A SET OF PRINCIPLES FOR THE DESCRIPTION OF A LANGUAGE

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The following article is an attempt to formulate some principles for the structural description of a language. They have been used successfully to characterize the expression systems of half a dozen Philippine languages (Tagalog, Bicol, Ibanag, Pampango, Waray, and Cebuano) and English, and may thus be said to be adequate at least for these languages. The discussion which follows is divided into three parts: I — the nature of description in general, II — the nature of the object of a linguistic structural description in particular, and III — a proposed descriptive formalism.

1. THE NATURE OF DESCRIPTION

Description, in general, implies the assignment of characteristics to what is being described. Thus, if one wants to describe a mango, one could say that it is heart-shaped, green in color when unripe, and yellow when ripe. The type of description under discussion here is the so-called 'structural description'. To describe an object structurally, one must identify its constituent parts and state the relations between them. A statement of the relations between the parts, in turn, requires an explanation of their functions in the whole. Thus, if one wishes to describe a watch structurally, it is necessary to identify the springs, wheels, cogs, etc. that are its parts and explain their functions in the timepiece. A description should be coherent; and to be coherent, it must be made from a particular point of view. Once this viewpoint is adopted, certain features are considered relevant, while others are left out. Every object of description, however simple it may appear at first sight, may be revealed as quite complex. It is thus possible to describe it from various viewpoints.

1.1 ALTERNATE METHODS OF INFERENCE

The purpose of description is to communicate knowledge of an object. The objects of empirical science, are all knowable by observation. From observation of an object, inferences are made with regard to its structure. Although all linguists agree that linguistics is an empirical science, they do not agree on how one can or should make inferences from observation. Thus, Chomsky has set his own 'transformational' approach against all those approaches which he calls 'taxonomic' (Chomsky 1964:11). This dichotomy 'transformational' — 'taxono-

mic' corresponds to Toulman's dichotomy between the methods of inference of what he calls 'Historia Naturalis' and 'Physics' (1960:53). To the former belong such disciplines as botany, zoology, etc.; to the latter belong physics, chemistry, astronomy, etc. 'The natural historians... look for the regularities of given forms; but physicists seek the form of given regularities.' The former is what some scientists call 'bug hunting', because it is a mere collection or listing of data; the latter, on the other hand, is a matter of insight.

1.2 Alternate Orders of Description

In the description of an object, one may proceed either from the complexity of the whole or from the combinability of its parts. Clearly both approaches will have the same objective validity if properly formulated. The choice between these two approaches is motivated by the observer's judgment as to which has the greater structural determinacy, the integral manifestations of the whole or its ultimate parts; and more especially by what the observer intends to say and leave unsaid.

2. The Nature of the Object of Description

Even before the scientist begins his observation of the object of study, he makes certain assumptions, together with other empirical scientists, about the totality of human experience. The following are some of these assumptions:

(a) the various segments of human experience are not contradictory, but rather belong to an underlying system;
(b) this system is structured as a whole with constituent parts;
(c) there is a hierarchical arrangement of these constituent parts, such that larger units include smaller units, and the smallest units are elements;
(d) these constituent items are function classes whose arrangements involve considerations of order (e.g. whether simultaneous or sequential);
(e) finally, it is possible to isolate one constituent from other constituents not dependent on it and to describe its structure.

From these general assumptions of empirical science, the individual scientist then makes further assumptions with regard to the particular object of his study. Thus, the linguist makes certain assumptions with regard to the nature of human language.

2.1 Definition of Language

A linguist's definition of language is based on certain assumptions which he makes on its nature. The following definition is that of André Martinet (1960), whose assumptions may be stated briefly in the form of propositions. The first is that language is man's faculty for making himself understood by other men by means of speech signals. The second is that an utterance which makes sense is a linguistic sign, which has a double aspect, namely: (a) *significatum* or meaning, e.g. 'I have a headache', which is placed between single

quotation marks; and (b) a *significans* or expression, e.g. French /ž e mal a la tet/, which is enclosed in slant lines. The third assumption is that language is doubly articulated. Here, the term 'articulated' is used in its original Latin meaning of 'a combination of distinct units'. The first articulation consists of *monemes*, i.e. minimal units with meaning and vocal expression. Every fact of experience communicated, and every need one wants to make known to another is analyzed into one, or a succession of these minimal signs, each with a (spontaneous or unsystematized) vocal form and meaning; and each speech community analyzes experience in its own way according to its culture. The second articulation consists of *phonemes*, i.e. minimally distinctive sound units. Each language has a limited number of these, which are combined in various ways to give the vocal form (or expression) of the various meanings of minimal signs. It is now possible to give a definition of human language: a language is an instrument of communication in virtue of which human experience is analyzed differently in each community into units, or monemes, each with a semantic content and phonic expression; the phonic expression is articulated in its turn into distinctive and successive units, called phonemes.

