Proceedings of the Sixth Conference on
African Linguistics. OSU WPL 20.161-183 (1975)

The Study of Word Order in African Languages*

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1. Introduction

Probably the first systematic treatment of word order in African languages was that of Wilhelm Schmidt (1926) who conducted a comparative survey on certain grammatical phenomena. Joseph Greenberg summarizes Schmidt's findings thus: "Prepositions go with nominative-genitive order and postpositions with the reverse order. The nominative-genitive order tends to appear with verb before nominal object and genitive-nominative with object-verb. ...Further, nominative-genitive is associated with noun-adjective and genitive-nominative with adjective-noun." (Greenberg 1963:83).

But the comparative study of word order in African languages started much earlier, dating back to the 19th century. Unfortunately, it was allocated to genetic, rather than to typological linguistics. Many of the shortcomings of early comparative linguistics in Africa can be ascribed to a confusion of genetic and typological phenomena, and word order has been one of the most frequently used typological criteria.

In his noteworthy classification of African languages, Richard Lepsius (1880) distinguished two original language families, namely Bantu and "Hamitic". These families, he claimed, differ in twelve main points, six of which relate to the order of meaningful units (1880:XX-XXXII).

The work of Lepsius has had a strong impact on subsequent generations of Africanists. Most scholars who have come out with studies in language classification have used word order in order to determine genetic groupings. Carl Meinhof noted that the genitive precedes its governing noun in the "Sudanic" family of languages whereas it usually follows in "Hamitic". "Hamitic" languages which, nevertheless, have the opposite order are considered mixed languages (Meinhof 1910:93-94). Johannes Lukas, too, mentions the position of the genitive after its governing noun as one of the definitional criteria of "Hamitic" languages (1938:234).

Diedrich Westermann distinguished two basic types of African languages depending on the order of nominative and genitive. According to him, Bushman, Hottentot, and predominantly, "Sudanic" place the genitive in front of the governing noun while Bantu and "Hamitic" have the reverse order. Within the "Sudanic" family he finds a sub-class of languages in which the object precedes the verb. This sub-class, which includes Songhai, Mande, Ijaw, Kanuri, Fur, Nubian, Kunama, and Barea, is said to reflect an older stage of word order (Westermann 1949:14). The *Handbook of African Languages* series offers a wealth of data on word order phenomena but does not attempt

a systematic treatment of it. The order of meaningful units is used as one of the criteria in language classification. Thus, the fact that "Nilo-Hamitic" has verb-subject-object order is part of the evidence adduced to separate "Nilo-Hamitic" from "Nilotic" (Tucker and Bryan 1957:149-150), and one of the main criteria in distinguishing between Hottentot-Sandawe and Bushman-Hadza within Khoisan is again the order of sentence constituents which is said to be subject-object-verb in Hottentot but subject-verb-object in Bushman (Westphal 1956:166-167).

In his survey of dependency-word order structures among the languages of the world, Lucien Tesnière (1959:22-33) also includes African language groups. Tesnière's typology rests on the distinction centrifugal/centripetal. Centrifugal languages place the dependent element behind the head, whereas centripetal languages have the opposite order. The African languages, Tesnière concludes, are centrifugal, with the exception of South-African Bushman and Hottentot, which are said to be centripetal. In spite of its theoretical significance, Tesnière's work suffers from over-simplification which is due to his relying on insufficient second-hand material on African languages.

More recently, Maurice Houis (1970) has attempted a strictly typological classification of African languages. Houis correlates phonological and morphological features with word order and distinguishes two main types: one that has nominative-genitive, noun-adjective order, prepositions, as well as both closed and open syllables, complex word structure, rich morphology, etc., but lacks a phonemic contrast between oral and nasal vowels. This type is found in West Atlantic languages like Fulani, Temne, Diola, Wolof, Serer, Konyagi and Bassari, in Hausa, Bantu languages, as well as in Nilotic languages like Acholi and Kalenjin. The second type has genitive-nominative order, postpositions, only open syllables, simple word structure, a poor morphology but a productive pattern of nominal compounding, as well as distinct nasal vowels. The languages of the Mande, Gur and Kwa groups of the Niger Congo family are said to belong to this type.

The following year, Houis (1971) published a revised version of this typology. The criteria used remain basically the same but the number of types is now increased to five.

Earlier, Joseph Greenberg (1963) had presented a paper entitled "Some universals of grammar with particular reference to the order of meaningful elements", which marked a new era in the study of word order. Whereas Houis considers mainly the order of the noun phrase, Greenberg takes the sentence constituents as the basis of typological comparisons. He distinguishes three common types of languages depending on whether the verb stands before (type I), between (II), or after (III) the subject and object. Greenberg's world-wide sample of 30 languages includes seven African languages which are Berber, Fulani, Maasai, Nubian, Songhai, Swahili, and Yoruba.

Greenberg's article appears to have had a much greater impact in the field of language typology than in that of language universals. His classification has been widely accepted, and some linguists would go so far as to assume that it reflects an inherent principle

of human language in the same way as 19th century linguists claimed for the distinction between isolating, agglutinational and inflectional languages in the area of morphological typology.

Some linguists argue that Greenberg's classification can be reduced to two types. According to James McCawley, for example, "...there are basically only two word-order types, verb-initial and verb-final; other surface word order types arise from one or the other of these through transformations" (McCawley 1970:298). He considers the order subject-verb-object of English as superficial and claims that it arises by a transformation from an underlying constituent structure in which clauses begin with verbs. Winfred Lehmann maintains that the relative order of the verb and object is fundamental in establishing other orders of syntactic arrangement, and he therefore distinguishes two main types depending on whether the object follows ("VO languages") or precedes ("OV languages") the verb. VO languages are likely to use prepositions and to place the adjective behind the noun, whereas OV languages are likely to use postpositions and to have adjective-noun order. French, Spanish and Bantu are said to be consistent VO languages; Turkish, Japanese being examples of consistent OV languages (Lehmann 1972:267-268).

Other scholars again have increased the number of types to four. Emmon Bach, for example, adds another type which he calls "free word-order languages" (1970:9). Theo Vennemann distinguishes a fourth type which he refers to as "TVX". Unlike SVO (type II) languages, TVX languages do not only place the subject before the verb--other topical elements may as well precede the finite verb. German is given as an example of a TVX language (Vennemann 1973). L. Dezsö (1970:552) adds a fourth type (VOS) which has basic object-subject order and subject-verb-object as a variant order. Malgash is given as an example of such languages. John Ross (1970) has demonstrated that there exists some significant correlation between Greenberg's types and certain syntactic phenomena; the gapping of SVO languages (if there exists such a pattern[1]) is always to the right whereas SOV languages either gap to the right (= Forward Gapping) and to the left (= Backward Gapping), or only to the left. The so-called "free-word-order languages" like Latin and Russian are said to have no restrictions in gapping patterns.

