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ABSTRACT

Three grammars that, since the 50's, have supplemented or offered alternatives to traditional grammar are discussed in this article. The role of grammar in communicative utterances and the underlying considerations in describing a grammatical system are analyzed. Then, brief summaries about and comments on structural linguistics, tagmemic grammar, and transformational generative grammar are presented. Distinctions are drawn between word- and sentence-based grammars, generative and taxonomic grammars, and deep and surface structures. The compatibility of the systems and the advantages of each for pedagogical use are taken up. Emphasis is placed on the necessity for testing every statement about the details of language against actual sentences accepted as normal by native speakers. (LH)

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ARTICLES

POETRY

DEPARTMENTS

In the February 1969 issue of *The English Record* on Creative Writing, the name of William Heyen, State University College, Brockport, New York, as *Guest Editor* was omitted. We wish to correct the oversight and give him the credit which he so richly deserves for helping to put together what we think—immodestly, perhaps—is a superb issue.

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THE NEW GRAMMARS

Sumner Ives

A discussion of new methods for describing the grammar of English falls naturally into three parts: the role of grammar in communicative utterances, the underlying considerations in describing the grammatical system, and the recent developments in theory and methods of description.

An utterance in any language is constructed of materials from the lexical and grammatical systems of that language and is manifested by means of its phonological units, or, if an orthography exists, by units of this system. In a general sense, an utterance consists of lexical items in a grammatical matrix. It is transmitted and received by means of sound or spelling. None of these can be considered as having priority over any of the others, and any comprehensive description of the language will include accounts of all four systems and of their interactions or relationships. An utterance is any linguistic performance, either for expression or communication, whether it is a poem, an exclamation of surprise, or directions to the nearest drug store.

These statements are truisms, but, properly understood, suggest appropriate relationships among such matters as language, both form and meaning, composition, and the study of literature. They are therefore simple integrating principles for the chief concerns in the school subjects called Reading and English, for both necessarily include a linguistic component.

Traditionally, grammatical matters have included all formal processes and arrangements in which linguistic forms participate as members of classes rather than as individual items. Lexical matters have included the individual meanings of the separate items. That is, grammatical description deals with the "general facts" of the language; lexical description deals with the "specific facts" of the language. This distinction has often been obscured by the habit of equating grammar and usage, as in "he uses good grammar." In the former sense, any coherent version of any language has a grammar, in that it includes a set of procedures by means of which meaningful utterances can be produced from an inventory of smaller forms.

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Although this distinction is true in principle, it is an oversimplification, for the two systems interact, and the line between them is to some extent determined by the efficiency and inclusiveness of a particular description. In other words, any description which brings more of the total language under rules applying to classes of items increases what can properly be regarded as within the grammatical system. Every word in the vocabulary, indeed every morpheme, belongs to some class in the grammar, even though it may be a class of one (as seems to be the case for *not*). Some words are grammatical markers (e.g., articles and personal pronouns) and are therefore conventionally regarded as primarily grammatical rather than lexical, even though they may convey some lexical import as well (e.g., prepositions and conjunctions).

Some discriminations in lexical meaning are indicated by factors in the grammatical context, thus:

He turned the wheel. The butter turned rancid.

In each, the verbs are identical in form but are only partially identical in meaning. In the first sentence, *turned* means something like "revolved," and in the second it means something like "became." The potential for these meanings, and for a few others, is a lexical matter, but the immediate meanings, in these instances, are differentiated by differences in the grammatical contexts, by whether the verb is followed by a noun or by an adjective. This is a general rule and applies to a number of verbs, such as *freeze* and *grow*. It belongs in any reasonably comprehensive description of English grammar.

A more subtle question is revealed if we use the same pattern as that of the second sentence and change some of the words, thus:

The milk turned sour. The man turned sour.

Butter, *milk*, and *man* are all nouns, and *rancid* and *sour* are both adjectives. On one level, then, the second sentence in the first pair and both sentences in the second are grammatically similar. Note, however, that *rancid* would not have produced a natural sentence with *man* as the subject and that *sour* has somewhat different meanings after *milk* and after *man*. It is possible to consider these differences in meaning as reflections of lexical compatibility, outside the grammatical system. It is also possible to relate the differences in meaning to a difference between inanimate nouns (such as *milk*) and animate-human nouns (such as *man*). Note that this difference would correlate with the selection of pronouns:

What turned sour?	It turned sour.
Who turned sour?	He turned sour.