2.2 How A Language Functions

The fourth assumption is that language fulfills its function as an instrument of communication by a system of: (a) contrasts and oppositions, and (b) constraints and freedoms. Linguistic units. whether in the first or second articulation, show two types of relationships, namely: (i) horizontal or syntagmatic, as for example, in the French sentence /ž e mal a la tet/ 'I have a headache', /e/ has a syntagmatic relationship with /z/ which precedes it and /mal/, which follows it; here, the term *contrast* is used to describe this relationship; (ii) vertical or paradigmatic, as for example in the French sentence above, /mɛ̃/ "hand" and /žãb/ 'leg' can substitute for /tet/; here, the term *opposition* is used to describe this relationship. The different units which are related by contrast are called 'order groups'. By definition, the term includes one or more units related on the syntagmatic axis, e.g. English 'Tom', 'the boy', 'the big boy', 'the very big boy', etc. The different units which are related by opposition are called 'alternation groups'. By definition, the term includes one or more units which are related on the paradigmatic axis, e.g. in the English sentence *Tom hit Bill*, the units which can occur in place of *Tom* are 'Tom and Harry', 'the boy', 'the big boy', etc. Every member of an alternation group is an order group; and every order group belongs to an alternation group.

In addition to the system of contrasts and oppositions, language also functions by a system of constraints and freedoms. The constraints are evident in the obligatory forms which constituent units must have in various types of utterances. Thus, for example, the verb *hit* has various obligatory forms in the following sentences:

(a) Tom *hits* Bill.
(b) I saw Tom *hitting* Bill.
(c) I asked Tom *to hit* Bill.

In (a), the utterance may be described as a 'declarative sentence', and here the verb 'hit' has an obligatory form which may be described (in terms of syntactic categories) as a 'finite mood': thus, one cannot say * *Tom to hit Bill.* In (b), the utterance may be described as a type of indirect statement and here the verb has an obligatory form which may be called a 'participial mood': thus, one cannot say * *I saw Tom hits Bill.* In (c), the utterance may be described as an indirect request, and here the verb has an obligatory form which may be called an 'infinitive mood': thus, one cannot say * *I asked Tom hitting Bill.* This constraint, which language imposes on the form of the constituents of its utterances, is necessary for the speaker to be understood by the other member of the speech community. On the other hand, the freedoms are evident in the optional forms which constituents can have in the various types of utterances: thus, for example, the verb 'hit' can have the following optional forms in the three types of utterances above:

(a) Tom *hits* Bill.
Tom *will hit* Bill.
(b) I saw Tom *hitting* Bill.
I saw Tom *hit* Bill.
(c) I asked Tom *to hit* Bill.
I asked Tom *to be hitting* Bill.

In (a), the verb in the finite mood may have the optional forms 'hits' or 'will hit', which may be described (in syntactic categories) as 'present tense' and 'future tense' respectively. In (b), the verb in the participial mood has the optional forms 'hitting' and 'hit', which may be called 'present tense' and 'preterite tense' respectively. In (c), the verb in the infinitive mood has the optional forms 'to hit'and 'to be hitting', which may be called 'present tense' and 'future tense' respectively. Thus, the syntactic category of 'mood' in English indicates the obligatory forms which a verb must have in the various types of utterances, while the syntactic category of 'tense' indicates the optional forms it can have. The constraints of language have been described in such terms as 'government', 'concord', etc., but I am not aware at this time of existing terms which describe the freedoms of language. At any rate, it is helpful to relate these constraints and freedoms, and to view them as one of the systems by which language functions. It is, therefore, convenient to have a pair of terms to describe these two features of language. The term 'proper state categories' and 'modal categories' are introduced here for this purpose. The term 'modal' is Martinet's (1960:117). The term 'proper state' is borrowed from physics, since it has been used in that science to describe features which are analogous to the constraints of language. Its more common equivalent, 'eigenstate', is a half-translation from German (like 'liverwurst'), but has become part of the scientific language like such terms as 'eigenfunctions', 'eigenvalues', etc. If this combina-

tion of a term from physics and one from linguistics is objectionable, some other pair of terms can be substituted. At any rate, what is important is that the two grammatical categories of constraints and freedoms of language be viewed as constituting one system in the functioning of a language. The two systems of contrasts and oppositions, on the one hand, and constraints and freedoms, on the other, provide the speaker of the language with options on various forms: each form that the speaker uses implies a choice, and the choice is made according to his wish or need to communicate.