The relevance of word order typology has been demonstrated especially in diachronic linguistics. Winfred Lehmann (1971:23) has come out with a number of conclusions concerning syntactic developments in Indo-European languages. Li and Thompson (1973) have given an interesting account of typological changes in Chinese resulting from a re-analysis of verbs as prepositions and an interrelated change from serializing to non-serializing verb constructions. Talmy Givón (1974) attempts to prove that Proto-Niger-Congo was an SOV language although the vast majority of the 500-odd Niger-Congo languages spoken today are SVO. Heine (1975) has shown that word order typology is particularly relevant to areal (Sprachbund) linguistics.

In spite of the remarkable progress that has been made in the analysis of word order since 1963, there are some fundamental questions that have not yet been looked into satisfactorily, if

at all. For example, what are the guidelines for choosing criteria when one wants to group languages to types? Different criteria have been proposed each leading to different typologies, but usually no explanation is given to justify the choice made.

The discussion that has taken place concerning the position of Amharic, the national language of Ethiopia, reveals another problem of word order typology. Amharic, like all other Ethiopian Semitic languages, places the verb at the end of the sentence and Greenberg therefore classifies it as SOV (type III). Emmon Bach (1970), on the other hand, claims that Amharic is only superficially SOV, its underlying constituent order being VSO. Grover Hudson (1972:128) again comes to the conclusion that a grammar which posits an SOV deep structure for Amharic is superior by the criterion of naturalness. The problem underlying the Amharic controversy is partly due to differences in the theoretical frameworks used by the various authors. But, more importantly, it seems to be rooted in the fact that the relevance of the types distinguished by Greenberg and others (including ourselves) has been misunderstood by some scholars. Greenberg's SOV type, for example, includes a wide range of languages, some of which, like Iraqw and Galla in Eastern Africa, have more features in common with SVO than with other SOV languages. Amharic, too, differs remarkably from other SOV languages like Sidamo, Kxoe, or Japanese, which one is tempted to call "rigid" or "consistent" SOV languages. One has always to keep in mind that any attempt at devising typologies remains arbitrary to some extent, and that one is equally justified to arrange languages along a continuum rather than grouping them into types.

Another problem concerns the relationship between word order and grammatical models. Arthur Schwartz (1972) for example suggests that word order typology may force us to reconsider the basis of constituent structure. In comparing accusative, accusative-ergative, and ergative language systems, he concludes that the basic types distinguished by Greenberg (VSO, SVO, and SOV) differ in their constituent structure in that SVO systems have a VP constituent (= V + NP) whereas VSO and SOV systems have not. The various types are said to differ in their degree of markedness: VSO and SOV are clearly marked systems, whereas SVO is not, or, at least, less marked.

The purpose of the present notes is to compare patterns of word order occurring in African langauges with a view to study the interrelationship between the various patterns, and to devise a typology of African languages. Our sample includes over 300 languages from all parts of the continent. The linguistic data are mostly taken from published works. In some 25 cases it was possible to use our own field notes.

The choice of parameters is largely dictated by the availability of comparative data from as many languages as possible. Preferably, criteria are being used which have proved useful both in connection with typological and with implicational statements. Altogether 33 parameters relating to various grammatical phenomena have been selected.[2]

Applying these criteria to African or any other languages brings about a number of problems some of which are briefly discussed below.

The first problem concerns the universal validity of notions such as 'subject', 'preposition', 'noun', or 'adverb'. For example, there are said to be African languages which have no genuine prepositions or postpositions, which lack adjectives as a morphological category, or which do not distinguish between verbs and nouns. It probably would be an almost impossible task to find adequate cross-linguistic definitions for the morphological and syntactic classes mentioned, applying to all African languages. In spite of this problem, which we do not want to underestimate, relatively few difficulties are encountered when trying to equate such categories in different languages if one assumes that there is some underlying structure whose relevance can be demonstrated by means of both semantic and syntactic tests.

Another problem relates to the significance that the linear arrangement of meaningful elements may have. Our comparisons will result in statements like "Word order A in one language corresponds to order B in another". But these word orders may be of quite a different nature. Usually, three kinds of word order are distinguished: invariable, freely variable, and contrastively variable order. Thus, it will happen that we compare the invariable order of one language with the freely or contrastively variable order of another. Although we do not know exactly how far this may affect our results it seems that this problem is not of crucial importance to our analysis as we restrict our comparisons to what Greenberg calls "basic" or "dominant" order (1963:60 ff.).

The definition of "basic word order" poses perhaps the biggest problem that we have to face. We may say that of all forms of linear arrangement, basic order is the least marked: it has usually the highest text frequency, it tends to be used in positions of neutralization and to have the smallest amount of morphological complexity. Although in the majority of cases no problems are encountered as to which of the alternatives occurring has to be considered basic there remain a number of cases where no clear answer seems possible. Such cases are particularly frequent in languages which rely heavily on a communicatively determined, rather than on the grammatically conditioned, principle of linear arrangement.

A clear-cut decision as to which of the alternatives occurring is to be considered basic does not seem possible for example in a number of African languages which have variable word order in accordance with the aspectual distinction [±definite]. Tucker's (1940) description of the situation in Moru-Madi of Central Sudanic is, *mutatis mutandis*, characteristic of a larger class of languages:

> "The most important feature in Moru-Madi verb conjugation is Aspect. There are two aspects, and the position of the verb forms in the word order of the sentence is indicative of the aspect of the action described by the verb. Thus:
>
> 1. Word order = Subject + verb + object: the verb action is complete, momentary, 'perfect', DEFINITE.

2. Word order = Subject + object + verb: the verb action is incomplete, progressive, 'imperfect', INDEFINITE." (Tucker 1940:180)

That the aspect is responsible for the respective word order can be seen from the following example taken from Lendu, another Central Sudanic language (Tucker 1940:402):

Indefinite	má 'ou 'á (I chicken eat)	'I am eating a chicken'
Definite	má 'a 'oú	'I have eaten a chicken'

A similar distinction is found in Dahalo ("Sanye"), a Southern Cushitic language of the Kenya coast. This language has S-O-V order in the Present-Future and S-V-O in the Past-Perfect.

