

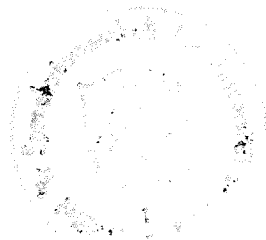
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PATTERNS OF GRAMMATICALIZATION
IN AFRICAN LANGUAGES



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Introduction

The approach outlined in the present paper is based on observations made with African languages. Although the 1000-odd African languages display a remarkable extent of structural variation, there are certain structures that do not seem to occur in Africa. Thus, to our knowledge, an African language having anything that could be called an ergative case or a numeral classifier system has not been discovered so far.

It may turn out that our approach can, in a modified form, be made applicable to languages outside Africa. This, however, is a possibility that has not been considered here.

Our work is based on a diachronic perspective. The relevance of linguistic change to the interpretation of synchronic language structure has been described by Greenberg (1977: 104) in the following way:

"Any approach to linguistic theory which has no place for generalizations based on the comparative study of linguistic change must fail to account for many phenomena which are not impervious to explanatory theory based on a process approach."

The present approach is based essentially on diachronic findings in that it uses observations on language evolution in order to account for structural differences between languages. Thus, it has double potential: apart from describing and explaining typological diversity it can also be material to reconstructing language history.

Talmy Givón has more recently claimed that there is a close relationship between diachronic linguistics and language typology. According to him, typology is "a captive of diachronic change", and "typological consistency is incomplete unless diachronic processes are taken into consideration" (Givón 1979: 204/205; see also Givón 1971b).

This paper is based on research carried out within the Cologne project on language universals (UNITYP). The findings presented have profited greatly from discussions within the research unit of UNITYP. We wish to express our gratitude in particular to Hansjakob Seiler, Jürgen Untermann, Christian Lehmann, Ulrike Mosel, and Fritz Serzisko for many valuable suggestions.

The starting point of this research was to find empirical evidence for the presence of functional scales in African languages. In the course of research, our attention was drawn to the fact that there exist certain similarities between linguistic scales which are based on a functional perspective and those that are characteristic of grammaticalization patterns. Seiler (1981: 115), for example, has demonstrated that each technique on the scale of POSSESSION "shows more syntacticization as compared to the technique immediately preceding". Such correlations as between the arrangement of techniques and the degree of syntacticization tend to be paralleled by certain sequences of grammaticalization, as we hope to display in the following chapter.

So far, our attempts at establishing correlations between grammaticalization processes and functional dimensions are still at the initial stage. This is due to the fact that we have been preoccupied mainly with studying the nature of grammaticalization. It is hoped that in a second research phase it will be possible to develop the observations made here into a model that can be used in order to understand certain aspects of functional dimensions.

1 Evolutional processes

1.1 Introduction

Grammaticalization is an evolutional continuum. Any attempt at segmenting it into discrete units must remain arbitrary to some extent. This applies in particular to the processes we propose in the present chapter, which are meant to serve as a means of segmenting this continuum. Although most of these processes appear to be "definable" in some way or other, it is hardly possible to trace clear-cut boundaries between them. Meillet (1948: 135) touches on this problem when he discusses the transition from words that he refers to as mots principaux to mots accessoires. He presents the following examples, each suggesting a different stage of grammaticalization (p. 131):

- (1) je suis celui qui je suis;
- (2) je suis chez moi;
- (3) je suis malade;
- (4) je suis parti.

While suis in (1) is an "autonomous" word, it is less so in (2), etc., and in (4) it has been reduced to a grammatical marker. But in spite of the problem as to where a mot principal ends and a mot accessoire starts, Meillet maintains that it is necessary to delimit the two (1948: 135):

"Mais, dans toute phrase donnée, il importe de bien marquer la distinction entre les mots principaux et les mots qui sont plus ou moins accessoires."

Our position is similar to Meillet's. On the one hand, we admit that there are serious, perhaps even insurmountable problems in delimiting processes. On the other hand, we consider them as a useful heuristic tool. We propose to define them as focal points within the evolutional continuum, rather than as discrete, segmentable entities. To what extent this approach is justified is open to further research.

1.2 Some basic processes

In this section, linguistic evolution is described in terms of grammaticalization processes. Three types of processes are distinguished:

- (1) Phonetic processes, which change the phonetic substance of linguistic units,
- (2) morphosyntactic processes, which affect the morphological and/or syntactic status of these units, and
- (3) functional processes, which affect the meaning or grammatical function of linguistic units.

The following is a list of processes which appear to be relevant to the typological description of African languages. To a large extent, the arrangement of processes reflects the chronological order in which they operate (but see 1.5).

- (1) Phonetic processes: Adaptation
Erosion
Fusion
Loss
- (2) Morphosyntactic processes: Permutation
Compounding
Cliticization
Affixation
Fossilization
- (3) Functional processes: Desemanticization
Expansion
Simplification
Merger.

1.2.1 Phonetic processes

1.2.1.1 Adaptation

This process refers to the phonological adjustment of a morpheme to its environment. Neighbouring linguistic units tend to 'assimilate'¹⁾ to one another in their phonological shape. A typical result of Adaptation is allomorphic variation, i.e. the presence of more than one allomorph indicates that the relevant unit has been adapted differently in different environments.

Not all cases of allomorphic variation are due to Adaptation; only morphs are in automatic alternation²⁾, i.e. phonologically conditioned allomorphs, which are suggestive of Adaptation. For the section concerning non-automatic alternation, see 1.2.2.5 (Fossilization).

Adaptation works at all levels of grammaticalization. There is, however, a noteworthy correlation with morphosyntactic grammaticalization: the more morphosyntactic processes a linguistic unit has undergone, the more susceptible is it to Adaptation. Thus, an affix is more likely to be affected by Adaptation than a free morpheme.

Adaptation involving the vowels of verbal endings in Bantu languages has been described under headings such as vowel harmony or regressive vowel assimilation. In Herero (Meinhof 1910: 125-127), as in some other Bantu languages, there is double Adaptation, one in accordance with vowel

1) Assimilation is used here in a wider sense; it includes, for example, dissimilation (see below).

2) Allomorphs of a given morpheme are said to be in automatic alternation if all their shapes are derivable from an actually occurring base by phonological rules which hold for all similar combinations throughout the language (cf. Greenberg 1954: 205, 214).

quality and another with nasality. The perfect suffix -ire, for example, has four allomorphs: -ire, -ere, -ine, and -ene. Their occurrence is defined by their phonological environment: the allomorphs containing n are used if the consonant preceding them is a nasal, otherwise the suffix consonant is r, and the first vowel of the suffix is i if the vowel preceding the suffix is either i or u, otherwise i is replaced by e. Thus, we have the following Adaptation processes:

I Vowel Adaptation: -ire \rightarrow -ere following a non-high vowel, e.g.

-rara 'lie' : -rar-ere perfect

-pora 'be cool' : -por-ere "

but: -tua 'put on' : -tu-ire "

II Nasal Adaptation: $\left[\begin{array}{l} \text{-ire} \\ \text{-ere} \end{array} \right] \rightarrow \left[\begin{array}{l} \text{-ine} \\ \text{-ene} \end{array} \right]$ following a nasal, e.g.

-puma 'pierce, prick' : -pum-ine perfect

-nina 'be dissatisfied' : -nin-ine "

-pama 'be narrow' : -pam-ene "

-tena 'threaten' : -ten-ene " .

Adaptation first tends to affect frequently used structures before it spreads to all other contexts.

The Jara dialect of Boni (Heine 1982) has an assimilation rule by which a velar nasal (ŋ) is replaced by a dental nasal (n) preceding dental nasals, i.e.

$\underline{\text{ŋ}} \rightarrow \underline{\text{n}} / _ \underline{\text{n}}$.

This rule can generally be applied at morpheme boundaries of affirmative verb tenses and the negative imperfect. It is blocked, however, in the case of the negative perfect aspect and the negative imperative:

(un) á-baarin-na (\leftarrow ⁺á-baariŋ-na) 'we (shall) speak'
((we) VF-speak-we/IMP)

(un) má-baariŋ-ne 'we have not spoken'
 ((we) not-speak-NEG/PERF)

ha-baaréŋ-ne 'don't speak!'
 (NEG-speak-NEG)

The Adaptation process may be active for some time and then fall into disuse. The following example from Bemba suggests that it was discontinued more recently with the past (perfect?) ending -ile. Thus verbs that have been introduced during the last decades, such as words borrowed from English, are no longer affected by it, as Richardson (1963: 135) notes:

"Verbal lexical extensions in Cibemba follow a regular pattern of sound changes depending on the sounds of the radical to which they are affixed. A common deviation in TB (Town Bemba) is the failure to make these changes, e.g. from a Nsenga informant -fon- 'telephone' extended to -fonil- 'telephone to', and from a Lozi student -kiliin- 'clean' extended to -kiliinil- 'clean for'. Cibemba phonology requires the various -il- extensions to change to -el- after an e or o in the radical. Similarly when the radical ends in a nasal consonant, l in these components should become n, thus giving -fonen- and -kiliinin-.

It is of interest that the -ile [= PAST] suffix normally follows similar processes of sound change to the above but not when the radical is foreign origin. Thus the -ile base of the loan-word -fon- is -fonile whereas that of the indigenous -pon- 'fall' is -ponene."

Junctural Adaptation

Certain Adaptation processes are confined to phonemes occurring at the juncture of morphemes.

An instance of junctural Adaptation is found in the Eastern Nilotic Maa language, where a mid vowel of certain morphemes (but not of others) is replaced by a corresponding high vowel if it is immediately preceded by either /a/ or /o/ belonging to a different morpheme, e.g.

te yyê 'with you' but: tí ân 'at home'
 (PREP you) (PREP home)

(cf. Tucker/Mpaayei 1955: 216)

Dissimilation

Adaptation, however, does not always lead to phonological assimilation, it may have the opposite effect, i.e. dissimilation. In the languages of the Congo Branch of Bantu, for example, there are various dissimilation rules which qualify as Adaptation processes. Dahl's Law, originally observed in Nyamwezi, was subsequently discovered in many other languages such as Thagicu (Kikuyu, Kamba etc.), Dzaramo, Shambaa, Kinyarwanda and Kirundi. In Meinhof's wording (Meinhof/Warmelo 1932: 181), it has the following effect: "When two successive syllables each begin with an aspirate, the first of these loses its aspiration and becomes voiced". In Kinyarwanda, a voiceless consonant of a noun prefix becomes voiced when the following stem has such a consonant as initial. Thus, the prefix iki- of noun class 7 is replaced by igi- if the following consonant is voiceless, e.g.

iki-rar-o 'sleeping place', but (→ Adaptation):
igi-koko 'wild animal'
igi-ti 'tree'.

Other important Adaptation processes by dissimilation are the Ganda Law¹⁾ and the Kuanyama Law²⁾.

1) "When two successive syllables both begin with a nasal plus following voiced plosive, the plosive of the first syllable is lost." (Meinhof/Warmelo 1932: 183)

2) "When two successive syllables both begin with a nasal and a following plosive, the nasal of the second compound is dropped." (Meinhof/Warmelo 1932: 184)

1.2.1.2 Erosion

This is a process by which the phonological substance of a morpheme is reduced, usually in accordance with its new evolutionary status. Thus, a bisyllabic word may be reduced to a monosyllabic morpheme once it has undergone Affixation.

Erosion may lead to a situation where the relevant morpheme (usually an affix) loses its syllabic or even segmental status, so that it is retained for example in the form of a simple consonant, vowel, or in the form of phoneme gemination, or a rule of tone/stress change or ablaut. It may therefore be responsible for the emergence of what Sapir (1921: 126) refers to as 'symbolism' or internal change, i.e. the infixing of inflective morphemes.

It would seem that Erosion is more likely to occur under some conditions than others. The following hypotheses, in particular, can be formulated with reference to African languages:

- (1) The longer the phonological sequence of a linguistic unit is, the more susceptible is that unit to Erosion.
- (2) The more grammaticalized a unit is, i.e. the more processes it has undergone, the more susceptible it is to Erosion.

Both (1) and (2) can be demonstrated with an example concerning peripheral Erosion in Luo. Word-final vowels in this language are deleted if the following syllable is light and begins with a vowel. This instance of Erosion applies to the following contexts:

- (a) when the word whose final vowel is deleted is polysyllabic, or
- (b) when it is monosyllabic but has undergone Desemantization (i.e. is a function word).