2.3 The Structure of Language

The fifth assumption is that language is linear. Since utterances are produced by successive movements of the speech organs, they are perceived by the ear as successive sound units. It is thus possible to represent such utterances by separate symbols for each distinct sound. The sixth assumption is that the various units of language have a composition which is either sequential or simultaneous. *Sequential composition* implies that the before and after arrangement of constituents changes the identity of the unit, e.g. /pæt/, /tæp/, /æpt/ are three different word expressions in English. *Simultaneous compositions,* on the other hand, implies that the before and after arrangement of constituents does not change the identity of the unit, e.g. English /p/ consists of the distinctive features 'bilabiality', 'occlusion', 'voicelessness', etc., and there is no relevance in the arrangement of these constituents. The seventh assumption, (and here, perhaps, I depart somewhat from Martinet), is that the hierarchical structure of the constituents of language can be described in terms of levels, such that it is possible to identify a typical unit on each level. Such a unit on a particular level is related to the units of a lower level in that it includes these units; it is related to the units of a higher level in that it is included in them: thus, for example, the syllable is the typical unit on the syllabic level which includes phonemes on a lower (phonemic) level, and is included in the units of a higher (word) level.

2.4 The Scope of Structural Description

Finally, (and here again, perhaps outside the Martinean spirit), it is possible to limit the scope of a structural description of language to its formal aspects. Formal description is concerned mainly with the composition of constituents and their distribution, i.e. the various combinations that these units enter into in the language. This does not imply that meaning is left out of the picture. The minimal units of the first articulation have meanings and can be identified only in terms of their meanings. Likewise, the minimal units of the second articulation can be established as distinctive only by the fact that they signal a difference in meaning. This follows from the nature of the linguistic sign, which is a unit with both meaning (content)and expression. However, once the identity of the linguistic sign is established it is possible to refer to the linguistic sign

by its expression. The description of the structure of the system of signs of the language may then be regarded as identical with the description of the structure of their expressions.

3. Descriptive Formalism

The descriptive formalism proposed here is the direct result of an attempt to deal with the nature of the object of a linguistic structural description, i.e. language. Martinet himself did not insist on a particular apparatus or set of terms and notational conventions for the description of a language. For the most part, the terms and notational conventions proposed here are those used in linguistics today. However, there are a few terms and notational conventions which have been introduced here for the first time. The reason for introducing them is that they are required by the particular (functional) viewpoint adopted here, and the object of description. It is, therefore, proper to call the descriptive formalism 'functional-structural'. The following sections will be devoted to explaining the details of this approach, and is subdivided into two sections: (a) terms, and (b) notational conventions.

3.0 Terms

Here, the terms proposed for the descriptive formalism will be explained by presenting a table with the list of terms, and then an explanation of each term.

Components	*Levels*	*Units*	*Constituents*
S			
Y	Period	Periods	Sentences
N	Sentence	Sentences	Phrases
T	Phrase	Phrases	Words
A	Word	Words	Monemes
X			
Morphology	Moneme	Lexemes and Morphemes	Morphophonemes
P			
H			
O	Word Expressions	Syllable Structures	Syllables
N	Syllable	Syllables	Phoneme Clusters
O	Phoneme Cluster	Phoneme Clusters	Phonemes
L	Phoneme	Phonemes	Distinctive Featers
O			
G			
Y			

The chief characteristic of language, as we have seen above, is its double articulation. In the first articulation, the minimum signs (monemes) have both content and (vocal) expression. These are then combined into more complex signs. Every meaningful utterances in the language can thus be analyzed in terms of one, or a succession, of these signs. In the second articulation, the

minimum units are not signs (with both content and expression) but only distinctive units of sounds (phonemes) which are combined in various ways to form the expressions of the signs of the language. In describing the combinatory patterns of these minimal units in both articulations, one may start from the most complex combinations to the least complex or vice versa. This can be done by recognizing a hierarchical arrangement in the structure of these complex signs, such that the most complex signs can be viewed as the largest units which have smaller units as their constituents, and these smaller constituents have in their turn smaller units as their constituents, and so on until finally the smallest units (or elements) are described.