2. Dominance

A comparison of word order in different languages suggests that there exists some hierarchical relationship between alternative orders. This relationship can, with more or less justification, be expressed by means of dichotomies such as dominant/recessive, unmarked/marked, basic/derived, and perhaps even universal/particular. For the present discussion, the terms 'dominant' and 'recessive', as introduced by Greenberg[3] (1963:76), are chosen.[4]

Word order relationships between languages will therefore be described in terms of statements like "The morpheme or word order X-Y in language A is dominant over the opposite order Y-X in language B".

It is not always possible to decide unambiguously whether a given word order is dominant or recessive, and in some cases the dichotomy even appears to be irrelevant altogether. In most cases, however, there are no difficulties encountered in establishing this distinction. The main criteria are:

(1) Statistical occurrence. Dominant order usually, although not necessarily, turns out to be statistically clearly predominant. Looking at the frequency of occurrence of the basic word order phenomena, we find that among the 300-odd African languages of our sample:

- 95% have the order S-V (subject-verb) in 'intransitive' sentences;
- 71% have S-V-O (subject-verb-object), as opposed to 5% having V-S-O, and 24% having S-O-V;
- 63% have Oi-Od (indirect object-direct object);
- 87% have S-V-AP (AP = adverbial phrase), as opposed to 5% having V-S-AP, and 8% having S-AP-V;
- 62% have nominative-genitive;
- 59% use prepositions rather than postpositions;
- 88% have noun-adjective;
- 91% have noun-numeral;
- 91% have noun-indefinite adjective;
- 82% have noun-interrogative adjective;
- 70% have noun-possessive adjective;

85% have noun-demonstrative adjective;
65% have adjective-demonstrative;
96% have possessive-adjective;
96% have adjective-adverb;
93% have verb-adverb;
94% have subject pronoun-verb;
63% have verb-object pronoun;
83% have tense marker-verb;
68% have negative-verb;
96% have subject pronoun-object pronoun;
93% have subject pronoun-tense marker;
76% have subject pronoun-negative;
92% have tense marker-object pronoun.

Given any unknown African language one can therefore predict with a certain degree of probability that in this language the subject precedes the verb (and the object), that nominal qualifiers like adjectives, numerals or demonstratives follow the noun, and so on.

(2) Predicative factors. While Greenberg (1963:76) questions the importance of frequency of occurrence, he considers what he calls "the logical factor of a zero in the tetrachoric table" as a basic prerequisite for a definition of the notion of dominance. There are certain word orders which seem to be mutually exclusive, whereas other orders are always found to co-occur within a given language. The general rule is that recessive word order only occurs under specified conditions, while dominant order is not subject to such limitations.

Note, however, that Greenberg's sample of languages is relatively small. This is significant in so far as some of the "zeroes" in his tables will disappear as soon as a larger sample is chosen, and some predicative statements of the type "a language having word order X does not have word order Y" may turn out to have to be replaced by quantitative statements of the type "there is a low probability that a language having word order X also has Y".[5]

Greenberg's findings can be summarized thus: the dominant type SVO occurs without limitations whereas the recessive types VSO and SOV show limitations of the following kind: (a) VSO does neither occur with postpositions nor with adjective-noun order; SOV, on the other hand, is said to be absent in prepositional languages (Table 1). (b) In VSO languages, the auxiliary does not follow the verb, whereas in SOV languages it does not precede the verb (Table 4). (c) In comparisons expressing superiority, VSO languages have the order adjective-marker-standard, whereas SOV languages have the opposite order. In SVO languages, either or both orders may occur, although adjective-marker-standard seems to be predominant (Table 8). (d) In constructions of nominal apposition, the order Proper Noun-Common Noun does not occur in VSO languages, whereas Common Noun-Proper Noun is not found in SOV languages (Table 9). (e) Exclusively prefixing languages are of the SVO type only. Furthermore, there are no exclusively suffixing VSO languages (Table 11).

Other findings of Greenberg relate to the order of nouns and their dependent adjectives: the recessive order adjective-noun is subject to a number of limitations of occurrence which the dominant order noun-adjective is not, e.g.: (f) The order noun-demonstrative is not found if the adjective precedes the noun, and the same applies to noun-numeral. Such restrictions do not exist with the dominant order noun-adjective (Table 6). (g) Adjectival qualifiers precede the adjective in adjective-noun languages. In languages with basic noun-adjective order, these qualifiers may precede, follow, or both (Table 7).

(3) Other grammatical phenomena. It seems that evidence for establishing the distinction dominant/recessive can also be found outside word order relations. Our analysis of African languages suggests that the recessive types VSO and SOV, when correlated with certain grammatical phenomena, show some limitations in occurrence not shared by the dominant SVO type. For example, languages lacking productive verbal derivative affixes for causative, intransitive and passive belong to Greenberg's SVO type throughout. No VSO or SOV language has been found which does not have at least one of these morphemes. Those languages of our sample which lack these three derivative morphemes have the following orders, all of which are dominant:

S-V-AP	verb-adverb
Noun-numeral	subject pronoun-verb
adjective-demonstrative	subject pronoun-object pronoun
possessive-adjective	subject pronoun-tense marker
adjective-adverb	subject pronoun-negative

A possible counter-example is provided by Arthur Schwartz (1972: 220) in his comparative analysis of verb phrases. Schwartz discovered that true ergative systems are found in both VSO (Chinook, Niuean) and in SOV languages (Basque, Dyirbal), but not in SVO languages. Thus, the dominant type shows limitations which the recessive types do not. According to the explanation given by Schwartz, however, it is exactly the recessive ("marked") nature of VSO and SOV languages that enables the development of ergative structures, due to the detached status of the predicate in these languages. This development is blocked in SVO languages for which Schwartz claims a different constituent structure with a strict predicate-complement relation[6] (1972:230-234).

(4) Non-basic variants. A number of languages allow for alternative orders of the sentence constituents subject, verb and object in accordance with thematic, modal, or other distinctions. Greenberg (1963:63; Universal 6) states that languages with basic V-S-O order have S-V-O as an alternative or as the only basic alternative. Generalizations of this kind do not seem possible for the other two types; yet, the following holds for quite a number of languages: consistent SOV languages do not have V-S-O as an alternative,[7] nor do VSO languages have S-O-V. Languages of the dominant SVO type, on the other hand, are not subject to this limitation.

Another kind of generalization relates to the order of the noun and its qualifying adjective and has been described by Greenberg (1963:68; Universal 19) thus:

> "When the general rule is that the descriptive adjective follows, there may be a minority of adjectives which usually precede, but when the general rule is that descriptive adjectives precede, there are no exceptions."

