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Yoshinobu Hakutani
Kent State University - Kent Campus, yhakutan@kent.edu

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In Search of a Universal Grammar

YOSHINOBU HAKUTANI

The school subject called "grammar" has long had connotations of being not only difficult but also dull and uninspiring. Many of us who went through high school and college have often posed the question why do we have to learn English grammar since we already know how to speak and write English without much difficulty? This is perhaps why grammar has been one of the most unpopular subjects all over the world; students simply hate it. It was not so long ago that I heard about a certain doctoral candidate in English who was told by his examining committee that he was not bright enough to write a dissertation on a literary topic but was permitted to remain in the field of linguistics.

Since the emergence of Noam Chomsky, the situation has significantly, if not completely, changed. Though new ideas about language entail new techniques of description and history, the so-called Chomskyan revolution is not just a matter of refining our manipulations of the language—though that in itself would be unimpressive. The new grammarian would not be content with merely proposing better grammars. He goes beyond the study of language per se—to explore the human mind itself, to discover what it is in man that allows him to communicate, in endless new sentences, whatever he can know. Even though that ambitious goal seems to many people unrealizable, it nonetheless reopens whole vistas of inquiry. Linguists today no longer feel a compulsion, as they once did, to justify their field of study; once again their subject is a cognate of psychology and philosophy.

In the small and unpopular academic discipline of linguistics—the scientific study of language—only a handful of scholars first began to discuss the transformational theory some fifteen years ago. At that time, most of the American linguists including Chomsky were still busy at work on structural linguistics. Such linguistics can be called "structural" because they were primarily concerned with what makes up the product called language. They were interested in discovering only the structures that were observable in the "corpus"—the body of information obtained from field notes and tapes which the investigator collected while working with a native speaker of the unknown language. Moreover, structural linguistics grew up under two assumptions, which transformationalists today vehemently disavow. The first led the linguist to believe that each language was unique and that it was the linguist's job to describe its structure in its own terms without comparison to other languages. The second gave rise to the notion that language was, as Leonard Bloomfield believed, "speech sounds which people utter under particular stimuli." This meant that linguists were not interested in explanation—especially in accounting for the psychological processes of language—but only in description, that is, in recording what appeared on the surface of human behavior. Under behaviorist assumptions, then, such concepts as intuition were regarded as being as unfit for scientific study as old wives' tales or dreams.

The aim of a structural linguist was also quite different from that of a trans-
formational grammarian. Before Chomsky, a linguist used to say that he was a *bona fide* scientist trying to "describe language objectively" and "discover its grammar." He would hasten to justify his own activities by pointing out the practical advantages of linguistic training for missionaries, anthropologists, sociologists, businessmen, and world travelers who needed to communicate with those speaking languages for which grammars had not yet been written. The earliest transformationalists worked under such circumstances. But they soon realized that the tradition of structural linguistics—based on behaviorism and deep-seated empiricism—went nowhere. They wondered how it is possible that, if language is only an acquired habit, a mere response to stimuli, an individual can be continually creative in its use. They also wondered how it is possible that any child, with or without much training or stimuli, can acquire language and use it surprisingly with a great deal of sophistication.

Chomsky's *Syntactic Structures*, published in 1957, the first theoretical work in the new field, demonstrated that most essential facts about language could not be explained by structural linguistics. In *Syntactic Structures*, as well as in the subsequent works, the new grammarians have radically departed from their predecessors and emphasized creativity in language. Consequently, they formulated the transformational theory as a more powerful explanation of how sentences are made.

The object of grammatical investigation according to the transformationalists is sentence construction in natural languages. If it were possible to simply combine the sounds or words of a language in any way whatever in constructing sentences—say, to select words from a dictionary by a random device—then grammar would be quite unnecessary. But it is obvious that sentences are not constructed by putting words together from a dictionary. Any one would realize the fact that there are exceedingly subtle and complicated restrictions on the arrangements of words in sentences. The transformational grammar is an attempt to explain these restrictions in detail for the language under study. Furthermore, the transformational theory is concerned with how such grammatical characterizations can be interrelated among all languages.