In theory, it is possible to recognize an indefinite succession of arrangements or levels of larger units which have smaller units as their constituents. On each level, there is a typical unit which has as its constituents the smaller units of a lower level and is itself a constituent of the larger units of a higher level. In practice, however, it is the complexities of the systems of signs in the language which determine how many such levels it is convenient to recognize for purposes of clear structural description. Usually, it is necessary and sufficient to recognize four such levels; however, the possibility that a particular language may require more levels is not excluded.

The highest level in syntax is called the 'period level'. The typical unit on this level is the period, which is characterized by a contour final intonation, i.e. intonation configurations represented orthographically by a period, question mark, or exclamation point. It's constituents are sentences, as for example: English *I came, I saw, I conquered.* The next highest level is called the 'sentence level', whose typical unit is the sentence; its constituents are phrases.

The next level is called the 'primary dependent' (Martinet's term) or 'phrase level', whose typical unit is the phrase; its constituents are words. The lowest level is the 'word level', whose typical unit is the word; and whose constituents are monemes. The term 'moneme' is used as a cover term for both *grammatical morphemes,* which belong to closed inventories, and *lexemes,* which belong to open inventories. Unfortunately, both are called 'morphemes' by some linguists.

On the monemic level of analysis, the units are monemes, and the constituents are morphophonemes, e.g. the morpheme /wayF/ is composed of the morphophonemes /w/, /a/, /y/, /F/.

The highest level in phonology is called the 'word expression level'. This term is used to call attention to the fact that in the second articulation, the units are not signs (with content and expression), but only the expressions of signs. The typical unit on this level is the syllable structure; its constituents are syllables. The next highest level is the 'syllable level', whose typical unit is the syllable; its constituents are phoneme clusters. The next level is called the 'phonemic level', whose typical units are called phonemes; and whose constituents are distinctive features, e.g. English /p/ is composed of the distinctive features 'bilabiality'. 'occlusion', and 'voicelessness'.

3.2 Notational Conventions

For clear description, linguists have found it immensely helpful and even necessary to represent symbolically constituents and their relations as parts of a whole. The complexities of language are such that unless symbols are used to represent them, it soon becomes very difficult to see how the different units fit into the total structure. In the ultimate analysis, it really does not matter how one represents structure. Linguists prefer one system over another for various reasons—sometimes because it is more familiar to them, or because it has been used to describe a great number of other languages, or it is simpler in the sense that it uses less graphic symbols to represent identical relationships.

3.2.1 Constants and Variables

Assuming that language can be described in terms of a whole with hierarchical arrangements of its constituent parts such that larger units include smaller units down to the smallest units or elements, it is convenient to use the notational convention of constants and variables. A *constant* may be defined as a symbol or graphic sign (here, the lower case letters are used) which represents a description of an object or a term, e.g. *a, b, c* may represent a description of 'Peter', 'book', 'horse'. A *variable* may be defined as a symbol (here the capital letters are used) which represent a class of objects, e.g. *N* may represent *a, b, c* (Bocheński 1965:4). One can use the variable to represent the units and the constant to represent its constituents, e.g. the unit 'consonant cluster' can be represented as *Cl,* and its constituents in English are /kl/, /pl/, /bl/, etc.

So far, the type of variable described is the type which provides a notational convention for the representation of units whose constituents are sequentially arranged, i.e. for the description of the syntax of the language. This type of variable, however, is not convenient for the representation of units whose constituents are simultaneously arranged, i.e. for the description of the morphology of the language. Thus, for example, one needs a way of representing the inflectional paradigms of a language. One needs a way of showing how a form like /rosárum/, in Latin, is related to the other forms in the paradigm, i.e. that it is the genitive case, plural number of the root /ros/ 'rose'. This can be done by: (a) recognizing another type of variable, namely, a 'process variable', and (b) a notational device for citing a form from a paradigm.