Here again, the recessive order (adjective-noun) shows limitations in that it does not tolerate an alternative order, whereas the dominant order (noun-adjective) is free from such limitations.[8]

In the previous section, the terms 'dominant' and 'recessive' have been used primarily with reference to individual features of languages. If a language can be said to be of the 'dominant type' then it is one which has no or hardly any recessive word order.[9] Such a language must possess the following patterns of basic word order: (a) the subject precedes the verb; both indirect and direct object follow the verb, and so do adverbs and adverbial phrases; (b) prepositions, rather than postpositions, are used; (c) nominal qualifiers or modifiers follow the noun. The constituents involved are: (i) possessives, both nominal (genitive) and pronominal; (ii) determiners such as demonstratives and definite/indefinite articles; (iii) adjectival constituents, including numerals as well as indefinite and interrogative adjectives; (d) the order of nominal qualifiers is possessive adjective-adjective-demonstrative; (e) adjectival qualifiers (e.g. "very") follow the adjective; (f) within the verbal group, only the object pronoun follows the verb; subject pronoun, tense/aspect markers, and the negative particle precede the verb. The order is

$$\text{subject pronoun} - \left\{ \begin{matrix} \text{tense/aspect} \\ \text{negative} \end{matrix} \right\} - \text{verb} - \begin{matrix} \text{object} \\ \text{pronoun} \end{matrix}$$

(g) auxiliary verbs precede the main verb; (h) relative clauses follow the noun on which they depend; the relative pronoun, if there is any, heads the relative clause; (i) if there exists a gapping pattern, then it is only Forward gapping.

3. Typology

The area where word order studies have made a particular impact on linguistics is typology. Since Greenberg's classification into VSO, SVO and SOV languages, word order typology has become a much discussed subject in comparative linguistics.

A number of scholars seem to assume that typology on the basis of word order differences is founded on some easily detectable language-inherent principle--a view that reminds one of the naïveness of 19th century morphological typologists. Our survey of African languages suggests that word order typology is perhaps as complicated a field as morphological typology has turned out to be. The only thing that seems obvious at present is that languages form a continuum whose end points can be determined

theoretically--say, a "consistent" or "strict" VSO language on one side and a "consistent/strict/rigid/" SOV language on the other. Any attempt at segmenting this continuum is to some extent arbitrary.

If, nevertheless, an effort is made to classify African languages then it is done mainly for descriptive and comparative convenience and is based on the observation that some word orders allow for more generalizations than others. Irrespective of how arbitrary the following typology may be, it is held that there exists some hierarchical realtionship linking the various languages and types. This relationship is based on the concept of dominance.

Type A. A rigid type A language would consist of dominant features only, i.e. could be described as having the following word order patterns: (1) the subject precedes the verb; (2) the object follows the verb and is itself followed by adverbial phrases; (3) prepositions and nominative-genitive order are used; (4) nominal qualifiers like adjective, numeral, possessive and demonstrative follow the noun; (5) the possessive adjective precedes the other adjectives; (6) the adverb follows the verb and the adjective; (7) the subject pronoun precedes all other constituents of the verbal group; (8) tense/aspect markers precede the verb; (9) the object pronoun follows the verb; (10) if there is a Gapping pattern then it is Forward gapping only.

A substantial number of African languages will be allocated to type A although they show one or the other deviation from the above patterns. In order to trace a clear-cut boundary between A and the other language types to be discussed below, a negative specification is necessary: the basic word order of type A languages is such that: (a) the verb does not precede the subject; (b) the adverbial phrase does not precede the verb; (c) genitive-nominative order and postpositions do not both occur.

Type A languages are found in all African language families. North African Afro-Asiatic A languages are Egyptian Colloquial Arabic, Shuwa Arabic of Bornu, Coptic. Most, if not all Chadic languages are of type A. The only Cushitic languages of this type are Yaaku (Mogogodo) and Mbugu (Ma'a).

Kordofanian A languages are Koalib, Talodi, Krongo, Katcha and Katla. A is also the clearly predominant type within Niger-Congo, although it does neither occur in the Mande nor in the Gur branch. More or less all West Atlantic languages and most Eastern Kwa languages are A. In our sample, there are only two Benue-Congo languages which are not A, namely Reshe, a Plateau language, and Nen (Tunen) of the Bantu group. Most, if not all, Adamawa-Eastern languages also belong to type A.

There are relatively few Nilo-Saharan type A languages. Gule, Central Sudanic languages like Bongo, Sara, and Bagirmi, Eastern Sudanic languages like Tabi (Ingassana), Temein, the whole of Western Nilotic, Bari of Eastern Nilotic and Dadog of Southern Nilogic belong here.

Khoisan type A languages are /xam-ka-!'e, "Eastern Bushman" and Batwa (of Lake Chrissie).

Type B. Languages of this type place the genitive before the governing noun and use postpositions rather than prepositions. The same orders are found in many type D languages (see below), where they are, however, a concomitant rather than a definitional feature. The decisive difference between the two types is that in D languages the verb follows whereas in B languages it precedes the adverbial phrase. A concomitant feature

of B languages is that the possessive adjective usually precedes the noun.

In addition, B languages have the following characteristics, all of which are dominant: (1) nominal qualifiers like adjective and numeral follow the noun; (2) the adjective usually precedes the demonstrative and the numeral; (3) the adverb follows the adjective and usually also the verb; (4) the subject pronoun precedes the tense/aspect markers, the verb, and the object pronoun.

Grammatical characteristics of type B languages are: (5) a "genuine" passive construction does not exist; (6) there is no grammatical category of dual; (7) no B language has a noun gender system based on the distinction masculine/feminine.

Apart from one sub-type (MANDING: see below), B languages have S-V-O as their basic order. Frequently, however, there is one non-basic alternative which has S-O-V.

More or less all Western and Central Kwa languages of Niger-Congo, all Togo Remnant, and all Gur (Voltaic) languages are B. This type is also found in all languages of the Mande branch, in Reshe of Plateau, Nen of Bantu, and in Tumale and Tagoi of Kordofanian. Within Nilo-Saharan, B languages are Mangbetu, Balese, and Mamvu of Central Sudanic, as well as all languages/dialects of the Songhai cluster. Khoisan languages of type B are !Xu, Dzu/'oasi, ǂunkwe, and /Xam.

The Central Sudanic languages Moru, Avukaya, Keliko, Logo, Madi, Lendu, and Lugbara are marginally type B.