If the second possibility is developed, the grammatical description, and hence the grammar, includes more of the total system of the language. A still further possibility would be to regard occurrences of *sour* with an animate-human noun as metaphoric. This decision would introduce the question of how to deal with instances of metaphor in linguistic description.

Related to these matters is a question of how to handle such expressions as "a grief ago" and "he danced his did," which illustrate different degrees of deviation from "normal" grammar, such as appear frequently in poetry. It seems likely that the limits of grammatical description will eventually be set at some intuitively satisfying line, but the location of ths line is still in debate.

Wherever the lines are drawn, however, it is obvious that there is a grammatical system, that there are lexical items and that, in any meaningful utterance, the lexical items appear in a grammatical structure. A semantic theory which does not deal with the grammatical system, as well as with the lexical items, is necessarily superficial. Since composition is the production of linguistic utterances, it necessarily involves the selection of grammatical strategies. That is, one must choose among different ways to describe the same event or convey the same area of content. Since the study of literature includes the interpretation of linguistic utterances, it necessarily involves the recognition of grammatical clues, and it invites the discovery of grammatical strategies. At present, of course, this selection and this recognition are largely intuitive.

Some Issues in Grammatical Description

The grammar of a language is, as we have seen, a portion of a linguistic system. The term is also used for a description of this portion, however it is limited. A grammar of English is a set of assertions about the grammar of English, arranged in some systematic order. These assertions may be inductive generalizations based on the physical data observed in genuine sentences, or they may be more or less stipulative, specifying processes by means of which utterances are generated, and assigning classifications and relationships within their structures. In either instance, the structures of individual sentences are manifestations derived from and conveying meaning by reference to the grammatical system of the language. Of these two procedures, the former is essentially empirical and the latter is essentially rationalistic. The former dominated linguistic scholarship until recently, but the latter has become very productive through the efforts of Noam Chomsky and his followers.

A central point of difference between these procedures is the distinction between competence and performance. Competence refers to a person's ability to generate new but grammatical sentences and to his ability to understand sentences he has never seen or heard before. Performance refers to instances in which this ability has been exercised. In a sense, an account of competence is predictive of what can happen; an analysis of a performance is descriptive of what has happened. Attention to performances invites an empirical theory and method. To some extent, competence can be worked out only by inference from a sample of performances, and an account of competence subsumes a descriptive method for dealing with performances. However, the differences in point of attention and in philosophical bases lead to different bases for classification and to different kinds of generalizations.

The distinction between competence and performance makes a further distinction between a generative purpose and a taxonomic or terminological purpose in grammatical description. A generative grammar provides a set of rules, or processes, for the generation of sentences, without necessarily implying that these are mental processes in the actual production of sentences. Such a grammar develops the structures of actual sentences in terms of the grammatical system, and, if it is adequate, it thus accounts for these structures and relates them to the system and to each other. It specifies the characteristics, or ingredients, which make utterances meaningful and sets forth the grammatical matrices which control the lexical components. The development of generative grammars has led to explorations toward a more formal semantics.

A taxonomic grammar is one which assigns a label to each class of linguistic form, of whatever size, and assigns each such form to a class. Although sentences must be analyzed in terms of the system, and although the structural patterns of sentences are part of the system, a taxonomic grammaar does not specifically relate sentences to each other, except as they are instances of one or another of the syntactic patterns provided by the system. A classification in such a grammar is based on such formal considerations as word order, inflectional possibilities, derivational affixes, marker words, and intonation. On this basis, "a barking dog" and "a driving rain" are similar, and "the milk turned sour" represents the same pattern as "the man turned sour."

The distinction between a taxonomic purpose and a generative purpose leads to a distinction between "surface structure" and "deep structure." The former consists of the morphologically distinct forms which actually appear in a given sentence, considered only as forms and without regard to such nuances of

meaning as the difference between "a barking dog" (which is referentially similar to "a dog is barking") and "a driving rain" (compare "a rain is driving"). Deep structure refers to a level at which sentences may be equivalent in content although different in structure. The most recent theories of grammatical description include some concept of deep structure, although they define it in different ways. The following pairs of sentences are all equivalent at some level, although they are different in surface structure.

