

## DOCUMENT RESUME

ED 089 352

CS 201 179

AUTHOR O'Donnell, Roy C.  
TITLE Roles and Relations in Language Deep Structure.  
Studies in Language Education, Report No. 9.  
INSTITUTION Georgia Univ., Athens. Dept. of Language  
Education.  
PUB DATE Mar 74  
NOTE 14p.

EDRS PRICE MF-\$0.75 HC-\$1.50 PLUS POSTAGE  
DESCRIPTORS Case (Grammar); Deep Structure; \*Grammar; Language  
Universals; Linguistic Patterns; \*Linguistic Theory;  
Perception; \*Sentence Structure; Surface Structure;  
\*Syntax; \*Transformation Theory (Language)

## ABSTRACT

This essay discusses a theory of grammar which incorporated Chomsky's distinction between deep and surface structure and accepts Fillmore's proposal to exclude such subject and concepts as direct object from the base structure. While recognizing the need for specifying an underlying set of caselike relations, it is proposed that this need can best be met by hypothesizing base structure entities called role indicators. According to this theory, the input for linguistic encoding is identified at the perceptual level. The structured entity can be referred to as an event, which is primarily composed of a process or attribute and one or more things in perceived relations to one another. Events are encoded at the basal linguistic level as structured entities which may be referred to as constructs. The output at the overt level, after appropriate syntactic and phonological elements are added, is the structured entity called the sentence. The underlying structure is viewed as being divided into three components: basal, operative, and expressive. This form of grammar can provide insights into criteria for language differences and deficiencies and can suggest that child language may have less syntactic complexity than researchers have attributed to it. (HOD)

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ROLES AND RELATIONS IN LANGUAGE DEEP STRUCTURE

by

Roy C. O'Donnell

Studies in Language Education, Report No. 9  
Department of Language Education, The University of Georgia  
Athens, Georgia

March, 1974

ED 089352

CS 201 179  
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In Syntactic Structures, Chomsky (1957) rejected traditional and structural views of language and set forth his formulation of generative-transformational theory. This theory of syntax was subsequently modified and revised by Chomsky himself and others. In the essay presented here, suggestions are offered for further modification, revision, and synthesis of certain aspects of linguistic theory.

The linguistic theory stated by Chomsky (1965) distinguishes the syntactic component of language from the semantic and phonological components and draws a distinction between deep and surface levels of structure. The syntactic component is divided into two parts: a base and a transformational component. The base is further divided into a categorial subcomponent and a lexicon. The semantic and phonological components are regarded as "purely interpretive." Deep structures, which are generated by the base of the syntactic component, enter the semantic component and receive semantic interpretations. Transformational rules serve to map deep structures into surface structures, which are given phonetic interpretation by the phonological rules.

Revision and extension of generative-transformational theory resulted from the attempt by Lakoff (1970) to explain exceptions to syntactic regularity. Lakoff's proposed exception mechanism led to questioning of the distinction Chomsky had made between syntax and semantics and of the concept of a deep structure distinct from semantic representation. The form of grammar resulting

from Lakoff's investigation replaces Chomsky's categorial subcomponent and lexicon with two systems of generative rules. One of these systems defines the class of possible semantic representations and the other restricts the class of possible surface structures.

In his prefatory comments, Lakoff (1970, p. ix) enumerates some implications of his proposed exception mechanism. He thinks it would:

(1) allow certain sentences to be derived from underlying structures that more closely reflected their semantic representations; (2) permit one to reformulate transformational rules by removing idiosyncratic restrictions, thus permitting transformations in one language to resemble more closely transformations in other languages; and (3) permit the base rules to be simplified, seemingly in the direction of providing universal base rules.

Two of these implications are obviously related to the quest for linguistic universals, a quest which was furthered by Fillmore (1968) in his statement of ideas concerning an underlying set of "caselike relations" that determine syntactic and semantic relations in all natural languages.