Type C. Languages of type C are those that have verb-subject as their basic order. In addition, these languages have the following characteristics: (1) other constituents like object and adverbial phrase likewise follow the verb; (2) there is at least one alternative to the basic order V-S-O which is S-V-O (cf. Greenberg 1963: 63); (3) if a gapping pattern exists then it is only Forward gapping; (4) nominative-genitive order and prepositions are used; (5) adjectives, numerals, and possessives usually follow their head noun; (6) possessive adjectives precede the other adjectives; (7) the verb precedes the adverb although there is usually a non-basic alternative to place the adverb in sentence-initial position; (8) auxiliary verbs precede the main verb; (9) the negative marker precedes the subject pronoun and the verb; (10) the object pronoun does not precede the tense/aspect markers or the verb.

Furthermore, African type C languages seem to have some common grammatical features: (11) there is at least one verbal derivative, expressing either causative or intransitive; (12) number is distinguished obligatorily with nouns; (13) if there is a noun gender system then it is based on the distinction masculine/feminine.

African type C languages are largely confined to Northeastern Africa and to the Eastern Sudanic group of Nilo-Saharan. Within this group, it occurs in Diding'a-Murle, in all Kuliak languages (Ik, Tepes, Nyang'i), in Southern Nilotic except Dadog, and in Eastern Nilotic except Bari. Outside the Eastern Sudanic group, the only African type C language so far found is Hadzapi, a Tanzanian Khoisan language, but the extinct Middle Egyptian also belonged to this type.

The Berber cluster of North Africa has been classified by Greenberg as VSO, i.e. as satisfying the definition of a type C

language. This view, which seems to be shared by André Basset, is not quite corroborated by our own evidence, mainly because of the following reasons: (a) an analysis of texts shows that the order subject-verb is statistically clearly predominant, (b) the verb can be placed sentence-initially, between subject and object, and also sentence-finally--a feature that is typical of some type A languages but uncommon in C, (c) there are some word orders in Berber that are rather divergent from the patterns found in C languages, e.g. the order numeral-noun.

Berber is therefore classified basically as type A, being located near the boundary of A and C.

Type D. Type D languages are defined as placing the adverbial phrase before the verb. This implies that the nominal object likewise precedes the verb.

In addition, type D languages usually have the following features: (1) the auxiliary follows the main verb; (2) words marking sentence questions precede the verb; (3) there is either an optional or an obligatory Backward gapping pattern; (4) if there are nominal gender affixes then they are suffixed to the noun.

In addition, type D languages are characterized by a tendency to replace all dominant word order by recessive order.

Type D is particularly widespread in Northeastern Africa. All Ethiopian Semitic languages and most Cushitic and Omotic languages are D. Nilo-Saharan D languages are Kanuri, Kanembu, Tubu, Sungor, Mararit, Maba, Fur, all Nubian languages, Kunama, Barea, Nyimang, and others. A Kordofanian D language is Tegali. Niger-Congo languages of type D are Sigi, a secret language of the Dogon, and the languages of the Ijo (Ijaw) cluster. All Central Khoisan languages and Sandawe of Tanzania equally belong to D.

Iraqw, some languages of the Kru group (Newole, Koyo), and Lafofa and Masakin of Kordofainan seem to be marginally D.

The four basic types distinguished above can be sub-classified in a number of ways. In the following, we will group those languages together which show some significant deviations from the basic type, i.e. languages which possess certain recessive features not shared by other languages of that type.

Sub-types of A: BANDA, BANTU and DUALA

BANDA type languages differ from other A languages essentially in placing the adjective before the noun.[10] Languages of this type are mainly found in a geographically definable area north of River Congo within the Adamawa-Eastern branch of Niger-Congo. They are Mbaka-Limba, Mbum, languages of the Gbaya, Ngbandi, Banda and Zande groups, Ndogo, Bai, Bviri, Tagbu and Sere. Bamileke and Efik are Benue-Congo languages of the BANDA type which also includes Hausa.

The main characteristic of BANTU type languages is the position of the bound object pronoun, which precedes the verb. Most, but not all, Bantu languages belong to this type. The boundary between the languages of this type and the other Bantu languages coincides roughly with the genetic boundary between Branch 11 on the one hand and Branches 1-10 on the other (Heine 1973), i.e. almost all the 300-odd Branch 11 languages belong to the BANTU type. Languages which are not of this type are mainly found in the northwestern

Bantu area (Cameroon in particular). In addition, all Bantu pidgins are excluded. Non-Bantu languages of this type are Yaaku (Mogogodo) and Mbugu (Ma'a), two Cushitic languages which are spoken in the vicinity of Bantu languages, as well as Dinka, a Western Nilotic language, and Koalib, a Kordofanian language.

The prominent feature of the DUALA type is the position of the demonstrative adjective, which precedes the noun. Languages of this type are found among some northwestern Bantu languages, e.g. Duala, Bankon (Bo), Nyang (Kenyang), and Nkosi (Koose), Kulere of Chadic, Bari of Eastern Nilotic, Batwa, a Southern Khoisan language of Lake Chrissie, as well as Kukuruku, a Nigerian Kwa language, and Coptic.

Sub-types of B: MANDING and MORU

The MANDING sub-type may be called the "rigid type B". Languages of this type place both the nominal and the pronominal object before the verb. Furthermore, the possessive adjective almost always, and the demonstrative frequently precded the governing noun, and the direct object is likely to precede the indirect object.

Some authors have suggested to allocate MANDING type languages to type D ("SOV"). According to our analysis, this is not justified, as type D languages place the adverbial phrase before the verb and differ fundamentally in their verbal syntax. All languages of the Mande branch of Niger-Congo belong to the MANDING type. In addition, there are some Gur languages, like Senufo, Bariba and Seme, Tumale and Tagoi of Kordofanian, as well as Nen (Tunen) of Bantu, and the Dyerma dialect of Songhai.

Of all B languages, MORU type languages are nearest to A. They differ from other B languages mainly in having both S-V-O and S-O-V as their basic order. Frequently, MORU type languages have both genitive-nominative and nominative-genitive order. Languages of this type are confined to a small area north of Lake Mobutu (Albert) in the watershed region between rivers Uele and Nile. They include Moru, Avukaya, Keliko, Logo, Madi, Lendu, and Lugbara, all of which belong to the Central Sudanic group of Nilo-Saharan.

Sub-type of C: MAASAI

This type differs from all other African type C languages in placing the demonstrative adjective before the noun. The only member of this type are the lects of the Maa cluster in East Africa, i.e. Samburu, Njemps and Maasai.