The dog chased the cat.
The cat was chased by the dog.

It has become necessary to boil the water.
To boil the water has become necessary.

The children became frightened and ran away.
The children who became frightened ran away.

They discussed the matter heatedly.
They were in heated discussion about the matter.

The claim is not made that these sentences all say the same thing. To make such a claim involves the very troublesome question of synonymy. They are alternative ways of dealing with the same event or the same area of content, but they are stylistically different and "foreground" different aspects of their content. They thus represent different grammatical strategies, and this difference is important to a mature stylistics and to a comprehensive semantics.

The nature of English grammar is such that it can be described by taking the word as the base unit or the sentence as the base unit. Neither the word nor the sentence can be defined satisfactorily, except as the concept it identifies is developed by the grammatical description which uses it as a base. However, in each instance, there is a norm which can be used as a point of departure, and native speakers of a language have a strong intuitive feel for their identities. A word-based grammar usually begins with a definition of classes of words—either the parts of speech of traditional grammar or some break-down into form classes and function words. The latter method can be based on morphological criteria or on syntactic frames, but the two methods lead to different results. (Note: "the poor are often hungry" and "the hungry are often poor.") A sentence-based grammar begins with either a set of patterns which, when filled out with suitable forms, constitute sentences, or with a set of selection rules which, when followed in order, generate a formula for a sentence. This, of course, becomes a sentence when suitable forms are selected for the symbols in the formulas.

The foregoing implies that more than one description of a

grammar is possible—that descriptions can be formulated for different purposes and according to different criteria. They can be more or less complete and thus be adapted to different pedagogical levels. In fact, all descriptions which have so far been presented for school use are less than complete, even by criteria now available. This statement includes transformational-generative grammars, despite the claim to generate all the grammatical sentences of English and only sentences that are grammatical. Moreover, some descriptions are sufficiently compatible to be taught in sequence, provided the presentations are open-ended and appropriate conversion devices are used. Some of these will be given later. In fact, considering the problems in and the purposes of instruction in grammar, and the uses of this instruction, a sequential presentation is likely to be best.

In making decisions as to which grammar, or grammars, to teach, and when to teach it, or them, a further dichotomy should be considered. This is the distinction between matters of information and matters of performance. The first pertain especially to the general objectives of a liberal education—to the acquisition of knowledge about our heritage and our environment. The best protection against intellectual fads is hard information about the underlying substantive facts. Such information includes grammar as description, as the classification and recognition of elements in the language, and it includes grammar as process, as an account of linguistic competence. Matters of performance include composition and the study of literature—the use of linguistic elements to communicate with others, and the interpretation of linguistic elements in order to understand the communicative efforts of others. A description which is useful in these matters should include some means to display the grammatical components in sentences (subjects, modifiers, etc.) in order to teach mechanics and style in composition and to facilitate the comprehension of poetry.

The attitudes which individuals take toward these matters are likely to reflect their immediate interests rather than a comprehensive survey of the objectives in the subject called English. Current estimates as to the utility of grammatical instruction reflect an opinion about some kind of description rather than a judgment as to the potential value of any description. There is no definitive research on the intrinsic value of instruction in the grammatical system to other concerns of English, for no program which includes both accurate information and relevant application has been adequately developed. However, the grammatical system of a language is central to its use as a medium of expression and communication. Hence, a conscious command of

the resources of this system can, at least in theory, be of great practical value.

Current Descriptions

Until about twenty years ago, the teaching of grammar in the schools was hardly touched by advances in linguistic description. Despite a great many minor differences among textbooks, the general design of school grammar had remained relatively constant for more than a hundred and fifty years. Other descriptions began to appear about twenty years ago. The first of these were essentially developments from the linguistic principles formulated by Leonard Bloomfield in 1933. These were behavioristic in psychology and empirical in philosophy. During the middle fifties, Kenneth Pike developed a new but related theory called tagmemics, but this has not been well popularizeh, although some applications of linguistic analysis use some of its principles without using its terminology.