The first step to take in formulating such a theory is to discriminate between those objects which are under study and those which are not—between combinations of sounds which are sentences of the language and combinations of sounds which are not part of the language. It would be impossible to define the set of well-formed sentences by identifying all of the non-sentences directly; instead, it would be much easier to identify the set of well-formed sentences for that particular language. And yet it would be still difficult to list these sentences simply because they are infinite in number. The only possible way to enumerate the sentences of a language is to define a finite set of rules that can be applied recursively in sentence formation. For example, a complex sentence like *The man I like married the woman my wife can't stand* is composed of a main sentence (*The man married the woman*), an embedded sentence (*I like the man*) which goes into the subject, and another embedded sentence (*My wife can't stand the woman*) which goes into the object. The syntactic rules for simple sentences in this case apply, recursively, three times.

How do such recursive rules work under the restrictions I have mentioned earlier? First, in any sentence, words are grouped by classes. The criteria by which words are classified are based upon the similarity in the way words combine with other words. For example, there is no sentence of the form *She likes in*
English since one of the syntactic features of the verb *like* is that it must take an object, as in *She likes men*. Another verb in English, *love*, functions without this restriction as in *She loves*. In English grammar, and conceivably in other grammars, then, the verb *like* must be marked, in the lexicon, for a certain syntactic feature: \([+ \text{V}, + \text{NP}]\).\(^1\) In this type of grammar, syntactic features must also be related with semantic restrictions. For example, while we can say *Honesty frightens me*, we cannot say *"I frighten honesty* because the verb *frighten* is classified not only as transitive but also taking an animate noun for its object.

The term *generative*, to which transformational grammar is referred, has often been misunderstood by many structuralists. It would, of course, be absurd to think that an actual speaker of the language goes through such rules and restrictions step by step to generate an actual sentence. The model Chomsky and his followers have outlined does not account for the performance of a speaker in sentence formation. The grammatical description, according to them, is nothing but an account of the intrinsic *competence* which must be assumed to be available to an actual speaker-hearer. This competence is thus defined as the unconscious knowledge of the speaker-hearer that he has some way internalized, and is not interfered by such factors as slips of memory, distractions, changes of intention in the course of communication.

Let us, then, consider the competence model that must be assumed in sentence construction. First of all, one must have a set of concepts and put them into a string of words capable of being so interpreted that the intention is communicated. The base component, then, generates such strings that lie beneath the surface of actual sentences. The so-called deep structures contain all the syntactic information necessary for the semantic interpretations of sentences. The deep structure, therefore, specifies not only category information about words (e.g., noun, verb, etc.) but functional relations between words and phrases (e.g., subject, object, etc.) and transformational directions (e.g., how the various simple sentences can be combined to form a single complex sentence). The semantic component, about which very little is known today, provides a mapping of the substructures into larger and larger units, while interpreting their meaning at each level, finally to the full sentence in its rough form. The transformational component, then, performs the mapping of this deep structure, to which a certain semantic interpretation has been assigned, into the surface structure by rearranging the parts in an acceptable form. Finally, the phonological component assigns the surface structure a proper information of sounds that provides the basis for communicating the message from a speaker to a hearer who speaks the same language. See Figure 1 for an illustration of the model.

Suppose a speaker wants to produce the sentence *His knowledge of the barking dog frightened him*. He would take a set of concepts—*something frightened him, he knew something, the dog barked*—and encode them in the deep structure diagramed in Figure 2.

The arrangement is thus made by such branching rules as \(S \rightarrow \text{NP} + \text{VP}\), applied recursively. These categorical rules will assign each end of the string a proper word taken from the lexicon or a dummy symbol to be later deleted in the process of transformation. The syntactic units like *the dog barked* and *something frightened him* are submitted to the se-
The semantic component for semantic interpretation. For example, the use of the verb *barked* is understood in its relationship to the noun phrase *the dog*; the verb *frightened*, whose lexical features include taking an animate object, is readily interpreted in its connection with the object *him*. The transformational component, then, converts *the dog barked* into *the barking dog* since one of the features of the verb *bark* indicates that it can be changed to an adjectival form. *The barking dog* is, in turn, embedded in a sentence, *he knew something*. The sentence is further transformed into the phrase *his knowledge of the barking dog*, which now functions as the subject of the surface sentence *His knowledge of the barking dog frightened him*.

One of the most important assertions
in this theory is that every sentence has both a surface structure and a deep structure. The surface structure is what we speak and what we hear. The deep structure is what we think; it is more abstract and related to meaning, expressing the basic logical relations between nouns and verbs. The necessity of distinguishing between the surface and deep structure can be appreciated by two sentences that have similar surface structures but entirely different deep structures. The often used example is:

1. John is eager to please.
2. John is easy to please.

In the deep structure of Sentence 1, John is interpreted as the subject of the sentence, which means “John pleases people.” In Sentence 2, on the other hand, John is the object of the sentence, which means “People please John.”