Sub-types of D: GALLA, KAFFA, AMHARIC

Languages of the GALLA type can be called "weak type D" languages. Apart from those characteristics which define them as D, there are very few recessive word orders. Whereas the use of post-positions is predominant in these languages, the genitive may precede or follow its governing noun. Nominal qualifiers like adjective, numeral, demonstrative and possessive usually follow the noun. If there are exceptions then they relate to single qualifiers, e.g. the numeral in Somali or the demonstrative in Nubian. Verb-tense marker is the only order or one of the basic orders and accordingly, the object pronoun usually precedes the tense marker.

A number of Nilo-Saharan languages are of the GALLA type, such as Kanuri, Tubu, Mararit, Sungor, Fur, Nyimang, Nubian, Kunama, and Barea, as well as some Cushitic languages like Somali and Galla.

The KAFFA sub-type may be called the "rigid" type D. Its characteristics are: nominal qualifiers precede the noun; postpositions rather than prepositions are used and the genitive precedes the nominative; infinitive phrases precede the governing verb (e.g. "he to come intends" = "he intends to come"); tense marker and negative particle usually follow the verb; the relative clause frequently precedes its governing noun, and Backward gapping is likely to be the only gapping pattern occurring.

Languages of this type are some Ijo dialects (e.g. Kolokuma), the Central Khoisan languages (Kxoe, Nama, Korana etc.), Sandawe, Gurage, an Ethiopian Semitic language, Cushitic languages like Burji, Sidamo, Kambatta, Hadya and Quemant, or Omotic languages like Kaffa, Ometo or Janjero.

The AMHARIC type is intermediate between the GALLA and the KAFFA types in that it contains more recessive features than the former but fewer than the latter. Main features of this type are: the numeral precedes but the possessive adjective follows the noun; the use of postpositions is predominant although prepositions may occur.

AMHARIC type languages are Bedauye, a Northern Cushitic language, as well as most Ethiopic Semitic languages like Ge'ez, Tigre, Tigrinya, Harari, and Amharic.

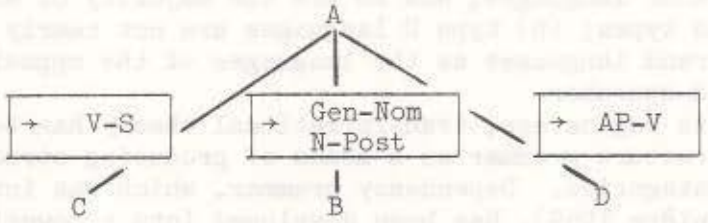
4. Dominance and dependency

When starting our survey, we had hoped to be able to adopt the Greenbergian word order classification which has come to be so widely accepted. But this classification turns out to be superficial in some cases in that, on the one hand, it separates typologically similar languages, and even dialects of the same language, but on the other hand, lumps together rather divergent structures. For example, there hardly seems to be any justification to allocate the Mande languages, which have S-O-V order, and the Gur, Togo Remnant, and Western Kwa languages, which have S-V-O order, to different basic types. The word order patterns of Mande again have little in common with those of S-O-V language groups like Omotic or Central Khoisan.

Our typology, however, does not seem to be very much different from that of Greenberg (1963), the main divergence lying in the choice of slightly different criteria which allow for more generalizations. If, nevertheless, there is a fundamental divergence then it concerns the concept of dominance and the relationship between the various types. The four basic types are linked to each other in a systematic way: they are all part of a hierarchical grouping in which one (type A) is at the top and the others are derived from it by means of a rule of the form

dominant → recessive

Thus, while the relationship between A on the one hand and B, C, and D on the other is characterized by a difference of one rule only, all other types are separated from each other by two rules, one rule deleting the recessive feature(s) and a second rule introducing a different recessive feature. The following diagram makes this clear:



In order to arrive from type C at D one needs the rules

(1) Delete S-V → V-S
(2) V-AP → AP-V

whereas only one rule

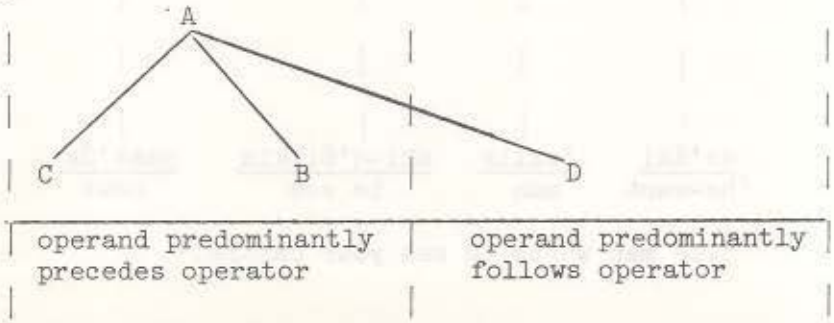
Delete V-AP → AP-V

is required in order to reduce D to A.

A number of linguistic, psychological, logical and other distinctions have been introduced to account for and to explain certain harmonic relations between various word orders. The most common of these distinctions, which are to a large extent used synonymously, are:

Determined	- Determiner
Specified	- Specifier
Modified	- Modifier
Topic	- Comment
Argument	- Function
Operand	- Operator

The way these terms are used linguistically usually lacks precision. Theo Vennemann (1973) has attempted a clear-cut linguistic definition based on the criterion of endocentricity: it is the operand that determines the syntactic category of the construction.[11] Using the distinction operand/operator, one can arrange language types thus:



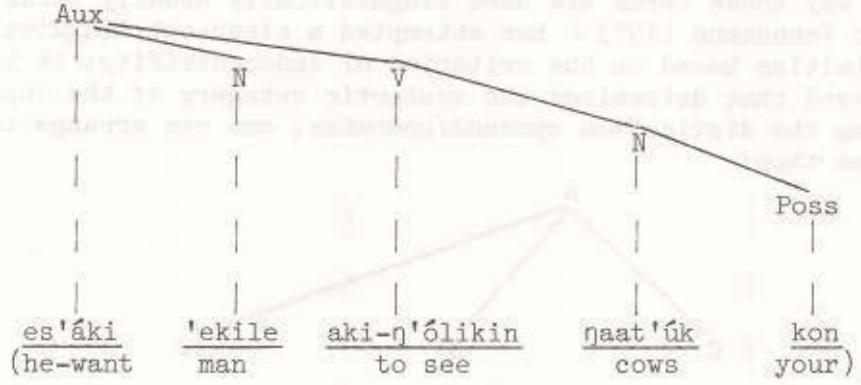
Type C languages are to an extreme degree operand-operator languages whereas type D languages are predominantly operator-operand languages (see Vennemann 1973: 12). There are two significant assymetries in the above diagram which seem to be due to the idiosyncracies of dominant language structure: (a) African languages of the dominant type A are predominantly operand-operator languages, and so are the majority of African languages and types; (b) type D languages are not nearly as much operator-operand languages as the languages of the opposite type C are operand-operator.