The most drastic departure from the Bloomfield principles, in this country, was made by Noam Chomsky in his 1957 book, *Syntactic Structures*. Chomsky's method is essentially logical and has derived a great deal from modern mathematics. His philosophy is essentially rationalistic. The objectives of the school associated with him include the development of a complete philosophy of language and the discovery of language universals. In a sense, then, he and his followers are returning to objectives pursued by grammarians before the twentieth century.

One should not, however, confuse the notion of universals embodied in traditional school grammar with the concept held by Chomsky. Whereas traditional school grammar treats certain features of surface structure as universals, the modern search for universals is in deep structure. It is assumed that certain symbolic connections are common to all languages, but that these may be manifested in a variety of ways, thus accounting for the obvious differences among languages. Language scholars in the Bloomfield school reacted against the rather superficial notion of universals in traditional grammar, and those in the Chomsky school have reacted against this reaction.

In fact, it is not possible to assess properly any one of the current theories without seeing it in the context of other theories, for each is, to some degree, a correction of its predecessors. Each has begun as a solution to problems which were revealed by an earlier theory but had not been solved by it. The latest in this sequence, in this country, is the stratificational method of linguistic description, which is being proposed by Sidney Lamb and a few others. This is a kind of field theory within which the

related "strata" of a language, including its semantics, can be described individually but as related to each other and according to a common descriptive procedure.

The history of traditional school grammar has been told many times, and its defects have been pointed out frequently. It sets up some false classifications—e.g., the inclusion of *very* and *soon* in the same class, when they have nothing in common except the number of letters in their spellings. It makes some false statements about the meanings of some forms—e.g., the statement that, in English, the present tense indicates action going on at the present time, when, in fact, this meaning is conveyed by the present progressive. Its bases for definition are often contradictory—e.g., the definition of a noun by meaning and that of an adjective by function, when expressions like "a stone house" and "the active are healthy" are common. However, its terminology can be useful, if one makes a few adjustments and relies on the intuition of the students rather than on the wording of the definitions.

Its basic assumption is that grammatical categories and relationships are essentially logical, arising from the nature of human thought. Although this assumption may have some merit, the traditional description carries it too far. It ascribes to English an organization of the verb system which is derived from Latin, although the English verb system is built on a quite different base. A by-product of its history is the fact that some former grammarians have made a false association between grammatical forms and logical thinking, although these forms are products of historical change and have little to do with either correctness or precision in thinking—for instance, the preservation of a distinction between *who* and *whom* and the objection to "it's me." Fortunately the latter charge may be out of date.

One of its chief faults is that it does not invite use of the best pedagogical methods. It has been taught as a dogma, as a set of definitions and rules to be memorized, rather than as something to be discovered by observation. Also, the failure to exploit its possibilities as a means of examining the structures of sentences in literature is, I think, an even greater fault than relying on it as a description of the language. Despite its faults, however, a perceptive teacher can probably achieve better practical results with it than with a description which he does not understand and must therefore present arbitrarily and dogmatically, provided the teacher has the courage to reject whatever is not a true statement. One should not believe any statement about the grammar of English which cannot be verified by observation

of the grammatical structures of sentences in English. The last thing we need is a new dogma.

The apparently secure position which this description held was challenged in the early fifties by another, generally known as structural linguistics. This term, as used in pedagogical discussions, applied to a grammar based primarily on the work of Eugene Nida and C. C. Fries and a phonology based primarily on a system developed by Henry Lee Smith, Jr. and George L. Trager. The latter also developed the fragments of a grammar, but their work in grammar never drew a large following. Descriptions of English structure on this basis, although different in details, were published during the fifties by C. C. Fries, Paul Roberts, James H. Sledd, W. Nelson Francis, and a few others. Probably the best recent book in the structural tradition is that by Norman Stageberg, which shows some modifications of the earlier conclusions.