Thus, Erosion is blocked in the case of monosyllabic content words, that is, words which are not desemantized. (a) can be accounted for by hypothesis (1): the functional yield of a

final vowel is lower in words consisting of two or more syllables than in monosyllabic Luo words, which in the case of vowel deletion are reduced to one (consonant) phoneme. The fact that peripheral Erosion has nevertheless occurred with desemanticized monosyllabics¹⁾, though not with other monosyllabics, is accounted for by hypothesis (2): a word that has undergone Desemanticization is, ceteris paribus, more grammaticalized than a word that has not. Note that in the present example, (1) and (2) have identical effects, namely of triggering Erosion.

Erosion may have various effects on the phonological structure of linguistic units, the main ones being:

(a) Syllabic Erosion

After having undergone Cliticization and/or Affixation, polysyllabic morphemes tend to be reduced to monosyllabics.

In the following example from Kituba, a pidginized variety of Kikongo, bi- and trisyllabic pronouns and aspect markers have turned into monosyllabic affixes within two generations (Fehderau 1966: 116):

Two generations ago	Present generation	
<u>munu imene kw-enda</u> (I PERFECT to-go)	<u>mu-me-kwenda</u>	'I have gone'
<u>munu ikele kwenda ku-sosa</u> (I PROGR go to-search)	<u>mu-me-kwe-sosa</u>	'I am going about searching'
<u>munu lenda ku-sala</u> (I may to-work)	<u>mu-le-sala</u>	'I may work'

(b) Junctural Erosion

Phonemes occurring at the boundary between two morphemes of which at least one is a bound morpheme may be lost.

1) as well as cliticized monosyllabics; cf. Cliticization (1.2.2.3).

In Standard-Ewe, there is a drift to dropping the consonant of a lexical item once it comes to stand at a word-internal morpheme boundary. Thus, we observe the following instances of junctural Erosion:

- (1) vá 'to come' > -á- future tense (Westermann 1907:65)
 (2) ná 'to remain, > -a habitual aspect
 stay'
 (3) lá definite > -á definite article¹⁾
 article

The extent to which these morphemes have been affected by Erosion differs considerably: in (1), it is compulsory:

m-á-yi 'I shall go'; (<me-vá-yi).
 (I-FUT-go)

In (2), Erosion is blocked in the case of intransitive verbs but obligatory if an object NP follows:

me-yi-na (<me-yi-na) 'I used to go'; *me-yi-a
me-wɔ-a dɔ́ 'I use to work'; *me-wɔ-na dɔ́
 (I-do-HAB work)

In (3), Erosion is optional following singular nouns but obligatory following plural nouns:

atí lá or atí-á 'the tree'
 (tree the)
atí-á-wó 'the trees'; *atí-lá-wó
 (tree-the-PL)

(c) Peripheral Erosion

Word-final, to a lesser extent also word-initial, phonemes tend to be lost.

(d) Non-segmental Erosion

Erosion does not necessarily lead to a loss in phonetic substance; it may also involve a change in marking whereby a

1) For an alternative diachronic interpretation see Westermann 1907: 60.

highly marked segment is replaced by a less marked one. Usually, this has the effect of eliminating an existing phonological contrast.

Non-segmental Erosion is present, for example, when nasalized vowels are replaced by corresponding oral vowels, or when voiced obstruents become voiceless word-finally thus merging with the corresponding voiceless phonemes in this position.

In Kxoe (Köhler 1981:503ff; 530), some verbs undergo Affixation with the result that they become verbal derivative suffixes. Once these verbs are grammaticalized, they undergo non-segmental Erosion of the following kind:

- (1) they lose their tonological distinctiveness and invariably take an unmarked tone;
- (2) if the verb contains a nasalized vowel, this is replaced by a corresponding oral vowel:

Verbal source	Derivative suffix
<u>éi</u> 'to remain'	- <u>éi</u> 'continuous-intensive'
<u>má</u> 'to give, offer'	- <u>má</u> applicative
<u>xú</u> 'to abandon, loosen'	- <u>xú</u> terminative
	Inflectional suffix (Aktionsart)
<u>tí</u> 'to be present'	- <u>tè</u> 'to do s.th./standing'
<u>†núi</u> 'to be seated'	- <u>†nuè</u> , - <u>ñ</u> 'to do s.th./sitting'
<u> oě</u> 'to be lying'	- <u> oè</u> 'to do s.th./lying'.

Erosion is a process that is continuously at work in language. It tends to repeat itself as long as there is phonological substance to work on. In the following example from Duala, a Cameroonian Bantu language, different stages of Erosion may be observed. This development must have started with the verbal *gide 'to have finished' (cf. Voeltz 1980: 489-491; see The 'morphological cycle' 2.1) which became a perfect aspect suffix in Proto-Bantu. The following stages may be distinguished:

- I Junctural Erosion: $^+ \text{-gide} > ^+ \text{-ide}$ (Proto-Bantu)
- II Syllabic Erosion 1: $^+ \text{-ide} > -\underline{\text{i}}$ (after low tone),
 $-\underline{\text{i}}$ (after high tone) (Duala)
- III Syllabic Erosion 2: loss of suffix vowel after nasals,
 but its tone is retained on the nasal
 (Duala), e.g.

$\underline{\text{dum}}'$ (from $\underline{\text{duma}}$ 'to buzz')
 $\underline{\text{dun}}'$ (from $\underline{\text{duna}}$ 'to grow old')
 $\underline{\text{dim}}'$ (from $\underline{\text{dimà}}$ 'to extinguish')

(Ittmann 1939: 84)

Thus, the suffix has lost its segmental status after nasals in Duala but has been retained suprasegmentally.

1.2.1.3 Fusion

Fusion is present when the boundary separating two morphemes disappears, these morphemes thus being reduced to one phonological unit.

Fusion may either involve root morphemes, in which case it tends to, but need not (see below), be preceded by Compounding, or else it may involve one root and one non-root or two non-roots, in which case it follows processes like Cliticization or Affixation.

Like Loss (1.2.1.4), Fusion has the effect of reducing the number of morphemes as phonological units - the difference being that while Fusion retains the phonological substance of the relevant morpheme to some extent, this is not so in the case of Loss.

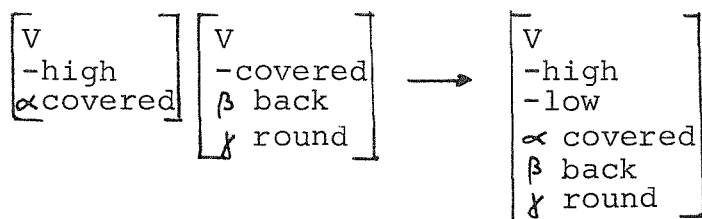
We may distinguish between partial Fusion, which affects only the phonological segments near the morpheme boundary, and total Fusion, as the result of which both morphemes concerned are replaced by an entirely different phoneme sequence¹⁾. The following is an example of the former:

Ewe: nɛ 'to him' (← ná dative preposition + e 3rd person object pronoun),

where part of the phoneme sequence (i.e. the initial nasal n) is not affected by Fusion.

Herbert Stahlke (1976: 52/3) has reported an instance of Fusion in the Qwɔn Afa dialect of Yoruba involving the sequence verb + object NP without prior Compounding or Affixation. Fusion takes place if the final vowel of the verb is non-high (e, ɛ, a, ɔ, o) and the initial vowel of the noun is non-covered (i, e, o, u). The process can be summarized by the following rule:

¹⁾Portmanteau morphemes are typical instances of total Fusion, e.g. French à 'to' + le 'the (masc.)' → au (/o/).



Examples:

<u>a</u> + <u>i</u> → <u>ɛ</u>	<u>dà</u> <u>îwé</u> → <u>dɛ̀wé</u> 'buy book'
<u>a</u> + <u>e</u> → <u>ɛ</u>	<u>dà</u> <u>ehwe</u> → <u>dɛ̀hwe</u> 'buy house'
<u>a</u> + <u>u</u> → <u>ɔ</u>	<u>dà</u> <u>ùjù</u> → <u>dɔ̀jù</u> 'buy pounded yam'
<u>a</u> + <u>o</u> → <u>ɔ</u>	<u>dà</u> <u>ópú</u> → <u>dɔ̀ɔ̀pú</u> 'buy dog' (vowel length from LH sequence)
<u>ɛ</u> + <u>u</u> → <u>ɔ</u>	<u>tɛ̀</u> <u>ùjù</u> → <u>tɔ̀jù</u> 'step on pounded yam'
<u>ɛ</u> + <u>o</u> → <u>ɔ</u>	<u>tɛ̀</u> <u>ópú</u> → <u>tɔ̀ɔ̀pú</u> 'step on dog' (LH sequence)
<u>ɔ</u> + <u>i</u> → <u>ɛ</u>	<u>dɔ̀</u> <u>èwé</u> → <u>dɛ̀wé</u> 'buy books'
<u>ɔ</u> + <u>e</u> → <u>ɛ</u>	<u>dɔ̀</u> <u>ehwe</u> → <u>dɛ̀hwe</u> 'burn houses'
<u>e</u> + <u>u</u> → <u>o</u>	<u>bè</u> <u>ùjù</u> → <u>bòjù</u> 'look for pounded yam'
<u>o</u> + <u>i</u> → <u>e</u>	<u>gò</u> <u>îwé</u> → <u>gèwé</u> 'look at book'

Although coalescence in this case operates across a word boundary, it is clearly characteristic of the Fusion process since it leads to the elimination of a (phonological) morpheme boundary.

1.2.1.4 Loss

This is the last of the processes within the cycle of linguistic evolution. It leads to the disappearance of a morpheme as a phonological unit¹⁾.

Loss is essentially a phonetic process, and as such it may be viewed as a special instance of Erosion. There can, however, be a morphological motivation for Loss as well, for example, when a certain morpheme is felt to be irrelevant to the purposes of linguistic communication and is dropped by a new generation of speakers.

Examples of morphologically motivated Loss can be found occasionally when a language undergoes pidginization. When Fanagalo emerged as a pidgin in South Africa, it gave up the noun class system that is characteristic of the Nguni languages from which it is derived. Nominal class prefixes were retained to some extent as number markers, in other cases they lost their function but were retained phonologically. In still other cases, however, they disappeared phonologically as well, e.g. (Heine 1973: 186):

Zulu (Nguni group)	Fanagalo	
<u>ili-qanda</u>	<u>qanda</u>	'egg'
<u>ili-thambo</u>	<u>thambo</u>	'bone'
<u>ili-bubesi</u>	<u>bubesi</u>	'lion'.

The loss of the class 5 prefix ili- (plural ama-, class 6) was probably motivated by the drift to replacing the opposition class prefix (singular)/class prefix (plural) by another opposition zero (singular)/prefix (Plural), which is a characteristic of most pidgins derived from Bantu languages. Thus, it was the pressure of eliminating the singular marker, rather than any phonological motivation, that appears to be responsible for this instance of Loss.

1) For the section concerning the disappearance of a morpheme as a functional unit, see Fusion 1.2.1.3

1.2.2 Morphosyntactic processes

1.2.2.1 Permutation

This is a process which changes the basic arrangement of linguistic units (morphemes, words, or constituents) in a sentence.

There are a number of factors which are responsible for Permutation (cf. Dik 1978: 174). According to our observations, the main ones are:

- (a) analogy,
- (b) thematic factors,
- (c) LIPOC,
- (d) verbal attraction.

These factors may be in conflict with each other, and the way such conflicts are solved constitutes an important parameter of typological diversity.

(a) Analogy

Analogy is seen here as an attempt at placing constituents which have the same functional specification in the same structural position (cf. Dik 1978: 174).

As such, analogy is frequently the result of other processes, in particular of Desemanticization. For example, a lexeme which is desemanticized into a function word tends to change its position in accordance with its new syntactic properties.

A relative clause marker derived from a demonstrative through Desemanticization, for example, tends to shift from the position assigned to the demonstrative modifier to the syntactic slot reserved to complementizers, for example, to the position immediately preceding the embedded clause.

In the following example from Kenya pidgin Swahili, the word ile 'that, those' precedes the adjective when used as a demonstrative, but it follows the adjective in its grammaticalized reading as a (definite) relative complementizer:

miti ile kubwa : miti kubwa ile na-anguka
 (tree that big) (tree big REL AOR-fall)
 'that big tree' 'the big tree which has fallen down'.