Fillmore (1968, p. 1) briefly reviews the recent history of speculation on language universals. He recognizes the distinction between syntactic relations and sequential order of constituents and says: "A common assumption is that the universal base specifies the needed syntactic relations, but the assignment of sequential order to the constituents of base structures is language specific." Allusion is made to the appeals for sequence-free representations of universal deep structure that have been made by Halliday (1966) and Tesnière (1959).

Fillmore argues convincingly that the grammatical notion case deserves a place in the base component of the grammar of every language. He sides with those grammarians who have distinguished between case and inflectional form and calls for "... a conception of base structure in which case

relationships are primitive terms of the theory and in which such concepts as 'subject' and 'direct object' are missing." (pp. 2-3)

The modification of linguistic theory proposed by Fillmore includes the conceptual framework interpretation of case systems, with a clear distinction between deep and surface structure. In his view the base structure of the sentence consists of a verb and one or more noun phrases; each noun phrase in the base structure is associated with the verb in a particular case relationship. He suggests two major constituents of base structure: modality and proposition. Modality includes negation, tense, mood, and aspect. Proposition is ". . . a tenseless set of relationships involving verbs and nouns (and embedded sentences, if there are any) . . ." (p. 23) Fillmore identifies six case notions: Agentive, Instrumental, Dative, Factitive, Locative, and Objective, and he recognizes the need for additional cases.

According to Fillmore: "The case notions comprise a set of universal, presumably innate, concepts which identify certain types of judgments human beings are capable of making about the events that are going on around them, judgments about such matters as who did it, who it happened to, and what got changed." (p. 24)

In the present essay, further modification of linguistic theory is proposed and an attempt is made to bring together what appear to be valid concepts from various theories. Chomsky's distinction between deep and surface structure is assumed to be valid in principle, but his division of language into semantic, syntactic, and phonological components is revised. Fillmore's proposal to exclude subject, direct object, etc. from the base structure is accepted, and it is further proposed that nouns and verbs be also excluded from the base. The need for specifying an underlying set



of caselike relations is recognized, but it is proposed that this need can best be met by hypothesizing base structure entities called role indicators.

The rationale for proposing feature entities called role indicators is related to the fundamental concept of structure. In brief, a structure consists of parts in relationships to one another; the relationships are specified by the roles of the parts. For example, the family is a structured entity composed of individuals who have roles which specify their relations to other individuals in the family. A man has the role of father, a woman has the role of mother, a boy has the role of son, a girl has the role of daughter; but within the larger structure of the family there are substructures in which the man has the role of husband, the woman has the role of wife, the boy has the role of brother, and the girl has the role of sister. The relationships of individuals to one another in the structured entities are defined by the roles of the individuals, and the same individuals take different roles in different relationships.

The analogy of family structure with language structure is not perfect, but it does illustrate the need for role indicators in specifying relations of constituents. Since the concept of role is considered to be more basic than the concept of relation, it is concluded that role identification of constituents is necessary for precise description of the structured entities of language. Thus the explanatory efficacy of a theory of relations is enhanced by recognizing the concept of role in the theory.

Furthermore, it should be noted that the notion of case is limited to nouns, and to some grammarians it will continue to be limited to the surface forms of nouns. Much can be gained, therefore, by applying the

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concept of role to deep structure analysis, since it allows precision in discussion of semantic entities underlying both nouns and verbs. This proposal allows the idea of caselike relations to be preserved, but these relations are explained through role identification of constituents.

The form of grammar proposed here meets a fundamental requirement of universal grammar by specifying relations of constituents in base structures with no necessary sequential order. Although it makes no attempt to assign sequential order to the base constituents, it does not rule out the possibility of their being ordered in some other way.

The input for linguistic encoding is identified at the perceptual level. The structured entity at this level can be referred to as an event, which is primarily composed of a process and one or more things in perceived relations to one another (some "events" involve attributes instead of processes). Events are encoded at the basal linguistic level as structured entities which may be referred to as constructs. The output at the overt level, after appropriate syntactic and phonological elements are added, is the structured entity called the sentence.

The underlying structure of language is viewed as being divided into three components: A Basal Component, an Operative Component, and an Expressive Component.