This approach assumes that a linguistic form is a union of form and meaning but that the proper analysis of a grammatical system must be based on the formal and perceptible signals that appear in samples of the language in use. Structural grammar is formal grammar, but not the grammar of formal English. It makes a fundamental distinction between "grammatical meaning"—indications of class, relationship, and function—and "lexical meanings—the non-linguistic reference of words and constructions, or meaning in the popular sense of the term. Grammatical meanings are those indicated by such signals as word order, inflectional changes, derivational affixes, function words, and intonation. Grammatical categories are based on these signals.

The fundamental difference between traditional and structural grammars can most clearly be demonstrated by illustration. Compare the two sentences: "his turn comes later" and "they turn here often." The second word in each sentence is identical in form, but the first sentence uses it as a noun and the second shows it as a verb. The older grammar says to distinguish the two instances on a basis of meaning; structural grammar says to look for the formal signals which indicate the difference, in this case, word order, or context.

Although the defining principles and several of the basic premises are different, school grammar and structural grammar agree, except in a few instances, in the membership of the word classes traditionally called nouns, verbs, and adjectives. In structural grammar, the class called adverbs does not include *very* and other words that modify modifiers. Words that modify verbs do not, as a class, modify adjectives and adverbs. For

example, *dark,* as in "it was dark green," and *rather,* as in "he is rather tall," do not share grammatical properties with *often,* as in "he is often late," or "they come here often." In most instances other than parts of speech, however, the terminologies of the two systems are compatible.

Words which do not belong to one of the four major classes are called structure, or function, words, for each class of such words has a certain role in designating the classes, functions, or relationships of other words in a sentence. Nouns, adjectives, verbs, and words that modify verbs are open classes and primarily convey lexical information. Function words belong to relatively closed classes—most of which are so small that their membership can be easily listed—and primarily convey grammatical information, although many of them convey some lexical information as well.

Structural grammars give specifications as to the recognition clues, but their theory does not include a satisfactory way to associate morphology and syntax in English, which are asymmetrically related in English. For instance, a word which may be inflected like a noun, such as *stone,* can often be used to modify another noun, as in "a stone house." Also, a word inflected like an adjective, such as *poor,* can be used in a nominal function, as in "the poor shall inherit the earth."

As one can see, this approach is essentially a discovery procedure. A grammatical description is developed by inductive generalization from samples of discourse. An utterance is first divided into sentences by purely grammatical criteria. Then the sentences are divided into two parts called immediate constituents—IC's for short. Each of these constituents is further divided into its two constituents—one division being made at a time—until there is nothing further to divide. The final product of this series of divisions is a string of morphemes, or minimal grammatical units. Thus the ultimate construction is a sentence, and the ultimate constituent is a morpheme.

This kind of analysis demonstrates that a sentence is a composite of structures in a hierarchial arrangement, rather than a linear sequence of words with compatible meanings. In practice, however, it is frequently difficult to frame unambiguous criteria for making all the divisions in all the levels. At times, one must rely on intuition or produce results which are intuitively unsatisfactory. Moreover, the analysis of split constructions is usually awkward, and there seem to be some constructions which are not satisfactorily handled by a sequence of two-way splits. Examples are "I'd rather go to jail than admit he is right," and "it was such a good excuse that he used it often."

In principle, this is a rather simple procedure, and students seem to learn it with little difficulty, especially when they have not previously been taught any other. Generally, it can be taught to students who have been unable to learn school grammar, and it stimulates interest in many bright students who find the school description rather dull or contradictory. Most resistance is encountered from middle-level students, who are able to memorize school grammar and do not have the curiosity to be interested in something which is intellectually more challenging. In addition to greater accuracy of statement and classification, it has two distinct advantages over the older description. First, it is more concrete and specific. The criteria are perceptible and understandable, and, in matters which are not well handled, it is no worse than school grammar.

However, the chief recommendation for this approach is its invitation to discovery procedures. Since the criteria are there for the looking, they can be found by students, who thus get the pleasure of working things out for themselves. The habit of observation and generalization can then be applied to matters of usage and effective style. A teacher who learns structural grammar can use the traditional description more effectively. Although school grammar can be used more effectively than it usually is, its descriptive method is such that practical application is not a natural outgrowth, whereas the best method for teaching structural grammars is itself good pedagogy and leads to its application in practical ways.