In Bari, an Eastern Nilotic language, the adverb dé 'then, afterwards' has undergone Desemanticization, becoming a future marker. Since, however, the basic position of adverbs is sentence-initial, while that of tense markers is between subject and verb, Desemanticization was followed by Permutation:

dé nan kɔn ... 'I shall do ... then'
 (then I do)

Desemanticization

Permutation

nan dé kɔn ... 'I shall do ...' (Spagnolo 1933: 105/6).
 (I FUT do)

(b) Thematic factors

Specific positions within the clause, especially the clause-initial and the clause-final position, tend to be assigned to certain constituents having topic or focus function.

Krio, an English-based creole spoken in Sierra Leone, has introduced a word order characteristic which differs from that of English, its source language: the possessor precedes, rather than follows, the possessed noun phrase. According to Givón (1979: 201), this order arose from topicalization of the possessor into the left-dislocation position.

A number of African languages require Permutation to operate in interrogative sentences whereby the constituent containing the interrogative information is in some languages obligatorily, in others optionally, topicalized to the sentence-initial position.

In Standard-Ewe, for example, object NPs and APs follow the verb¹⁾. If, however, they form interrogative constituents,

1) This does not apply to periphrastic constructions like the progressive and ingressive aspects.

they are obligatorily moved to the sentence-initial position (cf. Westermann 1907: 115):

$\frac{w\acute{o}-f\acute{l}e}{(they-buy\ cow\ two)}\ ny\acute{i}\ e\acute{v}e$: $\frac{ny\acute{i}\ n\acute{e}n\acute{e}\ w\acute{o}-f\acute{l}e}{(cow\ how/many\ they-buy)}$

'they bought two cows' 'how many cows did they buy?'

$\frac{m-\acute{a}-gbl\textcircled{s}-e\ n\acute{a}\ yev\acute{u}\ sia}{(I-FUT-say-it\ DAT\ European\ this)} : \frac{yev\acute{u}\ ka'\ m-\acute{a}-gbl\textcircled{s}-e\ n\acute{a}}{(European\ which\ I-FUT-say-it\ DAT)}$

'I'll tell it to this European' 'Which European shall I tell it to?'

(c) 'LIPOC'

The order of meaningful elements may also be changed as a result of certain drifts referred to by Dik (1978:192) as the language-independent preferred order of constituents ('LIPOC'). According to this principle, constituents are preferably placed from left to right in increasing order of complexity.

The following preferences in linearization may be said to be part of LIPOC (see Dik 1978: 192-211):

(a) There is no clear preference for the position of a simple NP in relation to the verb: it may precede or follow the verb¹⁾.

(b) the preferred position of pronominal constituents is preverbal.

(c) Pronominal constituents tend to precede nominal constituents.

(d) Prepositional phrases tend to follow corresponding constituent types without prepositions.

(e) Prepositional phrases tend to follow the verb.

(f) Subordinate clauses tend to assume the last position within the sentence, followed only by other, more complex

¹⁾ The fact that the subject frequently precedes the verb is due to thematic (pragmatic) reasons, since the subject tends to form the sentence topic.

subordinate clauses.

(g) Complex NP's (i.e. NP + subordinate clause) tend to be placed after the corresponding simple NP.

Most languages of the Congo branch of Bantu place nominal objects after, but cliticized pronominal objects before the verb. Givón (1975; 1979) has argued that these pre-verbal object pronouns are fossilized remnants of an earlier SOV syntax, which was retained in the pronominal structure but changed to SVO with nominal constituents. Since it has been shown that it is highly unlikely that the Bantu languages at any stage in their development had an SOV syntax (Heine 1980), this discrepancy between pronominal and nominal object placement is much more plausibly accounted for if one assumes that it was LIPOC which was responsible for this instance of Permutation (see (b) above).

(d) Verbal attraction

Certain word categories or constituents display an attractive power on other categories or constituents. As will be demonstrated in 1.4.1, the verbal word exerts a particular pressure on certain dependent constituents to move next to it. In this way, adverbial complements, or parts of them, may be removed from their basic position and attached to the verb as clitics or affixes.

1.2.2.2 Compounding

Compounding, as it is defined here, has the effect of combining two or more linguistic units into one single word, i.e. of eliminating the word boundary that separates them. Compounding thus resembles Affixation (see 1.2.2.4), the essential difference being that, while Affixation, or Cliticization for that matter, deals with linguistic units of differing morphosyntactic status, Compounding is present only if the two, or more, units share the same status of morphosyntactic evolution. This is particularly the case when all units concerned are roots.

Compounding tends to be accompanied, or followed, by Merger, which is its functional equivalent (see 1.2.3.4). There is, however, no obligatory relationship between the two.

Although we noted that Compounding relates in particular to roots, this is not always the case. There are examples where the linguistic units which share the same morphosyntactic grammaticalization stage are clitics, or even affixes (cf. Jeffers/Zwicky 1980: 226). The Somali word kale 'another' appears to be a result of Compounding: it is derived from a combination of three clitics: the Source preverb ka, the Comitative preverb la and the derivative suffix -eh 'being' (M. Lamberti, p.c.).

1.2.2.3 Cliticization

This is a process by which a full word becomes syntactically - and frequently also phonologically - dependent on other words. While Affixation is associated with a specific word or word category, Cliticization as defined here is typically a feature of phrasal constituents.

In Indo-European languages, deaccentuation is an important criterion for defining Cliticization (cf. Jeffers/Zwicky 1980). The suprasegmental behaviour of a word is in fact important for deciding whether one is dealing with Cliticization or not. However, complicated tonal structures in many languages make it difficult to use suprasegmental features as a means of defining Cliticization in Africa.

In African languages, it turns out to be particularly difficult to trace a boundary between clitic and affixal morphemes, and there are examples to suggest that Cliticization and Affixation may have occurred simultaneously.

Perhaps the best, although by no means a satisfactory means of distinguishing clitic from affixal morphemes is to have recourse to the relevant syntactic properties: usually, affixes can be described with reference to a word, while clitics tend to be associated with phrasal constituents. A comparison between the nominal gender marker of Bantu languages and Eastern Nilotic languages like Maa or Teso-Turkana shows that the former have undergone both Cliticization and Affixation, the latter are clitics, i.e. they have undergone Cliticization but not Affixation. In Maa, for example, the gender "prefix" is attached to the noun. If, however, the noun is preceded by a modifier then it loses the prefix, which is then attached to the modifier preceding it. Thus, these gender markers occupy the first position within the noun phrase; they are therefore proclitics rather than prefixes, as has been claimed frequently, e.g.

il-tuṅana kuti 'a few people' (Maasai dialect)
 or il-kuti tuṅana
 (masc.pl.-few people)

The presence of Cliticization can also be derived from the phonological behaviour of linguistic units. Luo has two groups of monosyllabic words. One group deletes a final vowel when followed by a light syllable beginning with a vowel, while the other group does not. The latter are content words while the former are function words, i.e. words that have undergone both Desemanticization, and, as far as the evidence available suggests (cf. Okoth 1982: 21ff), Cliticization. According to Adhiambo (1981: 3/4), there are three types of boundaries¹⁾ in Luo. Following the example of monosyllabic morphemes, we may say that each type of boundary corresponds to a different stage of grammaticalization:

<u>Type of boundary</u>	<u>Grammaticalization</u>
Full word boundary	before Cliticization
Weak boundary	after Cliticization
"Morpheme" boundary	after Affixation

(cf. also Hyman 1978).

Zwicky (1977) and Jeffers/Zwicky (1980: 221) propose to distinguish between simple and special cliticization. These may be considered as different developments in the process of Cliticization. Simple clitics are morphemes which have undergone Cliticization but at the same time have been retained as phonologically independent words (cf. Functional split). Special clitics are no longer associated with a full form, they exist exclusively as clitics²⁾.

1) These types are distinguished, in particular, on the basis of the behaviour of the vowel preceding them.

2) The English negative particle n't is presented as an example of special cliticization: it is no longer merely a variant of unstressed not, "since it occurs in a variety of environments in which unstressed not is barred", e.g. in tags

2) ctd.) like Can't they? (vs. ⁺Cannot they?) (Jeffers/Zwicky 1980: 225). Using an alternative analysis, according to which n't and not are considered as allomorphs occurring under certain conditions in mutually exclusive syntactic environments, one might conclude that n't could equally well be treated as a simple clitic. This may serve as an illustration of the fact that in many cases it is difficult to decide whether one is dealing with simple or special cliticization.

1.2.2.4 Affixation

Affixation marks a process by which a function word becomes part of another word. Since a word has to undergo at least one functional process (i.e. Desemanticization) to become a function word, Affixation presupposes functional grammaticalization. Furthermore, Affixation appears to require prior Cliticization, but further research is needed on this point.

Affixation leads to either derivation or inflection. This process involves either prefixing or suffixing, but not infixing. Our observations on African languages suggest that infixing is a complex process, it involves more than one simple process (see 1.4.2).

1.2.2.5 Fossilization¹⁾

The main characteristic of Fossilization is that it turns productive morphemes into unproductive ones. Fossilized morphemes show co-occurrence restrictions of one kind or other: they can only be combined with certain specific roots or stems.

A concomitant feature of Fossilization is that it leads to morphological 'irregularity'; allomorphs of fossilized morphemes are no longer in automatic (phonologically conditioned) alternation (cf. Adaptation 1.2.1.1).

1) This use of the term 'fossilization' differs from that of various other authors. Givón (1971b), for example, introduces the term with reference to developments where a change in the order of nominal sentence constituents does not affect the order of pronominal constituents. Pronominal order, in particular that involving cliticized morphology, thus, may be interpreted as the 'fossilized' remnant of an earlier, different order of sentence constituents.

1.2.3 Functional processes

1.2.3.1 Desemanticization

By this process, a lexical item receives a second, non-lexical function, which may ultimately become its only function. Thus, in addition to its lexical meaning, a word receives a grammatical function and can eventually develop into a grammatical morpheme. In many African languages, for example, a verb like 'finish' was desemanticized to an aspect, i.e. perfect marker (see 2.1.2), or a verb meaning 'say' became an object clause complementizer (see 2.1.2 and 2.2.3.1) as a result of Desemanticization.

Desemanticization may be viewed as a special instance of Expansion (see Expansion 1.2.3.2).

The introduction of Desemanticization does not necessarily mean that the lexical item affected by it disappears. Both the desemanticized and the non-desemanticized units may co-exist, although it is likely that the two become more and more dissimilar, in particular due to non-functional processes like Affixation and Erosion.

In the following example from Yoruba, the difference between the two can be inferred only from the context (Stahlke 1970):

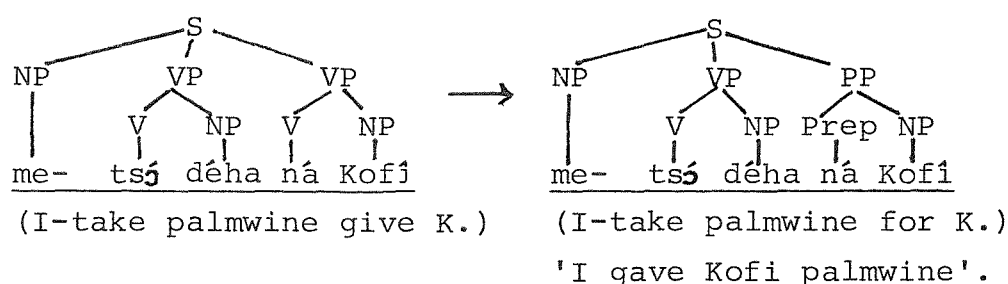
- | | |
|--|---|
| (1) <u>mo fi àdè gé igi</u>
(I took machete cut tree) | (2) <u>mo fi ogbòn gé igi</u>
(I took cleverness cut tree) |
| 'I cut the tree with a
machete.' | 'I cut the tree cleverly.' |

In (1), the (serial) verb fi may be said to have retained its lexical meaning, while in (2) the same verb is desemanticized and functions as an instrument or manner case marker. The co-occurrence of a verb both as a verbal and a (desemanticized) case marker is a common feature in the serial verb languages of the West African coastal belt (cf. Givón 1975).