There is a notational convention which serves the need of a 'process variable', namely, arguments and functors. An *argument* may be defined as a symbol (here, doubled capital letters are used, e.g. NN, VV, or doubled capital letter followed by lower case letters, e.g. AAdj, AAdv) whose value is determined by a functor; and a *functor* is a symbol which determines another symbol (in this case, the argument). Thus, 'sky' is the argument and 'beautiful' is the functor in the expression 'beautiful sky'; and 'Peter' is the argument of 'runs' in the expression' Peter runs'. (Bocheński 1965:4). Thus, the argument can represent the Latin root /ros/ and the functors can represent the categories of case

and number, such that when the genitive case and plural number functors are used to determine the root /ros/, the result is the form /rosárum/.

There are two types of functors: (a) proper state functors, which represent proper state categories, which in their turn represent the 'constraints' of language; (b) modal functors, which represent modal categories, which in their turn represent the 'freedoms' of the language. The proper state functors are represented as superscripts and the modal functors as subscripts, e.g. V_m^{∞} means the verb paradigm of the non-finite (∞) proper state and (m) modal categories. An alternate notation is to represent the proper state functors as denominators and the modal functors as numerators, e.g. $\frac{m}{\infty}VV$. To be used as a syntactic variable, the argument must be determined by functors representing one proper state and one modal category, e.g. $V_{tr}^{\overline{\infty}}$ means the finite proper state and the transitive modal category of the verb paradigm.

3.2.2 The Lambda Functor

There is a notational device for citing a form belonging to a paradigm, namely, the lambda functor. This was introduced by Alonzo Church in 1932, and was discussed by him again in 1936. The following is an explanation of this notational device by Feys (1944:75):

> 'A lambda functor consists of a lambda operator formed by λ and a letter, and an expression *M* enclosed in parenthesis or preceded by a point . . . by the lambda functor $\lambda\Phi(M)$ or $\lambda\Phi.M$ is expressed that which when applied to a Φ yields the expression *M*. *M* is as it were the characteristic determination which changes Φ into M.'

An example of the use of the lambda functor as a notational convention for citation is the following: the form /rósa/ in Latin is the nominative (nom.) case, singular (sing.) number of the root /ros/ 'rose'. If one wishes to cite the form which is the genitive (gen.) case, plural (pl.) number of the form /rósa/, then one can do so as follows:

gen, pl nom, sing /rósa/ = (/rosárum/)

3.2.3 Proposition-Forming Symbols

So far, we have introduced symbols to represent the terms in the description. It is now necessary to introduce two proposition-forming symbols, namely: (a) the *composition* symbol = , and (b) the *inclusion* symbol $\in$ or $\ni$. The composition symbol = means that the symbol or group of symbols on the right of it are the constituents of the symbol or group of symbols to the left of it: thus, e.g. S = AB means S is composed of A and B. The inclusion symbol means that the symbol or group of symbols on the front side of the symbol is a member of the symbol or group of symbols on the rear side of the symbol: thus, e.g. S $\ni$ A means that A is included in S, and S $\in$ A means that S is included in A.

3.2.4 Term Forming Symbols

The next step is to introduce a notational device for forming new terms already in the system. There are three such symbols: (a) those that represent order groups, (b) those that represent alternation groups, and (c) the symbol for iteration.

It is necessary, in the system of notational convention proposed here to introduce a symbol for forming new terms from the terms already in the system. There are three such types of symbols: (a) those that represent order groups, (b) those that represent alternation groups, and (c) the symbol for iteration.

The symbols which represent the relationships between order groups are subdivided into three types, namely (and here the terms of Hjelmslev are used (1963:24): (i) *solidarity* or interdependence, which is symbolized by a dot: thus, e.g. $S_1 = A \cdot B$. means that both A and B are constituents of S_1 and neither A nor B alone is an S_1; (ii) *determination* or subordination, which is symbolized by an arrow $\leftarrow$ or $\rightarrow$: thus, e.g. $S_2 = A \leftarrow B$ means that S_2 is composed of A, and B may or may not be with A (i.e. A is the obligatory constituent of S_2, while B is optional); (iii) *constellation,* or coordination, which is symbolized by -: thus, $S_3 = A\text{-}B$ mens that S_3 is composed of both or either A and B. With regard to the order of the constituents of an order group, it may be: (i) *simultaneous,* which is symbolized by a comma: thus, S = A, B, C means that S is composed of A, B, and C which are interchangeable as regards their order of precedence; (ii) sequential, which is symbolized with a space between the constituents: thus, S = A B C means that S has as its constituents A, B, and C and that B is preceded by A and followed by C.