During the middle fifties, Kenneth Pike wrote a series of papers on linguistic theory in relation to other kinds of human behavior. These papers, now in book form, provide a basis for a general theory of linguistic analysis and description called tagmemics. This theory is being used as a heuristic procedure for writing grammars to be used in learning languages and for examining units of linguistic discourse, including those longer than sentences. Much of the best work in teaching English as a second language is tagmemic in principle, even when the terminology is not used, but most grammars based on this theory deal with languages encountered by missionaries, for it was designed with their needs in mind. There has been relatively little effort to popularize it for use in English classes—nothing comparable to the efforts made to popularize structural and transformational-generative grammars.

A grammar produced according to this theory is called a "slot-filler" grammar, for it sets up patterns consisting of functional slots which may be filled by some form from a specified list. The union of the slot and its filler is called a tagmeme. Any

construction has a pattern; the pattern has slots; the slots are filled by forms or other constructions. When one has listed all the patterns, on all levels, named their slots in functional terms, listed the possible fillers for each and specified the forms they must have in each slot, he has described the grammar of the language.

This approach is obviously a refinement of the earlier structural approach, but its basis is syntactic patterning rather than morphological form. A structural grammar becomes more nearly a tagmemic one to the extent to which it emphasizes patterning, especially if the parts in the patterns are not restricted morphologically. Whereas the earlier structuralism was, like traditional grammar, a word-based description, this one is sentence-based, and it can be used as a guide for producing, or generating, sentences. A tagmemic grammar can be written as a generative grammar. Practice exercises for increasing student command of grammatical resources can be devised. Also, this method makes the designation of function and relationship a part of the descriptive procedure. It is therefore better in handling such problems as functional shift—that is, adjectives used as subjects (a nominal function), as in "the active are healthy," adverbs used to modify nouns (an adjectival function), as in "the road ahead is rocky," and so on.

In a description of English developed on this basis, a few formulas are given as basic sentence patterns. In practically all formulas for statements and subordinate clauses, the first nominal slot is that for the subject. The predicate begins with the verb slot and includes all the other slots. Questions differ from statements in their beginnings. If the expected answer is a simple affirmative or negative, the sentence begins with an auxiliary verb or a form of *be*, and the subject is that part which is bounded by this auxiliary and the rest of the verb. Commands are formed by omitting a subject (an empty slot) and using an uninflected form of the verb. There are, of course, some variations from these rules, but they can be described by reference to the basic patterns. In principle, a formula can be framed for any construction, such as a noun and all its modifiers, prepositional phrases, and even such adverbial phrases as "five days later," and "three miles ahead."

This theory has the beauty of simplicity, and the valid parts of structural and of traditional school grammars can be worked into its framework. It is quite easy to teach. More important, it provides an account of the asymmetrical relationships between morphology and syntax in English, and it assigns functional labels at appropriate places. By using a fairly simple system of

marking the syntactic units—such as underlining—one can extract and display the grammatical structures and relationships in long stretches of discourse—an essay, story, or poem. It can be developed from a limited corpus that includes only simple structures and then be expanded as more complex material is included. Thus, as a grammar for school use, it has very significant advantages.

However, although a slot-filler grammar deals very well with simple structures, the complexity of the description increases very rapidly as the structural variation increases. Such a grammar is essentially a set of formulas for surface structure, the formal arrangements in actual sentences. These are extremely varied, and formulas which represent them directly must be just as varied. In the development of complex arrangements, only two devices are really available. One may present a set of choices for filling a slot, or he may present a set of means by which the fillers can be expanded. With simple statements, this is ordinarily quite adequate, but simpler means are available for dealing with such constructions as passives, inserted clauses, comparisons, and certain noun clauses in the predicate. A slot-filler analysis breaks down rather quickly when highly conversational material is attacked, for, contrary to popular notions, a conversational style is syntactically more intricate than a somewhat formal style.

A grammar which is limited to expansions and selections in framing simple statement sentences is called a phrase structure grammar. A slot-filler grammar is an instance of this kind. The most recent work in tagmemics uses additional kinds of rules, or processes, to supplement the slot-filler rules, but work of this kind is not well known, and no classroom material based on later developments in tagmemics is available for general use.