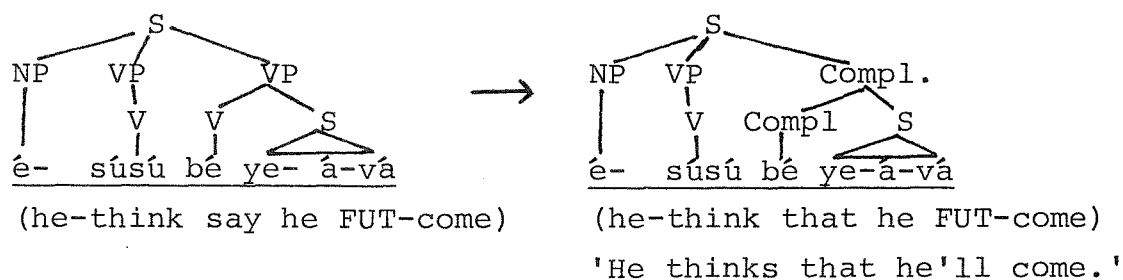
The shift, characteristic of Desemanticization, from semantic to grammatical function is accompanied by a shift in syntactic status, the relevant unit losing syntactic flex-

ibility (and syntactic properties according to Lord 1976: 189).

This shift in syntactic status may lead to significant changes in the constituent structure. Two examples from Ewe, a West African Kwa language, may illustrate the type of syntactic changes that accompany Desemanticization (cf. Lord 1976: 182/3; see also 2.2.3). In the first example, Desemanticization changes a verb to a preposition, and, with regard to the next higher node, a VP to a PP:



In the second example, the verb bé 'say' is desemantized to a complementizer 'that', and the constituent of which it is a part changes from VP to sentence complement:



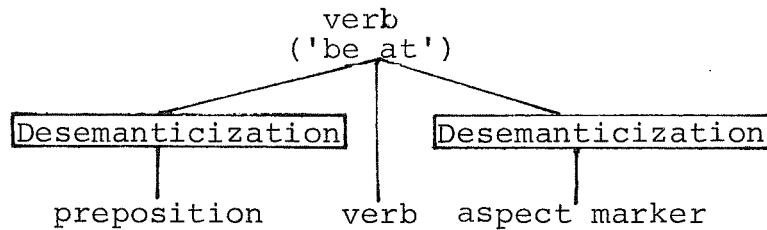
A linguistic unit may be desemantized repeatedly using different functional channels. This accounts for the fact, for example, that in various Kwa languages the erstwhile verb 'beat' occurs with three distinct functions: (1) locative verb ('be at'), (2) preposition ('at, in', etc.), and (3) aspect marker (incompletive), e.g.

- Ewe (1) me-le xɔ́ me 'I am in the house'
 (I-be/at house in)
- (2) me-ɖu nú le xɔ́ me 'I ate in the house'
 (I-eat thing PREP house in)

(3) me-le nú du-m̃ 'I am eating'.

(I-INCOM thing eat-PROG)

While (1) represents the original function, (2) and (3) are instances of Desemanticization, thus¹⁾:



Similarly, in the following example from So, a Kuliak language spoken in Eastern Uganda, the verb ac- 'come' has been desemanticized twice: as a future marker and as a venitive extension, i.e. a verbal suffix denoting movements towards the speaker or deictic focus). Note the following examples:

âc-îsa 'I come'

(come-I)

âc-îsa gúq-âc 'I shall buy'.

(FUT-I transfer-VEN)

1) For a more detailed discussion see Lord 1973: 275-279.

1.2.3.2 Expansion

Expansion has the effect of extending the function of a linguistic unit to other contexts, categories or syntactic slots.

Desemanticization may be considered as a special case of Expansion, since it also concerns enriching an existing linguistic unit with an additional function. The main difference between the two is that, while Desemanticization adds a non-lexical function to a lexical unit, Expansion involves grammatical units receiving an extra function¹⁾. For a distinction between Expansion and Simplification see 1.2.3.3 below.

Expansion may be category-internal or category-external. It is internal if it does not affect the morphological status of the relevant unit, i.e. if it takes place within the same word or morpheme unit. Internal Expansion is present, for example, if a locative preposition comes to be used as a dative preposition as well: the new function retains the morphological status of its source.

External Expansion, on the other hand, involves a shift to another word or morpheme category: the new function is allocated to another, usually "more grammaticalized", morphological unit. This is the case, for example, if a locative preposition comes to be used as a complementizer, an adverb as a preposition, or a demonstrative as a relative pronoun.

1) Expansion, as we understand it here, is a process that follows Desemanticization. This process may, however, be said to occur as well with full lexical items, i.e. with words that have not been desemanticized. An example is provided by Meillet (1948: 136):

"De ce qu'un mot est groupé avec un autre d'une manière qui tend à devenir fixe dans certains cas, il résulte pour ce mot la perte d'une partie de son sens concret dans ces constructions. Soit par

An example of Expansion following Desemanticization is provided by the development of the periphrastic future in Latin (Benveniste 1968: 89-91). Around the 3rd century A.D., a periphrastic construction consisting of the passive infinitive + habere came into use which was restricted to subordinate, typically relative clauses. Its function was restricted as well: it acted as the equivalent of a future passive participle indicating predestination but not obligation. Then Expansion took place, involving the following developments:

- (1) the periphrastic construction spread from subordinate to independent clauses,
- (2) it was extended to deponential and intransitive verbs, and finally to all verbs,
- (3) having been a marker of predestination ('what is to happen') it became generalized as a future marker ('what will happen').

Around the 7th century, this construction then entered into rivalry with the traditional, inflexional, future (-bō, -am) and succeeded in evicting it.

1) ctd.) example le mot pied; employé isolément, il désigne une partie du corps humain très définie, de forme très spéciale; groupé avec le nom d'un objet, dans des expressions comme le pied d'une table, d'une chaise, d'une lampe ou le pied d'une montagne, le mot perd sa valeur concrète tout entière, et il n'en reste plus qu'un élément abstrait: partie d'un objet qui supporte et est en contact avec une surface portante."

1.2.3.3 Simplification

With this label, we refer to the development of regularities for formerly irregular aspects of grammar. Simplification can be considered as an "optimalization of existing rules" or as analogical leveling (W.P. Lehmann 1963: 183/4). It has the effect of extending the range of contexts to which rules are applied.

Simplification and Expansion may be considered as different aspects of one and the same process: both have to do with analogical form, and both relate to the extension of a linguistic unit to contexts where it has not been used previously. The major difference between them is that this extension is syntagmatic in the case of Expansion but paradigmatic in that of Simplification, and one may therefore refer to the former as "syntagmatic analogy" and to the latter as "paradigmatic analogy".

Typically, Simplification involves the replacement of one linguistic unit by another, while this is not necessarily the case with Expansion.

Simplification is encountered, for example, within a paradigm where one member of the paradigm replaces others - a development that may lead to the loss of the relevant paradigmatic distinctions. Pidginization in African languages offers a multiplicity of examples for this; loss of many paradigmatic distinctions being, in fact, one of the main characteristics of pidginization.

A universal feature of pidginization is, for example, the loss of noun class/gender distinctions. Simplification takes place when one gender marker replaces all other gender markers within a given paradigm. In pidginized Hausa (Hodge 1958), for example, loss of the gender system led to the replacement of feminine gender markers by masculine markers:

	Standard Hausa		Pidgin Hausa
masc.	<u>yā</u> <u>zō</u>	'he has come'	} <u>yā</u> <u>zō</u> 'he, she has come'
fem.	<u>tā</u> <u>zō</u>	'she has come'	

	Standard Hausa		Pidgin Hausa
masc.	<u>ûbā-nā</u> 'my father'		<u>uba-na</u> 'my father'
fem.	<u>ûwā-tā</u> 'my mother'		<u>uwa-na</u> 'my mother'

In the following example from Kituba, a pidgin derived from Kikongo (Fehderau 1966), the possessive gender marker ya of class 9 has replaced all other gender markers:

	Kikongo (kiManyanga)		Kituba
Class 1	<u>mwana wa mbote</u> (child of goodness)		<u>mwana ya mbote</u> 'a good child'
2	<u>bana ba mbote</u>		<u>bana ya mbote</u> 'good children'
7	<u>kima kya mbote</u>		<u>kima ya mbote</u> 'a good thing'

(cf. Heine 1973: 193)

The following example from Kenya Pidgin Swahili (Heine 1973: 70-118) looks like a case of Loss since it involves the disappearance of adjectival agreement markers during pidginization:

noun class	Standard Swahili		Kenya Pidgin Swahili
1	<u>m-toto m-kubwa</u>		<u>m-toto kubwa</u> 'a big child'
2	<u>wa-toto wa-kubwa</u>		<u>wa-toto kubwa</u> 'big children'
3	<u>m-ti m-kubwa</u>		<u>m-ti kubwa</u> 'a big tree'
4	<u>mi-ti mi-kubwa</u>		<u>mi-ti kubwa</u> 'big trees'

There is, however, reason to assume that we are dealing with Simplification rather than with Loss. The decline of gender distinctions in Kenya Pidgin Swahili in most cases led to the generalization of the class 9 gender markers¹⁾, as the example below suggests:

noun class	Standard Swahili		Kenya Pidgin Swahili
1	<u>m-toto h-uyu</u>		<u>m-toto hii</u> 'this child'
2	<u>wa-toto h-awa</u>		<u>wa-toto hii</u> 'these children'
5	<u>shamba h-ili</u>		<u>shamba hii</u> 'this farm'
9	<u>kazi h-ii</u>		<u>kazi hii</u> 'this work'

1) There are a few exceptions, particularly with adjectives; see Heine 1973: 79.

The adjectival agreement marker of class 9 is now \emptyset (zero), Simplification in the adjectival agreement paradigm therefore had the effect of extending the zero gender marker of class 9, which replaced all other gender markers. The fact that this hypothesis is correct can be seen from examples where the class 9 adjectival marker has been retained. This is, for example, the case with monosyllabic adjectives, which take a nasal prefix, and with adjectives beginning with a vowel, whose class 9 prefix is ny-:

noun class	Standard Swahili	Kenya Pidgin Swahili	
1	<u>m-toto m-pya</u>	<u>m-toto mpya</u>	'a new child'
	<u>m-toto mw-eupe</u>	<u>m-toto nyeupe</u>	'a white child'
2	<u>wa-toto wa-pya</u>	<u>wa-toto mpya</u>	'new children'
	<u>wa-toto w-eupe</u>	<u>wa-toto nyeupe</u>	'white children'
9	<u>kalamu m-pya</u>	<u>kalamu mpya</u>	'a new pencil'
	<u>kalmu ny-eupe</u>	<u>kalamu nyeupe</u>	'a white pencil'.

1.2.3.4 Merger

By this process, the meaning or function of two linguistic units merges into one new meaning/function which is different from that of the combined units.

Merger is a functional process corresponding to Fusion as a phonetic and to Compounding as a morphosyntactic process.

Merger may precede Compounding. That can be seen from the following example from Krongo, a Kordofanian language: the verb t-obU 'to close/shut (one's eyes, mouth, or hand)' and the object iyU 'eyes' have undergone Merger with the resulting meaning 'to fall asleep'. This process has been followed by the optional introduction of Compounding. The following sentences show that Compounding may be (2), but need not be applied (1):

- (1) n-oob-a'a iyU a t^yerekeḡe (2) n-oob-iy-a'an a t^yerekeḡe
 (GEN-close-I eyes PREP sleep) (GEN-close-eyes-I PREP sleep)
 'I fall asleep because of fatigue.'

Sentences (1) and (2) are synonymous and can be used interchangeably.

Compounding frequently, but not necessarily, leads to Merger. The compound

éyá-tà 'therefore, that is why'
(he/it-head/top)

of Standard Ewe is an example of Merger while the compound

ame-ká 'who?'
(person-which)

is not since its meaning can be derived unambiguously from those of its constituents.

Typically, Merger affects adjacent morphemes. It may, however, apply as well to morphemes which are separated by other morphemes - and thereby be responsible for the emergence of discontinuous morphemes. The following examples from Ewe are characteristic of Merger involving a verb and a relational noun, which has assumed the function of a postposition:

dó nkú ... dzí 'to remember (s.th.)'
(arrive/at eye ... on)

kpé dé ... nú 'to help (s.o.)'.
(meet go/to ... on)

Frequently, it is not easy to determine whether Merger has in fact taken place or not. Let us examine some compounds from Standard-Ewe involving the nominal ga 'metal, money'. In the following examples¹⁾, the native speakers' reaction suggests that there is no Merger:

<u>zě</u> 'pot'	:	<u>ga-zé</u> 'metal pot, kettle'
<u>só</u> 'horse'	:	<u>ga-só</u> 'bicycle'
<u>tsî</u> '(wooden) spoon'	:	<u>ga-tsî</u> 'metal spoon'
<u>nú</u> 'thing'	:	<u>ga-nú</u> 'any object made from metal, e.g. tin'

In the following example, Merger appears to have taken place with meaning (1) but not with (2):

<u>-tá</u> 'owner'	:	<u>ga-tá</u> (1) 'prisoner'
		(2) 'somebody owning money, rich person'.

