reordering are very different from the grammatical transformations, which are much more deeply embedded in the grammatical system.⁹⁵ It might, in fact, be argued that the former are not so much rules of grammar as rules of performance (cf. §§ 1, 2, of Chapter 1). In any event, though this is surely an interesting phenomenon, it is one that has no apparent bearing, for the moment, on the theory of grammatical structure.