According to Noam Chomsky, transformational-generative grammar is part of a general theory of language, and it is not designed as a procedure for writing pedagogical descriptions. However, it is being actively promoted for school use, and virtually all the newest textbooks make some use of it. Many of those who promote its use insist that pedagogical uses are irrelevant, but this insistence overlooks the essential character of composition as linguistic performance and of the study of literature as the interpretation of linguistic performances.

A grammar of this kind (there are several versions) is both generative and sentence-based. It distinguishes between surface structure and deep structure. It presents an account of competence rather than a taxonomy of performances. It includes rules for the selection of proper forms, and it provides for a

lexicon in which words are labelled according to their possible uses in sentences and the factors of co-occurrence which govern this use. Thus, a word like *taste* would be shown as either a noun or a verb. The verb would be marked as available for use as a transitive and as a linking verb. In the first instance, it would be further marked as requiring for its subject a word designating something which, indeed, is capable of tasting. In the second, the subject would be something which has a taste, that is, can be tasted.

In principle, the grammar would specify the structure of any grammatical sentence and only sentences which are grammatical. So far, however, no transformational-generative grammar has been produced which satisfies this principle, although the descriptive procedure has been extended to cover as much as is covered by other procedures. One of the values of this theory is that it reveals how explicit and how comprehensive a complete description of English grammar would have to be. For the same reason, it is being used as a basis for systematic work in the analysis of meaning.

One of the assumptions in any generative grammar is that, in normal communication, one does not merely reproduce a sentence that he has previously learned as a unit. Instead, he makes a new and usually unique sentence for the occasion. This is then understood by someone who has never heard it before. The production and understanding imply that speaker and hearer share a common competence in the grammatical system, even though neither will necessarily be able to verbalize this competence. This fact has moved some grammarians to insist that the objective of grammatical instruction is not the analysis of the structures of existing sentences but the description of the competence which permits the generation of sentences.

The transformational approach to this purpose is based on the further assumptions that a limited number of sentence models, called "kernels," underly all the possible grammatical sentences that can be generated, and that the generation of many sentences requires some processes in addition to those of selection and expansion. The additional rules include operations for turning kernels, which have an active, declarative format, into commands, questions, negative statements, and other sentence types, and for combining kernels so that one is embedded into a matrix formed by another. Thus, the sentence "what he said is true" includes the kernel sentences "he said something" and "it is true." Rules for the generation of active, declarative sentence formulas include "phrase structure" rules, and those for converting or combining these are called "transformational rules."

A kernel is a formula (called a string) which results when only obligatory rules are followed in the generative process.

All rules are given as instructions which are expressed by giving a symbol or set of symbols, then an arrow pointing from left to right, and then another symbol or set of symbols. This means that whatever is on the left is to be transformed into whatever is on the right and that this transformation is into an equivalent, though structurally different, form. Sometimes there is a list on the right from which a selection is to be made. One moves from rule to rule, each time making a change or a choice, until a prescription for a sentence has been produced. This is called a terminal string and is converted into a sentence by supplying actual forms of the language according to the prescription. The series of strings resulting from this process is the generative "history" of the sentence, and sentences are related to the extent that they have similarities in their generative histories.

The first string in the phrase structure component is NP + VP. This comes from the initial rule: S → NP + VP; which is interpreted "sentence (S) consists of (is re-written as) subject (NP) plus predicate (VP)." Each of the symbols in this string is further specified as equivalent to some other symbol, to some set of symbols, or to a word in a list. Some rules are obligatory—they must be used if a sentence is to result; some are optional—they may be used but are not required. A terminal string is one in which no symbol appears which can be further specified by one of the phrase structure rules. It must be manifested by some morpheme of the language. Transformational rules give directions for certain kinds of permutations, such as deletion, addition, or rearrangement.