1) These examples have been selected from Westermann 1905.

The examples below, again, appear to be cases of Merger, although not all native speakers would subscribe to this:

mí 'excrements' : ga-mí 'rust'
~~yo~~ 'house' : ga-~~yo~~ 'prison'
fo 'beat', édókúí : ga-fo-dókúí 'watch'
 'of itself'
nkú 'eye', -í (← -é): ga-nkú-í 'spectacles'.
 'it is'

Merger may be said to be present when it is no longer possible to treat each component as a lexical unit of its own but rather to consider the relevant sequence as a separate lexical entry¹⁾.

¹⁾ Carol Lord's conclusion that "a compound does not have its own lexical entry until it begins to devide semantically from its components" (1975: 43) refers to roughly the same fact.

1.3 Other processes

Apart from the basic processes listed above there are others which may be considered as being less relevant to our understanding of linguistic evolution in Africa. The following are examples of such processes; the list could be extended considerably.

Reduplication

Reduplication, for example, is a process that is made use of in Africa perhaps more often than elsewhere. It may involve entire clause structures like

Ewe é-zɔ mɔ́é-zɔ mɔ́ 'he walked for a long time'
 (he-go way he-go way) (Westermann 1944: 34)

or phrases, e.g.

Ewe dzi-kú-dzi-kú (name given to a new-born whose brothers
 (born-died born-died) and sisters have died)

or words, e.g.

Ewe ɔ́-ɔ́ 'eating',
 (eat-eat)

or even parts of words, e.g.

Rendille yêd, pl. yed-ád 'word'
ûr, pl. ur-âr 'stomach'
âf, pl. af-âf 'mouth'

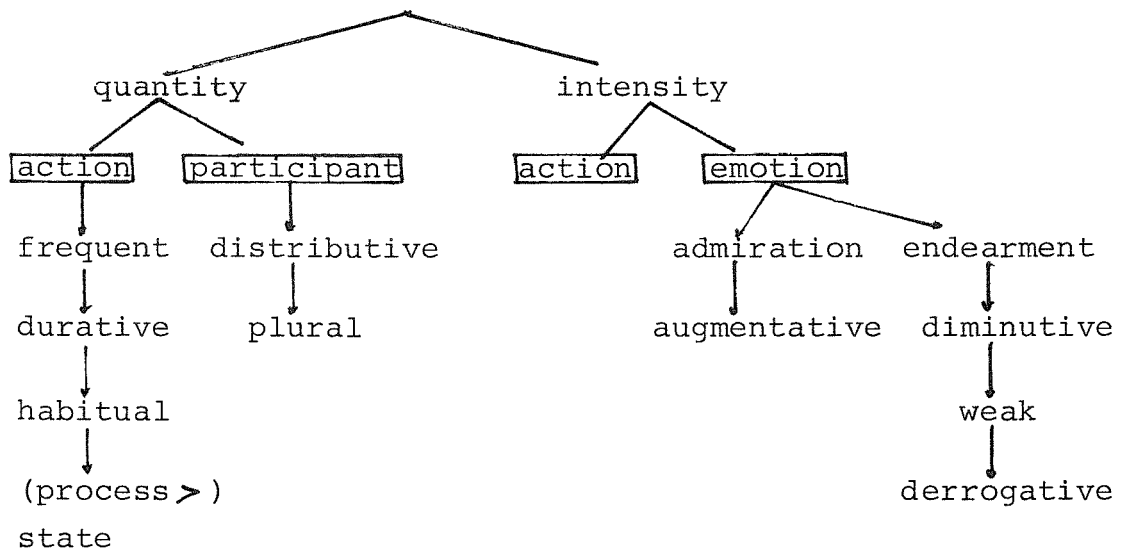
These are only the most basic patterns. For a detailed discussion of the formal diversity of Reduplication, see Moravcsik 1978.

The exact range of functions that this process may have is largely unclear. It is hardly possible to isolate one overriding function; the following is a list of meanings that Reduplication has been associated with in African languages (cf. Westermann 1944: 100ff):

- (1) repeated/frequent action,
- (2) spacial extension,

- (3) temporal extension,
- (4) intensity,
- (5) generalization,
- (6) distributive meaning,
- (7) plurality,
- (8) diminutive meaning,
- (9) duration, state and quality.

A bird's-eye view on African languages suggests that Reduplication may be associated with two primary functions, i.e. expressing quantity and intensity, and that most other functions can be derived from these in roughly the following way¹⁾:



This highly simplified diagram ignores the possibility of crosscuts and intersections. What is, however, more important is that it does not take the grammatical significance into consideration that Reduplication may have. The transition from process to state, for example, which is a widespread characteristic of Reduplication in Africa, tends to be paralleled by a change in word category: in this way, action or process verbs change into state verbs, or verbs into adjectives or nouns, e.g.

1) We are grateful to Ulrike Claudi for having advised us on the scope of functions Reduplication has.

Ewe dzó 'to leave' : dzó-dzó 'left, gone away (adj)',
dzo-dzó 'leaving, departure'.

Furthermore, Reduplication may have a syntactic function. In various African languages, for example, it is used to derive intransitive from transitive verbs.

Metathesis

Metathesis could be considered as a special case of Permutation. However, while the latter always precedes Affixation, the data available suggest that Metathesis operates only after Affixation has taken place.

We distinguish between phonological and morphological Metathesis. In the former, a bound morpheme/clitic moves over a consonant cluster or a syllable, involving an alteration in the direction of e.g. a more favoured phonotactic structure. In morphological Metathesis, a bound morpheme/clitic moves over a morphological constituent (cf. Jeffers/Zwicky 1980: 227).

Metathesis is one of the primary sources of infixation. Ultan (1975: 178/9) notes, for example, that "the general Semitic Restriction on the occurrence of a sequence composed of dental obstruent + sibilant has in Hebrew resulted in the development of an infix instead of the reflexive prefix t- in stems with a sibilant as first radical", and he gives the following example from Biblical Hebrew:

y-šammer 'watch', 3rd sg. perf. reflexive:
hiš-t-ammer 'watch', 3rd sg. impf. intensive.

Renovation

Finally, we shall isolate a process by which a lexical item enters a grammaticalization channel to "reinforce" or replace an existing morpheme. This process, which we refer to as Renovation¹⁾, is a means of introducing a new morphological cycle after a previous cycle nears completion or is completed.

At what stage Renovation starts is largely unclear. Typically, it takes place when a previous morpheme has lost in "functional strength", distinctiveness, or has undergone Loss or Merger.

It would, however, be naïve to assume that once a morphological unit has been lost, Renovation necessarily comes in. Firstly, a cycle may be completed without there being the need for a new cycle. Secondly, there may be other means of maintaining the function of the lost morpheme. A language can react to Loss by increasing the number of phonemes²⁾. For example, if Loss was preceded by Adaptation, the latter may have the effect of conserving the function of the lost segment, for example in the form of an infix-like vowel change. The case of the Dinka passive (see 1.4.2) offers an example of such development.

Renovation tends to coincide with processes which initiate a morphological cycle, i.e. usually with Desemanticization. Note, however, that Desemanticization may take place irrespective of Renovation, since it does not presuppose a preceding cycle.

1) This term has been proposed by Christian Lehmann (p.c.).

2) Eliasson (1980: 132), for example, writes with reference to Old Norse: "From this point of view the development in Old Norse can be described as a development from a code of the type A to a code of the type B, a development towards a code with a higher number of signals and shorter words."

1.4 Complex processes

While the processes listed above may be labelled simple, there are others which we propose to call complex processes since they involve more than one simple process.

Complex processes are in particular:

- (1) Verbal attraction,
- (2) Infixation and
- (3) Functional shift (Expansion + Loss).

1.4.1 Verbal attraction

Verbal attraction is a complex process by which linguistic units being part of or forming arguments of the predicate are attracted to the verb, undergoing Cliticization and/or Affixation. The endpoint of this development is reached when the relevant unit either becomes a verbal affix or merges entirely with the verb. The following categories in particular are prone to verbal attraction:

- adpositions and adverbs,
- verbs, and
- object nouns.

Furthermore, personal pronouns tend to be affected by verbal attraction.

Verbal attraction involving adpositions

An adposition can be removed from the NP it governs and allocated to the verbal word, becoming a verbal clitic or affix, causing the following syntactic shift to take place:

verb - Adp. + NP \longrightarrow verb + Adp. - NP.

In Kxoe, for example, the postposition /xoà 'with (comit.)' is used as a verbal suffix denoting comitative actions:

djáo-/xoà-à-tè 'he collaborates" (Köhler 1981: 503).
(work-with-junct-TENSE)

The processes involved are:

- (1) Permutation: the postposition /xoâ moves from the post-nominal to the post-verbal position;
- (2) Affixation: /xoâ becomes a verbal suffix.

Dholuo has a verb attraction rule applying to case marking prepositions: once the NP governed by the relevant preposition is topicalized to the pre-verbal position the preposition is removed from the AP and attached to the verb as a suffix (Okoth-Okombo, p.c.).

Thus, in a sentence like (1), the benefactive preposition ne 'for' undergoes verbal attraction once the following noun becomes the sentence theme and is placed before the verb. (2) offers an example of an active and (3) of a "passive" sentence containing a topicalized benefactive noun:

- (1) jon nego diel ne juma. 'John is killing a goat for Juma.'
(John is/killing goat for Juma)
- (2) juma jon nego-ne diel. 'John is killing a goat for Juma.'
(Juma John is/killing-for goat)
- (3) juma i-nego-ne diel. 'A goat is being killed for Juma.'
(Juma PAS¹-kill-for goat)

Sentences (5) and (6) are examples of verbal attraction involving the locative preposition e of sentence (4):

- (4) jon nego diel e wi go. 'John is killing a goat on top of the hill.'
(John is/killing goat on head hill)
- (5) wi got jon nege-e (← nego-e) diel. 'On the top of the hill, John is killing a goat.'
(head hill John kill-on goat)
- (6) wi got i-nege-e (← nego-e) diel. 'On top of the hill, a goat is being killed.'
(head hill PAS¹-kill-on goat)

The instrumental preposition gi 'with' changes to go once it is attracted to the verb:

1) i- is an imperfective aspect marker of the so-called "passive" construction of Dholuo.

- (7) jon nego diel gi pala. 'John is killing a goat with
(John is/killing goat with knife) a knife.'
- (8) pala jon nego-go diel. 'John is killing a goat with
(knife John kill-with goat) a knife.'
- (9) pala i-nego-go diel. 'A goat is being killed with
(knife PAS-kill-with goat) a knife.'

The relevance of verbal attraction with reference to adverbial constituents has been pointed out by de la Cruz (1977: 281) for Indo-European¹⁾.

Verbal attraction involving verbs

A verb may be attracted to another verb, eventually becoming an affix of the latter.

In Kxoe, the verb mā̂ 'to give, offer' in this way became a derivative suffix (-mā̂) having "applicative" function, i.e. adding a Goal case role to the verb:

djà(o)-rǝ-mā̂-à-tè tí ʔà 'he works for me' (Köhler 1981:
(work-junct.-GOAL-junct.-TENSE I ACC) 503ff).

This shift involved the following basic processes:

- (1) Desemanticization: 'to give, offer' > Goal case role;
- (2) Permutation: mā̂ moves immediately behind the main verb (djà(o));
- (3) Affixation: mā̂ becomes a verbal suffix;
- (4) Erosion: the articulation of mā̂ is phonetically simplified (> -mā̂): it loses nasality, and its contour tone is replaced by a register (mid) tone.

1) "The evidence of Indo-European linguistics shows that the locative verbal word-like structure of the Indo-European languages arose originally from the coalescence of actual phrases into word complexes through a process of dependence (that is, loss of autonomy) on the part of the prefixes. So a verbal prefix or preverb of the type we are concerned with, is originally an independent locative modifier or adverb-like word which associates itself with a verb becoming a bound morpheme."