The basal component generates constructs, which consist of base constituents with their respective role indicators, and a modal index. Base constituents may also be related in subconstructs, which take roles as constituents of the larger construct. The modal index indicates how events are viewed, i.e., as actual or potential, positive or negative, etc. It also distinguishes assertions from queries, present time from non-present, continuing from terminated processes, etc.

The operative component is divided into subcomponents, one of which assigns functions (subject, predicator, direct object, etc.) to base constituents

and categorizes them as nouns, verbs, adjectives, or adverbs. A second subcomponent supplies syntactic features (+ plural, + past, etc.) and functors (articles, preposition, copula, etc.). Rules determining sequence of elements in overt structure also come from the operative component.

The expressive component consists primarily of phonological features and rules, but it is viewed broadly enough to include features and rules for graphic and other forms of linguistic expression.

It should be noted that while these three components are similar to the semantic, syntactic, and phonological components of Chomsky's grammar, they are not identical with his components. Although the base constituents are primarily semantic in nature, their roles determine the range of possible syntactic relationships. The Operative Component is primarily syntactic and the Expressive Component is primarily phonological, but the totality of semantics inheres in all three components.

A problem of a practical nature arises from the need for unique symbols to represent base constituents. Since the constituents themselves are viewed as combinations of semantic features, precision might be gained by combining symbols of specific semantic features. But even if the significant features could be identified and represented, the resulting combinations would be so complex as to prohibit graphic use. Of all available alternatives, the least objectionable seems to be a system of alphabetic representation. Thus, the base constituent underlying the overt forms dog, dogs, etc. is represented by the upper case letters DOG. Similarly the constituent underlying touch, touched, etc. is represented by TOUCH. In languages other than English, locally appropriate alphabetical symbols would be chosen instead of these.



The role indicators needed to specify relationships of base constituents in constructs and subconstructs include the following: processive, attributive, agentive, and receptive. These role indicators serve to distinguish processes, attributes, agents, and receivers from one another. Role indicators to accompany subconstructs include nominal, causal, temporal, spatial, and conditional. This list of role indicators is obviously incomplete, and the suggested names are highly tentative; but presumably an adequate list would allow formulation of generative rules for the constructs underlying sentences.

The following examples are intended to illustrate some of the uses of role indicators in underlying constructs.

1.1a

## UNDERLYING STRUCTURE

Basal Component

constituents:	TOUCH	DOG	CHILD
roles	: processive	receptive	agentive
modal index :	positive, assertion, actual, terminated, etc.		

---

Operative Component

function:	predicator	direct object	subject
category:	verb	noun	noun
features	+transitive	-plural	-plural
and	+past	+article	+article
functors:		+definite	+definite
sequence:	2	3	1

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Expressive Component

phonological features:	(not indicated in this illustration)
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Overt Sentence: The child touched the dog.

1                      2                      3

1.1b

## UNDERLYING STRUCTURE

Basal Component

constituents:	TOUCH	DOG	CHILD
roles :	processive	receptive	agentive
modal index:	positive, assertion, actual, terminated, etc.		

Operative Component

function:	predicator	subject	modifier
category:	verb	noun	noun
features	+transitive	-plural	-plural
and	+passive	+article	+article
functors:	+past	+definite	+definite
			+preposition
sequence:	2	1	3

Expressive Component

phonological  
features: (not indicated in this illustration)

Overt Sentence: The dog was touched by the child.

1                      2                      3

The same basal component is assumed to underlie sentences 1.1a and 1.1b, but the operative components are different.

The construct diagrammed below shows the base constituents of 1.1 combined in a subconstruct. The construct underlies sentences 2.1a, "That the child had touched the dog was obvious" and 2.1b, "It was obvious that

the child had touched the dog." Illustrations of the underlying structure of these sentences are presented below.

2.1a

## UNDERLYING STRUCTURE

Basal Component

constituent:	OBVIOUS	TOUCH	DOG	CHILD
roles :	attributive	processive	receptive	agentive
		/-----/		
		nominal		

modal index: positive, assertion, actual, terminated, etc.