It might appear that kernel sentences are merely manifestations of basic sentence patterns under a new name, but this is not the case. In many instances, kernels and basic sentence patterns yield the same results, but there is a fundamental difference between them. Basic sentence patterns specify a form or one of a list of forms. In transformational grammar, elements are not merely classified as to form but also according to their roles and limitations in the production of related sentences. Take the two sentences "the dog ate the meat" and "the dog cost fifty dollars." Both of these consist of the same kinds of forms, according to structural criteria. However, the first can be transformed into the passive sentence "the meat was eaten by the dog," but there is no passive equivalent for the second. In transformational grammar, as in school grammar, a verb is not a transitive verb unless it can be used in the passive. To ac-

count for *cost* and other verbs that have thte same limits in occurrence, transformational grammar sets up a class or verbs in addition to transitive, intransitive, and linking. One of the advantages, and disadvantages of this approach is that it reveals a great number of categories and subcategories which are not distinguished by other systems. This gives a grammarian a set of very precise tools, but it may be a source of difficulty in the junior high.

At first glance, a page in a transformational grammar looks like a page in the new mathematics, and one must learn to work with symbols rather than words to do very much with it. However, the symbols are no more difficult than those in mathematics, and the total number is relatively small. A more serious difficulty when using this approach in the early grades is its classification procedure. Transformationalists play down the importance of taxonomy and deny the practicality of definitions for parts of speech. They claim that intuition, when guided by a representative list, is adequate. Thus there are no definitions for parts of speech. An adjective, say, is any word which correctly manifests the appropriate symbol in a terminal string, and so on. A sentence is any of the sequences of words resulting from generation by one of the available processes. It may be that failure to supply recognition clues is a handicap to those who are studying the grammatical system *de novo*. One can, however, overcome this objection by characterizing a sample of words used in place of certain symbols. Such a characterizing statement would be of the form: "if W has the characteristic X, it is a member of the class N." That is, it can replace N in any terminal string that includes N. This is not, of course, a definition of N, and it is possible that some words which, according to the system or the speaker's intuition, could replace N cannot be adequately characterized in terms of overt signs.

If functional labels are attached to formal symbols in the phrase structure component of a transformational grammar, this component becomes, in effect, a grammar on tagmemic principles. Considering the fact that interpretation of a sentence requires recognition of functions, such an addition might sometimes be useful. Although the symbolization of transformational grammars does not readily permit the inclusion of such designations, they can be framed as auxiliary statements. For example, in the rule VP → Vtransitive + NP, the NP can be designated as the object of the verb. The auxiliary statement could be stated thus: "when transitive verb plus NP are both dominated by VP and occur in that order, NP is the object of the verb."

In order to present the structural account of an existing sen-

tence, its derivational history is worked out in reverse by a method similar to those used in structural or slot-filler grammars. The manifesting morphemes are assigned appropriate symbols. Sets of symbols are collapsed to single symbols which stand for the construction as a whole. These are then put together under other symbols, and so on until the final symbol is S, which is the symbol for "sentence." This procedure is usually diagrammed by lines which come together under single symbols so that the result is a kind of tree with the trunk (S) uppermost. Whereas the generation of a sentence is formally explicit, although very abstract, analysis of an existing sentence is largely intuitive, just as it is by other systems. It depends on overt clues in the surface structure, as in other systems, or on familiarity with the generation of similar sentences. In my experience, these trees are not as satisfactory as a system of underlining when one is dealing with extended discourse.

Although tagmemic and transformational-generative grammars have quite different symbolizations and hence cannot well be combined, they are compatible. They can therefore be used in sequence or presented as alternative methods for dealing with the same linguistic material. In general, tagmemics is simpler for simple structures; transformational-generative grammars are simpler for complex structures. The former is easier to use with relatively superficial analysis of extended discourse; the latter reveals more about the individual sentences in mature discourse. The former seems to be adequate for most needs in the study of style; the latter is a better foundation for the serious study of meaning. If these conclusions are true, it seems that a sequence beginning with the former and moving to the latter would be advisable.

This progression would probably not yield good results unless the program is developed sequentially and cumulatively. Since the descriptions differ in theory, some accommodation in each would be necessary. Merely presenting them in sequence would not be satisfactory. The generative concept seems to be sound, although it may lead to unnecessary fragmentation of classes—unnecessary, that is, to native speakers of English. Whatever description is taught, however, two considerations are vital. First, grammatical description should be used as developed. Second, every statement that is made about the details of the language should be tested by reference to actual sentences accepted as normal by native speakers of the language. Any statement that does not pass this test should be rejected as false, for it is.