Verbal attraction involving object nouns

While in most cases verbal attraction leads to the emergence of derivative or inflexional affixes through Cliticization and Affixation, it may equally lead to Merger, thus involving word formation rather than grammatical expansion. Such a type of verbal attraction is particularly common with verb phrases where verb and object noun acquire an idiomatic significance and merge into one lexical item. In this case, the object noun becomes a verbal clitic and eventually loses its morphemic status; what results is a phonologically extended new verb.

In Krongo, a Kordofanian language, the verb t-obU 'close/shut (one's eyes, mouth or hands)' has merged with the object noun iyU 'eyes' to form a new verb t-oob-iyU 'to fall asleep'. This process has not yet been concluded; there are nowadays two co-existing constructions: one that has undergone verbal attraction and another that, as yet, has not. There is apparently no difference in meaning between the two:

<u>n-oob-a'a iyU a t^Yerekeḁe</u>	<u>n-oob-iy-a'an a t^Yerekeḁe</u>
(GEN-close-I eyes PREP sleep)	(GEN-close-eyes-I PREP sleep)

'I fall asleep because of fatigue.'

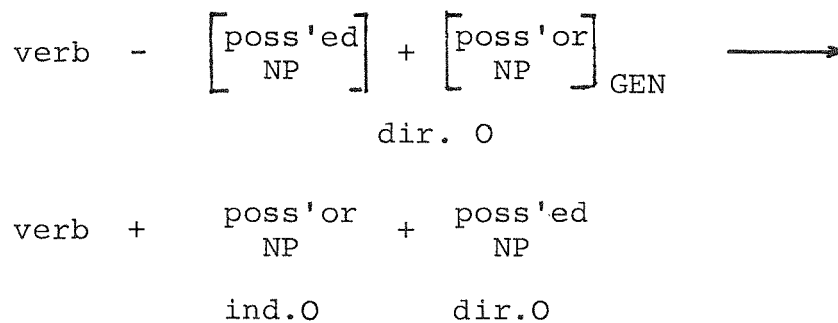
<u>n-iiji t^Yerekeḁe n-oobu-tI</u>	<u>n-iiji t^Yerekeḁe n-oob-iy-aadI</u>
(GEN-be/big sleep GEN-closing-my)	(GEN-be/big sleep GEN-closing-eyes)
<u>iyU ma-di</u>	<u>ma-di</u>
eyes PREP-it)	eyes-my PREP-it)

'Big is the fatigue that I fall asleep of.'

Note that verbal attraction in this case does not involve immediately adjacent morphemes but rather morphemes which are separated by another morpheme, a clitic pronoun. Verbal attraction here leads to shifting the object noun beyond the clitic pronoun to the position immediately after the verbal root.

Possessor promotion

Possessor promotion may be considered as a special instance of verbal attraction. It has the effect of transferring a nominal constituent (i.e. a possessor NP) from the valency pattern of a noun into that of a verb, i.e. it involves the following syntactic shift:



Note that possessor promotion is usually confined to part/whole relations, where the possessed NP is semantically part of the possessor NP. In some languages, possessor promotion is limited to cases where the possessed NP denotes an inalienable body part, e.g. in Haya, a Bantu language of Eastern Tanzania:

- ? ŋ-ka-hénd' ómukono gw' ómwáana 'I broke the (detached) arm of the child.'
(I-PAST-break arm of child)
- ŋ-ka-hénd' ómwáan' ómukôno 'I broke the child's arm.'
(I-PAST-break child arm)

If there is no part/whole relation, possessor promotion is blocked in Haya:

- ŋ-ka-hénd' éŋkoni y'ómwaana 'I broke the stick of the child.'
(I-PAST-break stick of child)
- + ŋ-ka-hénd' ómwáan' éŋkoni (lit: 'I broke the child the stick.')
(I-PAST-break child stick)

(Hymann 1977: 101)

An example of a locative noun which forms the possessed NP being taken away from the genitive construction and in-

serted within the verbal group has been reported by Fritz Serzisko (p.c.) for Somali:

shimbirihii geedka dush-iisa ayuu fuushan yahay.

(birds tree-DEF top-its FOCUS sitting are)

→ shimbirihii geedka ayuu dul fuushan yahay.

(birds tree-DEF FOCUS top sitting are)

'The birds are sitting on the tree.'

1.4.2 Infixation

By infixes we refer to morphemes which are inserted into other morphemes, the latter thus turning into discontinuous morphemes. Ablaut phenomena, as can be observed in pairs such as sing: sang or man: men are included within this definition.

Following Ultan (1975), we may summarize the development leading to infixation thus:

(1) Infixes evolve chiefly from other affixes, i.e. prefixes or suffixes.

(2) Infixes are primarily inserted into roots. If there are cases of infixation within other affixes, then this is likely to imply prior root infixation.

(3) Infixes tend to undergo Merger or Loss more rapidly than other affixes.

According to Ultan (1975: 178-184), there are two primary sources of infixation: metathesis and entrapment (see 1.3). In the present section, we wish to add another source that is especially relevant to account for the evolution of infixes by ablaut in African languages. This evolution involves two consecutive processes: Adaptation followed by Loss.

In Shilluk, a Western Nilotic language, the agent of a passive construction is introduced by the preposition ye (or yi), e.g.

a-pwot yi yan 'he has been struck by me'.
(PAST-struck by me)

This preposition optionally undergoes Affixation and becomes a verbal suffix -i:

a-pwot-i yan he has been struck by me' (Kohnen 1933: 136).
(PAST-struck-by me)

Dinka, a closely related language, distinguishes between two passive forms: one which does not allow an agent, and another which requires an agent. While the former is indistinguishable from the corresponding active form (Nebel 1948: 24), the latter can be said to be derived from the former by a vowel infix which consists of the following vowel changes¹⁾ (Nebel 1948: 69/70):

	form without agent	form with agent
<u>a</u> → <u>ɛ</u>	<u>anhiar</u>	<u>anhier</u> 'to like, love'
	<u>akap</u>	<u>akɛp</u> 'to seize, seduce'
	<u>athal</u>	<u>athɛl</u> 'to cook'
short vowel → long vowel	<u>alɛt</u>	<u>alɛɛt</u> 'to insult'
	<u>alom</u>	<u>aloom</u> 'to take'
	<u>athiec</u>	<u>athieec</u> 'to ask'.

We may assume that the agent-marking passive form of Dinka constitutes a later development of an erstwhile preposition which became a verbal suffix ⁺-i which nowadays is retained as ablaut, and we can reconstruct the following development stages:

- Stage I: Affixation The Western Nilotic preposition ⁺ye is subject to Verbal attraction (see 1.4.1) and becomes a verbal suffix ⁺-i, as has been outlined for Shilluk.
- Stage II: Adaptation The root vowel is influenced by the suffix vowel ⁺-i, i.e. a changes to ɛ, and short vowels tend to be replaced by long vowels.
- Stage III: Loss The suffix ⁺-i is lost; it is replaced by an infix-like vowel change.

1) As one would expect with morphemes undergoing Fusion, there is a considerable amount of phonological irregularity involved in these changes. The two cases presented appear to be the most characteristic of these changes.

1.4.3 Split and shift

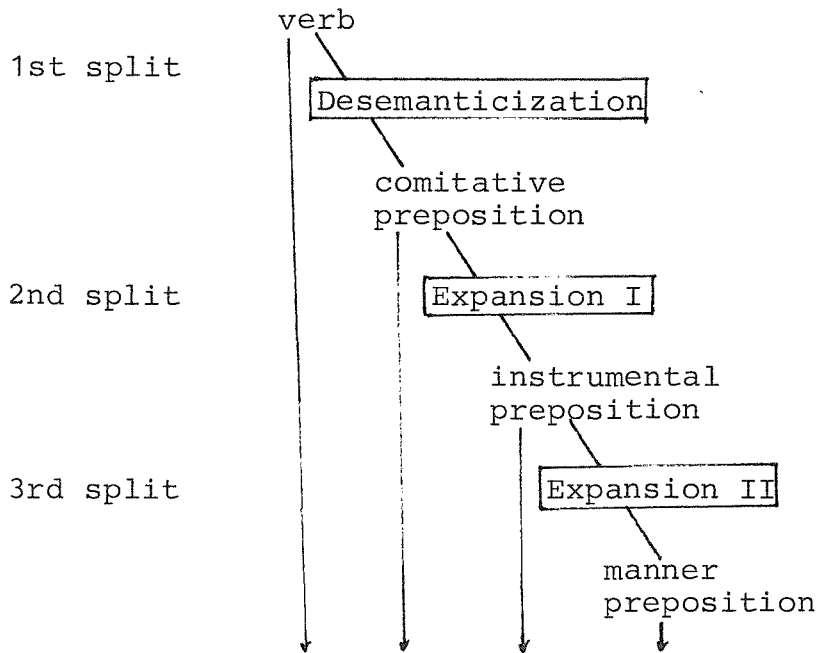
1.4.3.1 Split

A characteristic of virtually all developments is that when a given linguistic unit undergoes a certain process then it does not do so in all its uses; it tends rather to be retained in its former status as well, so that there are two co-existing forms of that unit: one that still represents the old status and another that marks the new status resulting from grammaticalization¹⁾.

In Luo, a Western Nilotic language, the adverbs nende 'earlier the same day' and nene 'some considerable time ago' developed into the past tense marker n(e)- (Stafford 1967: 27/8). Since the adverbs retained their former meanings and forms, we are dealing with an example of functional split, where two different developments of one and the same unit co-exist in the language (see 1.5).

An example of functional split involving both Desemantization and Expansion is provided by Lord (1973: 280-286) with reference to the comitative verb kpèlú 'be included among, be together with' of Yoruba. Following Lord (1973: 286), we may assume that this verb experienced various splits, as indicated in the following graph:

1) The distinction between simple and special cliticization proposed by Zwicky (1977; see also Jeffers/Zwicky 1980) appears to relate to this developmental characteristic: simple clitics are morphemes which have undergone Cliticization but at the same time have been retained as phonologically independent words. Special clitics, on the other hand, are no longer associated with a full form, they exist exclusively as clitics.

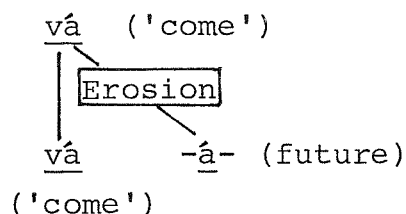


Thus, kpèlú is represented in modern Yoruba with three different prepositional functions. Furthermore, it was grammaticalized into an adverb (Lord 1973: 289). Its original function as a verb is still present, e.g.

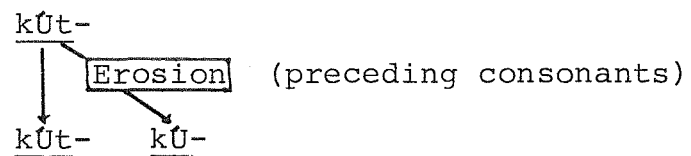
fémí ' kpèlu àwǎ̄ òlè 'Femi is one of the thieves',
 (Femi SHT be-included-among PL thief)

although it has lost certain verbal properties and is liable to undergo Loss in that function.

Non-functional split can frequently be interpreted as being the result of functional split: once a morpheme undergoes Desemanticization, for example, this tends to introduce formal processes like Cliticization, Affixation, Adaptation, Erosion, etc. (see 1.5). Its non-desemanticized counterpart, on the other hand, is unlikely to undergo such formal processes. The Ewe verb vá 'to come', for example, was desemanticized as a future marker and consequently underwent junctural Erosion to become -á-. In its lexical reading, vá has been retained in this shape, so that we are presented with the following case of formal split:



Phonetic split may, however, occur independently of functional processes. It can, for example, be caused by specific phonological contexts. The future marker kÚt- of the Kadam dialect of So, a Kuliak language spoken in Eastern Uganda, for example, underwent junctural Erosion to become kÚ- preceding consonants but is retained as kÚt- before vowels. Erosion thus was confined to one phonological environment and blocked in others, the resulting split being:



1.4.3.2 Shift

By functional shift we mean a complex process by which a given linguistic unit replaces its function X by another function Y. Our data from African languages suggest that this involves two simple processes: Desemanticization or Expansion, by which the relevant unit receives a second function (Y), and Loss, by which the erstwhile function (X) is abandoned.