Since its beginnings, transformational theory has been based on phrase structure grammar as a means of producing structured strings of categories. Dependency grammar, which was introduced in 1959 (Tesnière 1959), has been developed into a powerful alternative model. One of its main advantages over constituent structure is that it distinguishes between governing (= Head) and dependent elements, thus supplying information not available in phrase-structure grammar. Although an adequate definition of 'Head' is still wanting[12] there seems to be general agreement about certain dependency relations, e.g. that: (1) the verb governs nouns, adverbs, and morphemes expressing negation, tense and aspect, (2) nouns are governed by prepositions/postpositions, (3) the nominative governs the genitive, (4) the noun governs its qualifiers such as relative clauses, adjectives, indefinites, numerals, demonstratives, possessives, as well as case and number markers, (5) lexical items govern non-lexical agreement markers, etc.

It is to be expected that a consistent type C language has the order

Head - Dependent element

so that those elements that top the hierarchy are found to the left, i.e. at the beginning of the sentence while the most dependent elements are found at the end of the sentence. The following sentence from Turkana, an Eastern Nilotic language spoken in Kenya, is characteristic of type C dependency stemmas:

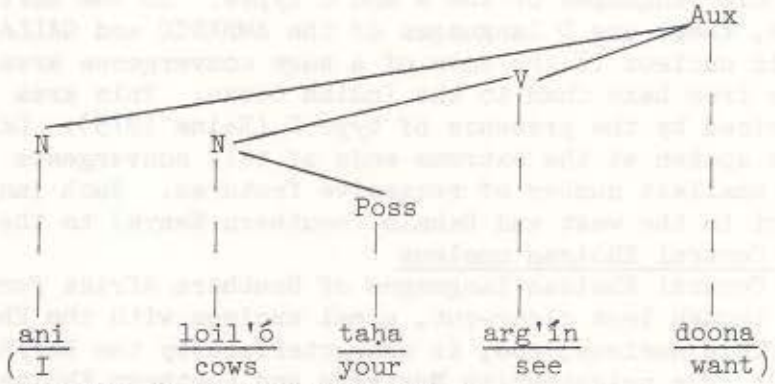


'The man wants to see your cattle.'

In type D languages, again, the order is typically

Dependent element - Head

D languages therefore have the most dependent elements sentence-initially whereas the Head is placed at the end of the sentence. The following sentence from Rendille, an Eastern Cushitic language of the GALLA type, shows the kind of dependency structure that is to be set up for D languages:



'I want to see your cattle.'

Ideally, one would expect that the dependency structure of strict D languages be an exact mirror-image of that of C languages, but this is not the case--at least not in Africa. This is due to the assymetry mentioned above, which seems to be a result of the peculiar structure of dominant word order: dominant structures overwhelmingly exhibit the order Head-Dependent element.

Assuming that there is a one-to-one relationship between word order and dependency, then the question arises whether the comparative study of word order cannot be of help in determining dependency relations. We have claimed above that the Head precedes the Dependent element in type C languages. In strict C languages, on the other hand, the negative particle precedes the tense/aspect markers, and both are followed by the verb. Strict D languages, again, have Dependent element-Head order, and in such languages the verb is followed by tense/aspect markers and both are followed by the negative particle. In the light of this it would seem worth examining the possibility of sentence negation and tense governing verbs rather than the other way around.

5. Areal characteristics

The word order characteristics of African languages cannot only be described in terms of language types. It is almost as important to know in which area a given language is spoken. The proportion of dominant and recessive word order shows some interesting correlations with the geographical distribution of languages. There are linguistic areas in Africa where recessive word order prevails. Languages spoken in the vicinity of such areas are likely to share some of these recessive features. The

farther one moves away from these areas the more the number of recessive features tends to decrease. A linguistic area with a high concentration of recessive word order will be called "areal nucleus". There are four major areal nuclei in Africa: (a) the Omotic, (b) the Central Khoisan, (c) the Mande, and (d) the Dosso-Nikki nucleus.

(a) The Omotic nucleus

It is situated on the southwestern end of the Ethiopian Highlands and is made up of Cushitic languages of the KAFFA type. To the west, there is a sharp boundary separating these languages from Nilotic languages of the A and C types. To the north, east and south, there are D languages of the AMHARIC and GALLA types. The Omotic nucleus is the core of a huge convergence area which stretches from Lake Chad to the Indian Ocean. This area is characterized by the presence of type D (Heine 1975). Languages which are spoken at the extreme ends of this convergence area have the smallest number of recessive features. Such languages are Kanuri in the west and Dahalo (southern Kenya) to the south.

(b) The Central Khoisan nucleus

The Central Khoisan languages of Southern Africa form another, though less clear-cut, areal nucleus with the Khoisan family. This nucleus, too, is characterized by the KAFFA sub-type of D. The neighbouring Northern and Southern Khoisan languages, which belong to types A and B, have a gradually decreasing amount of recessive word order.

(c) The Mande nucleus

In West Africa, there is a vast area of type B languages which stretches from the southern fringes of the Sahara in the north up to the Atlantic coast in the south and includes over one hundred languages. The northern Mande languages of the MANDING type form the nucleus of this area. They have the largest number of recessive features of all West African B languages.

(d) The Dosso-Nikki nucleus

This nucleus, which is situated on both sides of River Niger south of Niamey, includes languages such as Bariba (Borgu), a Gur language, Dyerma, a dialect of Songhai, and Busa of the Mande group. The Dosso-Nikki nucleus consists of MANDING type B languages.

But the areal significance goes even farther than that: as has been shown elsewhere (Heine 1975), language types cover areas which can be re-analyzed as linguistic convergence areas (areal groups).

6. Word order and language families

Although the linear arrangement of meaningful elements belongs to that part of language which has been shown to be less resistant to change than others the data available allow for some tentative reconstructions of word order in various genetic groupings. These reconstructions are based on the geographical distribution of genetically related languages and their respective word order behaviour.

In a detailed documentation, Talmy Givón (1974) attempts to prove that the Niger-Congo family originally had an SOV syntax. This hypothesis is based on the observation that the present-day languages of this family show a number of word order features which are more characteristic of SOV than of any other type. Our own evidence suggest that Proto-Niger-Congo was of type A. This type is clearly predominant in all branches of the family except Mande, Gur, and Western Kwa, which are type B. But the presence of B in these groups is more likely to be due to innovation than to retention, or, to be more precise, to areal rather than to genetic relationship. This is corroborated by the fact that West African B languages form a closed geographical area[13] which cuts across genetic boundaries.