What are some of the implications of such theory for the study of man in a wider frame of reference? Chomsky maintained: “The rules in question are not laws of nature, nor, of course, are they legislated or laid down by any authority. They are, if our theorizing is correct, rules that are constructed by the mind in the course of acquisition of knowledge.” If he is right, ordinary communication—virtually every act of communication—is a creative performance governed by rules of such abstractness and complexity that they could hardly be learned by a child unless he were born with such innate capacity for learning. The behaviorist theory that man acquires language merely as a set of conditioned responses seems highly improbable. On the contrary, the rationalist position that language is dictated by a set of prior and uniquely human, mental capacities developed in the process of evolution is much easier to understand.

The theory also enables us to speculate about the possibility of a “universal grammar.” We often talk about differences between dialects and between languages. In American English, for instance, the answer to a question like “Have you read Chomsky’s Aspects of the Theory of Syntax?” would be “Yes, I have,” or “No, I haven’t.” An Englishman might respond to the same question by saying, “Yes, I have done,” or “No, I haven’t done.” This usage might well be a syntactic change of recent origin. The expression is, in fact, slightly different between the two dialects. Is it highly probable that language tends to change in the surface structure but it remains rather constant in the deep structure? Since both dialects obviously belong to the same language, no one would doubt that they operate in the same way as far as their grammar is concerned. But are there similarities between the so-called unrelated languages like English and Japanese? In English, we place an adjective of size before that of color as in a large red car, or place a locative before a time adverb as in I met her in New York last year. Interestingly enough, the same syntactic arrangements are made also in Japanese as in:

(a) oki akai kuruma
large red car

(b) Watashiwa kyonen New York de
I last year in New York
kanojoni aimashita.
her met

Turning to the deeper level of language structure, we may discover far more pervasive grammatical restrictions that govern all languages. It is impossible, for example, to interpret semantically the following utterances because none of them would ever occur in any natural language:

1. John amazed the unfairness of that decision.
2. John is owning two houses.
4. John knew you would die, but he was wrong.
5. John will see you yesterday.
6. John became.

These considerations would allow us to conjecture that despite surface differences, all languages are alike. The deeper we go in our observation, the more identity do we recognize in the structure of human languages.

The duality of deep and surface structure in this new linguistic theory, therefore, enables us to focus our attention on the common ground all languages are based upon. Structural linguists, who were preoccupied with the differences in language that reflect differences in a society’s view of the world, might have overlooked the similarities at the deeper level of language structure. Such neglect could very easily have given rise to the hypothesis that different races, because of different languages, have developed from different origins by a million or more years of evolution. Thus, the new view of language structure and its operation and the postulation of a universal grammar that characterize the transformational theory would seem to strengthen our long suspected vision that man has always been one race. Can we now say with some confidence that human beings are essentially the same?

Kent State University
Kent, Ohio

We have been encouraged (wrongly, I think) by most of our modern texts in rhetoric to believe in something called “the four modes of discourse,” by which is usually meant narration, description, exposition and argument. The Aristotelian system assumes instead that there are only three, all of them subsumed by argument. Exposition is one shape which argument may take, description another, narration another. But at the center of all must be argument. By argument Aristotle means discovered judgment. Men may make assertions of incontrovertible fact, or men may make statements of mere opinion: neither kind of statement is the concern of rhetoric. Rhetoric is concerned with the spacious middle ground between fact and opinion, with the area of probabilities.

Richard E. Hughes
“The Contemporaneity of Classical Rhetoric”
CCC, October 1965

... we must forgive ourselves and our students much. The lame foot finds the path. This kind of forgiving implies acceptance of any little criticism, too: your critic deserves your thanks. In class, if any student, no matter how timidly, states any objection to a small point in a composition, I believe in accepting that criticism, at least momentarily. Since language is social, the smallest impulse of any member of society is relevant to evaluation, and I plead with any student writer, no matter how confident and accomplished he is: “If any classmate offers a criticism, do not ask for whom the bell tolls; it tolls for thee.” Writers and all involved in the discussion of writing must give and take; the process lives by adaptability. In this realm, if you bow right in little things the crown the king wears will eventually be yours.

William Stafford
“The Recognition of Discoveries”
CCC, December 1965