The process of functional shift with reference to Desemanticization can be demonstrated using certain serial verb languages of the Kwa branch of Niger-Congo. In the Western languages there are preposition-like function words, referred to as 'verbids' by Ansre (1966), each having a verbal 'homophone', e.g.

me-du nú le afé me 'I ate at home' (le = preposition)
(I-eat thing at home in)

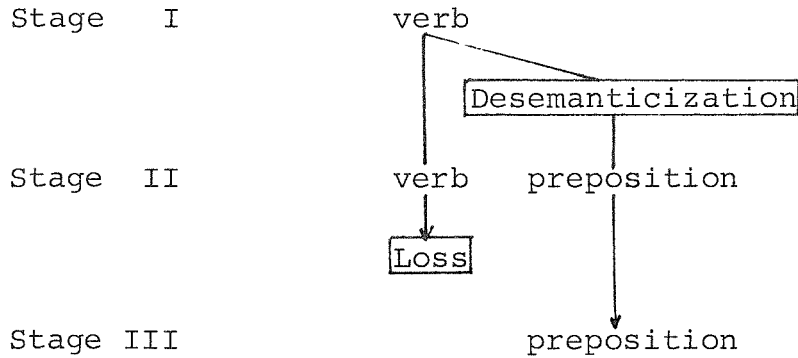
me-le afé me 'I am at home' (le = verb).
(I-be/at home in)

In Eastern Kwa languages like Yoruba and Igbo, however, such a homophone correspondence no longer exists¹⁾. Lord (1973: 279) gives the following summary of the situation:

"Locative prepositions are homophonous with Locative verbs in Ewe, Twi and Gã. The prepositions have developed historically from verbs in serial constructions. The Locative in a serial construction has lost its verb properties - it no longer takes tense-aspect and negation markers, and it no longer undergoes transformations that regularly apply to verbs - leaving us with a preposition. Yoruba and Igbo represent a later stage of a parallel historical development, where the homophonous Locative verb is no longer present."

1) Lord (1973: 275/6) notes that in Yoruba there is a verb ní 'have, possess, be at' corresponding to the preposition-like particle ní 'in, at'.

Although the last statement would seem to require qualification, we can assume for the present purpose that a 'homophonous' verb no longer exists in Yoruba and Igbo. The development referred to by Lord can be described graphically thus:



Thus, Desemanticization led to functional split into verb and preposition in the Western Kwa languages (Stage II). The Eastern Kwa languages Yoruba and Igbo, on the other hand, represent a later stage (III) where the verb is no longer present. The situation in these languages appears to be one of functional shift from verb to preposition, rather than one of functional split¹⁾.

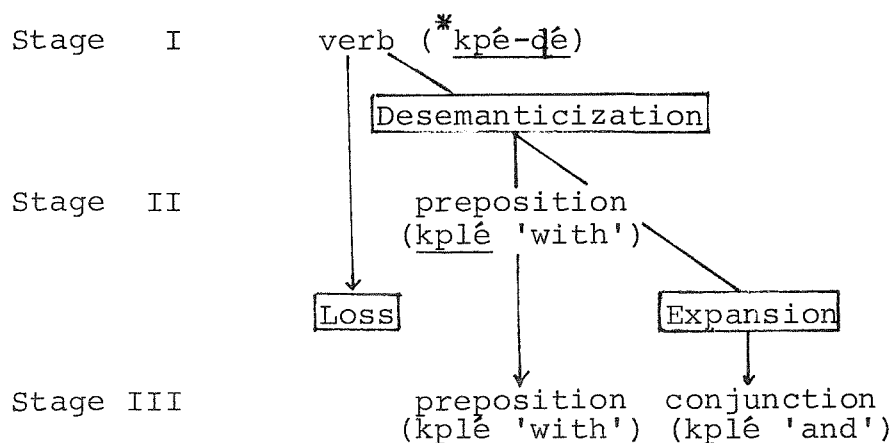
1) Similar instances of functional split have been reported from languages outside Africa. Clark (1979: 1-3), for example, notes with reference to Hmong, a language of Southwest China:

"There are demonstrable stages in the history of the derivation, in which a given word is used first only as a (main) verb, then as both a verb and a preposition, and finally only as a preposition. Some support for the universality of this process is in the cross-language similarity in the types of verbs which can become prepositions."

Her presentation in fact constitutes a typical case of functional shift:

<u>Stage</u>	<u>Category</u>
I (The word occurs only as a verb)	
II 1. (The word occurs both as a verb and as a preposition: the co-verb stage)	

Another example of functional shift following functional split concerns the function word kplé of Standard-Ewe (cf. Lord 1973: 283ff). This word goes back to a serial sequence kpé 'to meet' and dé, a defective verb meaning 'reach, arrive at' (Westermann 1905: 106, 295), which probably had the meaning of a comitative verb 'be included among' or 'be with'. The subsequent development can be presented graphically thus:



Accordingly, functional split must have occurred twice leading to the emergence of a comitative preposition (which, in addition, assumed the function of an instrumental and a manner preposition), and eventually of a coordinating particle conjoining NPs. It was the Loss of the erstwhile verb which gives us the impression that a functional shift verb → preposition (→ conjunction) took place.

The statements made about functional shift apply in much the same way to corresponding phonetic and morphosyntactic processes. A given morpheme may, for example, survive in its cliticized, adapted or eroded form but disappear in its original form. Shift as a purely non-functional evolution, however, appears to be rare; usually it is in some way or other a concomitant feature of functional shift.

1) ctd.)	Stage	Category
	II 2.	V Prep
	3.	(V) Prep
	III (The word occurs only as a preposition)	
	1.	- Prep
	2. (Renovation; see 1.3)	V ≠ Prep.

1.5 Chronological relations between types of processes

At the present stage of research, it would be premature to attempt a systematic description of the relationship existing between the three types of processes; such an endeavour would have to rely on more information on linguistic evolutions in Africa than is available at present. In this section, some impressionistic observations are presented; the generalizations that we offer at the end are, of necessity, highly tentative.

It would seem that Desemanticization is the process which is responsible for most other developments.

In Luo, a Western Nilotic language, the temporal adverbs nende 'earlier the same day' and nene 'some considerable time ago' gave rise to the growth of a past tense marker n(e)- (Stafford 1967: 27/8). The stages that mark this evolution are typical for many linguistic changes in Africa. The Desemanticization process from adverb to tense marker¹⁾ involved the following formal processes:

Permutation: The adverbs nende and nene moved from the clause-initial position, which is the basic position for adverbs, to that immediately preceding the verb, which is the position of tense/aspect markers.

Cliticization: The adverbs became verbal proclitics.

Erosion: nende and nene were reduced to n(e).

Affixation: The proclitic became a verbal prefix n(e)-.

1) This development is an example of functional split (see 1.4.3.1): although nene and nende have been desemanticized, they are at the same time retained as adverbs. Thus, they co-exist in both a grammaticalized and a non-grammaticalized form:

<u>Non-grammaticalized:</u>	<u>Grammaticalized:</u>
<u>nende otieno dhIyO kisumu.</u> (earlier Otieno went Kisumu)	<u>jotich n-OlOsO ndara.</u> (workmen PAST-repair way)
'Otieno was going to Kisumu earlier today.'	'The workmen repaired the road.'

This example suggests that processes leading to a change in function tend to be followed by certain phonetic or morpho-syntactic processes. A functional change is likely to trigger the process of Erosion as an example.

The personal pronouns (j)En 'he, she, it' and kEn 'they' in Nuer were eroded to E, pl. kE, respectively, when they developed into a copula (Crazzolara 1933: 89). Thus, the Desemanticization of these personal pronouns was followed by a phonetic process involving Erosion.

In Luo, monosyllabic words which have undergone Desemanticization have a "weaker" word boundary¹⁾ than other monosyllabic words. This is manifested in the fact that desemanticized monosyllabics lose ("delete") their final vowel before a vowel which is in a light syllable, while other monosyllabics do not. Thus, it would seem that in the case of these monosyllabics, the functional process of Desemanticization has triggered a phonetic process, i.e. peripheral Erosion. Note that in polysyllabic words, Erosion (i.e. vowel loss) has taken place throughout - irrespective of whether Desemanticization has taken place or not²⁾ (cf. Adhiambo 1981; see also Erosion 1.2.1.2.).

Antoine Meillet (1948: 138) in particular has pointed out that a word, once it has undergone Desemanticization (= mot accessoire), has a phonological evolution that is different from that of a non-desemanticized word (= mot principal).

1) It might be that we are dealing with an 'internal word boundary', rather than with a 'full word boundary' (cf. Hyman 1978: 462ff.).

2) The reason for this as Adhiambo (1981: 5) suggests, is probably, that final vowels in polysyllabic words are less distinctive and easier to dispense with than in monosyllabic words (cf. Erosion 1.2.1.2.).

"... les mots accessoires se trouvent dans des conditions particulières qui déterminent des prononciations particulières: leur éléments constitutants, étant abrégés et faiblement articulés, sont exposés à s'affaiblir ou à disparaître dans des cas où les éléments d'un mot principal subsistent intacts ou subissent des modifications tout autres."

While the above examples suggest an evolution from functional to phonetic processes, developments from functional to morphosyntactic processes are equally common.

In Ewe, the definite marker lá underwent Expansion and developed into a marker of the sentence theme¹⁾. In modern ("Standard") Ewe, lá²⁾ therefore has two contrasting functions, as evidenced in the following examples:

Theme: (1) nyónu lá é kpó e. 'As for the woman, he saw her.'
(woman TOP he see her)

definite: (2) nyónu lá kpó e. 'The woman has seen her.'
(Woman DEF see her)

lá marks definiteness in (2) but theme in (1). This functional split (see 1.4.3.1) triggered morphosyntactic split, Expansion was followed by Permutation: the definite marker is placed at the end of the noun phrase but it precedes the plural marker wó. lá as a marker of theme, on the other hand, moved to the NP-final position following the plural marker wó:

(3) nyónu-wó lá wó vá. 'As for women, they came.'
(woman-PL TOP PL come)

(4) nyónu-a²⁾-wó vá. 'The women came.'
(woman-DEF-PL come)

1) This development was probably due to the fact that since thematic constituents are likely to be definite, lá became an obligatory marker of the sentence theme.

2) As a definite marker, but not as a thematic marker, lá has the allomorph -a.

Thus, when lá became a thematic marker, this affected its order behaviour, i.e. the functional process must have been responsible for the morphosyntactic process of Permutation.

Hyman (1978: 451) suggests that morphosyntactic processes may cause phonetic processes like Adaptation to take place (if one assumes that there is a close correlation between the morphosyntactic status a morpheme has and the type of boundary it shares with other morphemes). Igbo has a vowel harmony rule which works across morpheme but not across (full or internal) word boundaries. Hyman (1978: 451) gives the following example:

"For the verb /bú/ 'carry on head', some will say [bútá] 'bring', and some will say [búté]. The reason is that the historical # of /bú # tá/ is becoming weakened to a +boundary¹⁾, the reason for this being that /tá/, formerly an independent verb, has become grammaticalized. Thus, /bú#tá/ is coming to be treated with /tá/ phonologically subordinated to /bú/."

We may say, thus, that it is the morphosyntactic process from verb to a 'more grammaticalized' unit which appears to be responsible for Adaptation, i.e. vowel harmony, to take place²⁾.

1) Hyman (1978: 462) establishes a scale of boundaries, which correlates with both their historical origin and their relative strength: (1) || = pause boundary, (2) # # = full word boundary, (3) # = internal word boundary, (4) + = morpheme boundary, and (5) ∅ = lack of boundary.

2) Carol Lord (1975: 44), in her treatment of Igbo compounds, notes:

"When a component moves from verb to suffix status, the semantic shift probably comes before the phonological assimilation; the shifted semantics are what allows the phonological assimilation to take place."

This and other examples discussed in the present paper suggest the following highly tentative generalizations on chronological relations between the three types of processes:

(1) Functional processes usually precede all other processes¹⁾.

(2) Morphosyntactic processes may trigger phonetic processes, but not vice versa. This does not mean, however, that phonetic processes necessarily follow morphosyntactic processes. There are examples which suggest that (syllabic) Erosion precedes Affixation.

(3) Of all three types, phonetic processes appear to be most strongly affected by other processes. Phonetic processes may, however, occur without being caused or influenced by other processes; they can, too, be responsible for Renovation.