Operative Component

function:	predicative	predicator	direct obj.	subject
category:	adjective	verb	noun	noun
		/-----/		
		subject noun clause		

features	+copula	+transitive	+plural	-plural
and	+past	+past	+article	+article
functions:		+perfective	+definite	+definite
		/-----/		
		+relative		

sequence:	2	1b	1c	1a
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Expressive Component

phonological features: (not indicated in this illustration)

Overt Sentence: That the child had touched the dog was obvious.

1a                    1b                    1c                    2

The Basal Component of 2.1b is the same as that of 2.1a; by adding the functor It in the operative component and changing the sequential order, we account for "It was obvious that the child had touched the dog."

We can also account for the sentence "Obviously, the child had touched the dog" by making a slight change in the basal component and corresponding changes in the other components. The roles of OBVIOUS, TOUCH, DOG and CHILD would remain the same, but the latter three constituents would not compose a subconsturct with nominal role. In the operative component OBVIOUS would be categorized as an adverb instead of an adjective and no copula would be added. The verb and the two nouns would not combine to form a noun clause functioning as subject and the relative that would not be added. The sequential order would place the adverb first, then the subject, predicator, and direct object. Appropriate adjustments in the modal index and elsewhere would account for "Obviously, the child had not touched the dog," "Was it obvious that the child had touched the dog?" etc.

The distinction on the one hand between constructs and events, and on the other hand between constructs and sentences facilitates discussion of various language-related issues, some of which are mentioned in the following paragraphs.

Since the ability to perceive events is universally shared by language users, and since events are encoded in constructs at the basal level of language, it follows that the basal level is the most nearly universal level of language. The grammatical machinery and phonological forms differ from one language to another and from one dialect to another, but the base is relatively constant. While it may be influenced by feedback from the overt forms of the local language, a substantial part of the basal structure is undoubtedly universal.

Although sentences are viewed primarily as linguistic output, once uttered they become events in perceptual experience. Presumably, every

language (and dialect) has the resources to process any idea its users can conceive, but because of the environment in which a specific language has evolved, it may either encourage or discourage the perception and processing of certain kinds of phenomena. Thus, a language both shapes and is shaped by the experience of its users.

While it is true that language differences and language deficiencies are not necessarily the same, given specific criteria it is possible to identify language deficiencies. Individual deficiencies in perceptual ability would necessarily lead to deficiencies in ability to encode events. It is also possible that an individual may fail to develop a normal degree of mastery of the operative and expressive components of his language and thus be language-deficient. To the extent that basal structure is shaped by linguistic feed-back, a given language or dialect may be more efficient than another in processing information related to specific phenomena and relationships.

This view of language structure suggests that child language may have less syntactic complexity than contemporary researchers have attributed to it. The complexity it does have is directly related to the complexity of the constructs in which events perceived by the child are encoded. Since the child's perceptual ability is limited by his level of maturation, it follows that his ability to form constructs is similarly limited. Likewise, his ability to handle the operative and expressive components of language is severely restricted. Apparently, the early utterances of child language are essentially restricted constructs with a minimum of necessary phonological features added; the operative component seems to be bypassed almost entirely.

When the child utters a single "word" it may be the overt manifestation of the construct constituent most significant to him; when he puts two "words" together they may represent the two units in a construct most significant to him. It may be that with the exception of linear sequence, these utterances



are almost totally lacking in surface syntax; perhaps they can be understood because they have the relationships established by role indicators in base structure.

It is possible that the child speaks in simple structures because his perceptual faculties enable him to attend only to a limited part of what the adult perceives as a whole event. Even when he is mature enough to perceive simultaneously the related parts of an event, he may still lack ability to perceive the relations among the parts of the event. This perceptual limitation may be more significant than the physical limitation of ability to string words together in utterances.

The fact that the form of grammar proposed here provides insight into issues such as those mentioned above suggests its value to researchers in various branches of linguistics.

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