The symbol which represents the relationships between the constituents of an alternation group is $^{\infty}$: thus, $S_4 = A^{\infty}B^{\infty}C$ means that S_4 is a paradigm whose constituents are either A, B, or C.

A new term may also be formed by simply repeating a term. The symbol in the convention for iteration is the exclamation point ! : thus $S_5 = A\,!$ means that S_5 consists of one or more than one repetitions of A.

3.2.5 Illustration of the Notational Convention

It may now be helpful to illustrate the notational convention proposed here by comparing it with another convention. Here, the set of notations are those used in Elson and Pickett's *An Introduction to Morphology and Syntax.* The comparison will have the following form: the first column will present the symbols used by Elson and Pickett together with the numbers that they give (1964: 60); the second column will contain two paragraphs: one will give the translation of the symbols given by Elson and Pickett; this will be followed by a second paragraph which will give a translation of the equivalent symbols used in the proposed convention; the third column will then give the equivalent symbols

proposed in this convention. There is no polemic intended in this comparison; it is presented here solely for purposes of an illustration of the notational convention proposed:

(1) $+ A : a + B : b$

Both tagmemes are obligatory. The syntagmatic complexity of S_1 consists of a solidarity of A and B, i.e. it takes both A and B to make an S_1, e.g. *John runs.*

$S_1 = A \cdot B$

(2) $+ A : a \pm B : b$

One tagmeme is obligatory and one is optional.

The syntagmatic complexity of S_2 consists of a determination of A by B, i.e. S_2 is formed by A or A together with B, but not by B alone, e.g. *John runs fast.*

$S_2 = A \leftarrow B$

(3) $+ (\pm A : a \pm B : b)$

Each tagmeme is optional, and either or both may occur, but one must occur.

The syntagmatic complexity of S_3 consists of a constellation of A and B, i.e. either A or B or both together make an S_3, e.g. *heavy oak timbers.*

$S_3 = A — B$

(4) $\pm A : a \mp B : b$ or $+ \dfrac{A : a}{B : b}$

Each tagmeme is optional, one or the other must occur but not both.

S_4 has as its paradigmatic complexity an alternation of A and B, i.e. A and B commute in S_4, e.g.

$\left\{ \begin{matrix} a \\ the \end{matrix} \right\}$ *good book*

$S_4 = A \infty B$

(5) $\pm A : \pm B : b$

Both tagmemes are optional (but some other tagmeme in the construction is obligatory).

S_5 has a syntagmatic complexity of determination of X by a constellation of A and B, i.e., every S_5 involves an X and also possibly an A or B or both, e.g. *he gave me much wise kindly advice.*

$S_4 = X \leftarrow (A — B)$

(6) $\pm (\pm A : a \mp B : b)$ or $\pm \dfrac{A : a}{B : b}$

Both tagmemes are optional, but only one or the other may occur (and some other tagmeme in the construction must occur).

S_6 has a syntagmatic complexity of a determination of X by either A or B, i.e. an S_6 is an X possibly accompanied by either an A or a B, e.g. *Er kommt wohl/nicht.*

$S_6 = X \leftarrow (A \infty B)$

(7) $\pm (+ A : a + B : b)$

Both tagmemes are optional, but the two must occur together.

S_7 has as its syntagmatic complexity a determination of X by a solidarity of A and B, i.e. an S_7 is an X possibly accompanied by both A and B together, e.g. He did it for Bill.

$S_7 = X \leftarrow (A \cdot B)$

(8) $\pm (+ A : a \pm B : b)$

Both tagmemes are optional, but the second does not occur without the first.

S_8 has as its syntagmatic complexity a determination of X by A, which is itself determined by B, i.e. an S_8 is an X possibly accompanied by an A or by an AB, e.g. He ran very quickly.

$S_8 = X \leftarrow (A \leftarrow B)$

It should be pointed out, in passing, that there is no need to represent the functions of forms in the notation as Elson and Pickett do. The different symbols which represent the forms of the language have to be represented in sequence as a matter of necessity, and it is convenient to make use of this sequentiality to represent the functions of forms. Thus, with a general statement, one can state that in a language a sentence has the subject in first position, the predicate in second position, and the object in third position, i.e. the functions are indicated by the relation of the symbols in an expression and by their relation to a variable to which they belong. Chomsky has discussed this point thoroughly. (1965: 74ff.).

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