The development of word order in Niger-Congo can be summarized thus: Proto-Niger-Congo probably was a type A language which placed the subject before and the object after the verb, the nominative before the genitive, and used prepositions. All nominal qualifiers, like adjective, numeral, interrogative, possessive and demonstrative, as well as relative clauses, are likely to have been placed after their governing noun. Moreover, the adverb followed the verb and the adverb. The subject pronoun preceded both the verb and the negative particle whereas the object pronoun followed the verb. In addition, we assume that Proto-Niger-Congo had a noun gender system which used nominal gender prefixes, in a similar way as can be found in modern West Atlantic, Togo Remnant or Bantu languages.

At least one significant typological change must have occurred after the first split of Proto-Niger-Congo[14]: in Mande, one of the branches of Niger-Congo, type A was replaced by B. This replacement must have taken place prior to the splitting up of the hypothetical ancestor language of the Mande branch and led especially to the following changes: the object now precedes the verb, the genitive precedes the nominative, the possessive adjective precedes the noun, and postpositions, rather than prepositions, are used. The Gur, Togo Remnant and western Kwa languages are likely to have borrowed type B from Mande; in cases where the contact can be assumed to have been particularly close (Senufo) it was the MANDING sub-type of B that was adopted.

Elsewhere in Niger-Congo, changes in word order structure were rare, occurring only in isolated languages or language groups.[15] For the main branches, like West Atlantic, Benue-Congo, or Adamawa-Eastern, more or less the same patterns can be reconstructed as for Proto-Niger-Congo: S-V-O order, presence of prepositions, nominative-genitive order, nominal qualifiers following the noun and adverbs following the verb, etc.

No conclusive evidence is available on earlier word order structure within the Afro-Asiatic family, although it is most likely that Proto-Afro-Asiatic belonged to type C (= VSO). This type seems to have been prevalent in three of the six Afro-Asiatic branches, i.e. Berber, Ancient Egyptian, and Semitic. Proto-Berber probably had V-S-O, or V-S-O and S-V-O order, used possessive and demonstrative after, but the numeral and the interrogative adjective before the governing noun, and the adverb after the verb.

If Proto-Afro-Asiatic really was type C then the Chadic branch must have undergone a change from C to A. The arrangement of meaningful elements in Chadic is likely to have been the following: the subject preceded and the object followed the verb, the genitive followed its governing noun, and so did all other nominal qualifiers, prepositions were used, the adverb followed the verb, and the verb structure probably was

$$*\text{subject pronoun} - \text{tense} - \text{verb} - \text{object pronoun} - \text{negative}$$

The most drastic change in Afro-Asiatic seems to have occurred in the Omotic branch which developed a D syntax of the KAFFA sub-type. It would seem that the Cushitic languages--as well as a number of Nilo-Saharan languages--borrowed type D from Omotic; neighbouring groups like Sidamo adopted the rigid KAFFA sub-type whereas other Cushitic groups received the weaker AMHARIC and GALLA sub-types. More recently, after the Semitic intrusion from South Arabia into northeastern Africa, the Ethiopian Semitic languages borrowed a type D syntax from Cushitic (Leslau 1945, 1952), both of the AMHARIC (Ge'ez, Harari) and of the KAFFA (Gurage) sub-types.

A reconstruction of word order within the Khoisan family does not seem possible at present. The best guess would be that it was of type B, as the predominant occurrence of postpositions, genitive-nominative order, and the pre-noun position of the possessive adjective suggest. That Proto-Central-Khoisan, on the other hand, was a D language of the KAFFA type can hardly be doubted.

No attempt is made to consider the word order of Nilo-Saharan as its status as a genetic unit does not seem to have been established sufficiently. The reconstruction of word order in the various sub-groups is made difficult by the fact that the Nilo-Saharan-speaking area has apparently experienced a number of convergence processes which resulted in a large variation of word order structures. The case of Nilotic is typical in this respect. Proto-Nilotic probably had S-V-O order, prepositions, nominative-genitive order, nominal qualifiers followed the noun and the adverb followed the verb, the subject pronoun and the negative particle preceded the verb whereas the object pronoun followed. This structure has been largely retained in Western Nilotic while Eastern and Southern Nilotic adopted a type C syntax within the Rift Valley Convergence Area (Heine 1975). Bari of Eastern Nilotic and Dadog (Tatoga) of Southern Nilotic either escaped the development A → C or else gave up C more recently in favour of A.

Footnotes

*I would like to thank A. E. Meeussen for reading an extended version of this paper and making valuable suggestions for improvement.

[1]There are indeed languages which do not gap; e.g. Thai and Chinese (Bach 1970:11), or Ewe.

[2]For more details, see Heine (1975).

[3]Note, however, that Greenberg also applies the term 'dominant' to quite a different phenomenon, namely with reference to variant orders within a single language (see, for example, his use of this term in his Universals 1, 3, 5, 6, 7, and others). In this case, the term 'basic' is used here instead.

[4]Pairs like unmarked/marked or basic/derived as employed here refer primarily to language-internal comparisons. The use of terms like universal/particular seems premature at this stage of research.

[5]That this is indeed the case can be seen if the tables he gives are confronted with the data of his Appendix II, which are based on a much larger language sample. For example, in Table 1 it is stated that SOV languages do not have both prepositions and noun-adjective order (p. 61). Yet, in Appendix II, languages like Persian, Iraqw, Khamti, and Akkadian are listed which exhibit exactly this combination of orders (p. 87).

[6]A. E. Meeussen emphasizes that for an ergative system to be possible, S and O should be contiguous (personal communication).

[7]Outside Africa, Bashkir is reported to have S-O-V basic, and V-S-O variant order (Dezsö 1970:552).

[8]Note, however, that there are a number of languages having noun-adjective as their basic order which do not tolerate adjective-noun as an alternative.

[9]It is conceivable that there are languages which consist of dominant word orders only. All languages so far studied by us, however, have been found to have recessive features to some extent.

[10]In view of the peculiar characteristics of adjectival morphology in languages like Banda, A. E. Meeussen proposes to consider the status of constituents, rather than word order, as crucial (personal communication).

[11]Note, however, that not in all cases are endocentric constructions involved.

[12]For some criteria see Robinson (1970:272-275).

[13]This is what we call the Senegal-Volta Convergence area.

[14]There are different views about the exact nature of this split: whereas Joseph Greenberg claims that Niger-Congo has six coordinate branches, William Welmers assumes that there are only two branches, one of which is Mande.

[15]Drastic changes must have occurred in languages like Ijo or Nen (Tunen).

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