1) A similar observation has been made independently by Lynchell Marchese (1978: 130) who notes:

"Venneman (1975) a suggéré que le changement phonologique précède le changement syntaxique. Dans nos exemples, il s'agit de la perte d'un morphème en fin de phrase (phénomène très naturel, du point de vue phonétique) et de quelques changements phonologiques dans la forme des auxiliaires. (...) Est-il vrai que, en effet, le changement phonologique a précédé le changement syntaxique (c.à.d. changement du verbe en auxiliaire)? Nous ne le croyons pas. Il semble que le changement sémantique ou syntaxique ait eu lieu avant le changement phonétique, et il est même fort possible que le changement sémantique ait précipité la réduction phonologique."

2 Some general observations on language evolution

2.1 The "morphological cycle"

2.1.1 Cycles or spirals?

The major topic discussed in this work concerns linguistic decay: it has been claimed that there is a largely, though not entirely, predictable evolution starting with semantically and syntactically autonomous linguistic units (lexemes) which, through grammaticalization, lose in autonomy and, eventually, may disappear altogether¹⁾. Since strongly grammaticalized or lost units tend to be replaced by new lexemes, the result is an evolutionary cycle.

Our assumptions on grammaticalization processes are not new; they were repeatedly proposed by 19th Century linguists. Georg von der Gabelentz noted in 1891 that "was heute Affixe sind, das waren einst selbständige Wörter, die nachmals durch mechanische und seelische Vorgänge in dienende Stellung hinabgedrückt wurden", and he therefore concludes that "alle Afformativen waren ursprünglich selbständige Wörter" (Gabelentz 1891: 250/1).

Instead of a morphological cycle, however, von der Gabelentz proposed a kind of morphological spiral:

"Nun bewegt sich die Geschichte der Sprachen in der Diagonale zweier Kräfte: des Bequemlichkeitstriebes, der zur Abnutzung der Laute führt, und des Deutlichkeitstriebes, der jene Abnutzung nicht zur Zerstörung der Sprache ausarten lässt. Die Affixe verschleifen sich, verschwinden am Ende spurlos; ihre Functionen aber oder ähnliche bleiben und drängen wieder nach Ausdruck. Diesen Ausdruck erhalten sie, nach der Methode der isolirenden Sprachen, durch Wortstellung oder durch verdeutlichende Wörter. Letztere unterliegen wiederum mit der Zeit dem

1) While von der Gabelentz (1891:251) refers to grammaticalization as Abnutzung (abrasion), Meillet (1948) uses a number of notions, in particular affaiblissement (de la prononciation et de la signification) and dégradation.

Agglutinationsprocesse, dem Verschleiffe und Schwunde, und derweile bereitet sich für das Verderbende neuer Ersatz vor: periphrastische Ausdrücke werden bevorzugt; mögen sie syntaktische Gefüge oder wahre Composita sein (englisch: I shall see, - lateinisch videbo = vide-fuo); immer gilt das Gleiche: die Entwicklungslinie krümmt sich zurück nach der Seite der Isolation, nicht in die alte Bahn, sondern in eine annähernd parallele. Darum vergleiche ich sie der Spirale" (Gabelentz 1891:251).

A position very similar to that of von der Gabelentz has been maintained by Antoine Meillet (1912; quoted from Meillet 1948:131-148). According to Meillet, there are two processes in the evolution of grammatical forms: analogical innovation (innovation analogique), which corresponds to both Expansion and Simplification, and grammaticalization (l'attribution du caractère grammatical à un mot jadis autonome), which essentially refers to Desemanticization, and more peripherally, also to processes such as Compounding, Cliticization and Erosion. These two processes, he notes (1948:131), "sont les seuls par lesquels se constituent des formes grammaticales nouvelles. Les faits de détails peuvent être compliqués dans chaque cas particulier, mais les principes sont toujours les mêmes."

On the basis of differences in grammaticalization, Meillet distinguishes between mots principaux (i.e. ceux qui indiquent les idées essentielles pour lesquelles est faite la phrase) and mots accessoires. While the former are words that have not been grammaticalized, the latter are in most cases words which have undergone Desemanticization plus one or more other processes¹⁾, i.e. both formal and functional processes²⁾.

1) Meillet treats the word petits as mot principal in a sentence like apportez le petit paquet but as mot accessoire in laissez venir à moi les petits enfants.

2) "Or, de ce qu'un mot est accessoire, il résulte deux sortes d'altérations, les unes touchant le sens, les autres touchant la prononciation." (Meillet 1948:135)

Our notion of functional split (see 1.4.3) is implied in his discussion on the coexistence of mots principaux and mots accessoires (p. 134/5), he presents patterns of linguistic evolution which closely correspond to our processes of Compounding, Cliticization, Erosion, Desemanticization, and Simplification, and he points out the correlation between morphosyntactic and functional processes (1948:139):

"L'affaiblissement du sens et l'affaiblissement de la forme des mots accessoires vont de pair; quand l'un et l'autre sont assez avancés, le mot accessoire peut finir par ne plus être qu'un élément privé de sens propre, joint à un mot principal pour en marquer le rôle grammatical. Le changement d'un mot en élément grammatical est accompli."

Meillet adopts the spiral hypothesis although he does not refer to von der Gabelentz, nor does he substantiate why he proposes a spiral; his presentation would seem to be more suggestive of a circle than a coil, e.g.:

"Les langues suivent ainsi une sorte de développement en spirale: elles ajoutent des mots accessoires pour obtenir une expression intense; ces mots s'affaiblissent, se dégradent et tombent au niveau de simples outils grammaticaux; on ajoute de nouveaux mots ou des mots différents en vue de l'expression; l'affaiblissement recommence, et ainsi sans fin." (Meillet 1948:140/141)

There is in fact some evidence to suggest that we are dealing with a spiral rather than a cycle: Renovation (see 1.3), i.e. the introduction of new or frozen lexical material, usually takes place before the existing grammatical element has disappeared. The new function marker therefore is likely to be grafted on the old one, and although the latter may lose its function, its phonetic substance, or part of it, tends to be retained in some way or other¹⁾.

There are, on the other hand, examples from African languages indicating that Renovation can take the form of straight-

1) For examples see 2.1.2 below.

forward replacement, in that the old function marker is lost entirely and the resulting gap is filled by a newly introduced marker¹⁾. In such cases there would seem to be some justification to talk of cycles rather than of spirals. More research is needed on this point; for our discussion, however, it is of secondary importance. The term "morphological cycle" will be used in the following paragraphs in a very general sense, referring to both cyclic and spiral-like evolutions.

The term (linguistic) cycle has been proposed with reference to both the evolution of languages, i.e. of entire language structures (cf. Hodge 1970), and to individual evolutions within a given language involving specific grammatical elements. Our use of this term is strictly confined to the latter²⁾. Although clusters of individual evolutions suggesting an overall evolutionary drift for a given language may be observed, these are not the topic of the present paper (but see 2.1.6), they will be reserved for a typological discussion.

1) Such examples can be found in particular in pidginization contexts. In Kenya Pidgin Swahili, for example, the demonstrative ile 'that' has assumed the function of a (definite) relative clause complementizer, replacing all previous types of complementizers based on the 'reference' marker -o (cf. Heine 1973:115).

2) Cf. Jespersen (1922:424/5): "Now, it is often said that the history of language shows a sort of gyration or movement in spirals, in which synthesis is followed by analysis, this by a new synthesis (flexion), and this again by analysis, and so forth.... But this pretended law of rotation is only arrived at by considering a comparatively small number of phenomena, and not by viewing the successive stages of the same language as wholes and drawing general inferences as to their typically distinctive characters..."

2.1.2 "Recursive" cycles

The idea of a morphological cycle or spiral has repeatedly been criticized. More recently, a position challenging the relevance of such a cycle has been presented by Jeffers and Zwicky (1980). The evidence adduced by these authors, however, is not convincing in every respect, in particular since they rely mostly on reconstructed, rather than actual language, evidence. However, they are able to demonstrate that treating unidirectionality and the morphological cycle as an evolutionary "law" would be unjustified.

Once a lexeme has developed into a function word through Desemanticization and the function word is further grammaticalized (i.e. semantically and syntactically "bleached"), another lexeme of the same meaning tends to be recruited to take the place of that function word, thus introducing a new morphological cycle. In the present section, some examples are presented to demonstrate the 'recursive' nature of this development.

Carol Lord (1976:183ff) has provided a case of recursiveness involving the Desemanticization of verbs meaning 'say' as complementizers. Her examples concerning Efik and Yoruba suggest that at least three consecutive cycles may be reconstructed. For Yoruba, these cycles are (cf. Lord 1976:184; Bamgbose 1966):

1st cycle: The verb kpé 'say' is desemanticized to a complementizer:

ó sɔ kpé adé lɔ 'He said that Ade went.'
(he say (say) Ade go)

2nd cycle: Another verb, wí 'say' takes the place of kpé and undergoes Desemanticization in the same way as kpé did. Since kpé is not lost, the two undergo Compounding:

ó sɔ wí-kpé adé lɔ 'He said that Ade went.'
(he say (say-say) Ade go)

3rd cycle: The above examples indicate already the possibility of an emerging 3rd cycle, in that another verb, sɔ 'say', turns up, which appears to be the next candidate to be desemanticized. The end of this recursive development is described by Lord thus: "But sɔ wí-kpé is literally 'say say-say'. This kind of proliferation has to be stopped at some point, so Yoruba speakers often simply use ní, another word for 'say'...", e.g.

ó ní adé lɔ 'He said that Ade went.'
(he say Ade go)

An example involving the grammaticalization of the verb 'finish' as a perfect marker has been presented by Erhard Voeltz¹⁾ (1980:490/1) which suggests that a cycle can be repeated several times. In the development from Benue-Congo to modern Kenya Pidgin Swahili, we may distinguish the following cycles:

1st cycle: The verb ⁺gid 'finish' is placed after the main verb to form perfect actions. This construction is retained in Mambila (the reflex of ⁺gid in Mambila is gi(l)):

me ndəb kɛl gi
(I granery tie finish)

(Meyer 1939/40; quoted from Voeltz 1980:
489)

⁺gid receives the past suffix -e in the Bantu languages, so that the form ⁺gide results which becomes a perfect marker, undergoes affixation, and is lost in some languages.

2nd cycle: Another verb ⁺mad- 'finish' is introduced in Bantu languages to form a new source of perfect markers.

1) The present discussion is a shortened and slightly adapted version of that presented by Voeltz.

In Swahili, mal- (← ⁺mad-) was fused with the suffix ⁺-ile, which goes back to ⁺gide, to become meele and eventually, through syllabic Erosion, the perfect marker me- of modern Standard Swahili.

3rd cycle: In Kenya Pidgin Swahili, as well as in most other pidgin varieties of Swahili, the perfect prefix me- is lost, and its position is taken by the verb kw-isha 'finish' (kw- = infinitive, -isha = verb stem).

While -isha or -kw-isha, suffixed to me-, tends to be used in Standard Swahili as well to form perfective actions, e.g.

a-me-kw-isha fika 'He has (already) arrived',
(he-PERF-INF-finish arrive)

it is usually the only perfect marker in Kenya Pidgin Swahili, occasionally preceded by the present marker na-, e.g.

yeye (na-)kwisha fika 'He has arrived'.
(he (PRES) PERF arrive)

Once a cycle is completed, or nears completion, Renovation (see 1.3) comes in and introduces a new cycle. This, however, does not necessarily mean that the new marker replaces the old one. Usually, the two co-exist for some time, as the Yoruba example ó sɔ wí-kpé adé lɔ (see above) suggests. The sentence a-me-kw-isha fika of Standard Swahili even shows that up to three cycles can be retained phonetically. However, both the Yoruba and the Swahili example point to the same final outcome: the languages tend to eliminate the old markers since they have become redundant.

2.1.3 Uni-directionality

Although the present approach is based on the assumption that language development is uni-directional, there is evidence to suggest that this evolution is not without exceptions: under certain circumstances, basic processes can be reversed. It is in particular the following instances which suggest that the uni-directionality principle may be violated:

(1) Linguistic units which have undergone Desemanticization can be re-semanticized.

In Somali, the adjectival kale 'another', which is a lexical morpheme, appears to be derived from a combination of three non-lexical morphemes through Merger: the preverbal case markers ka- (ablative) and la- (comitative), and the de-nominal derivative suffix -leh ('being, having') (Lamberti, p.c.).

(2) Decliticization

Jeffers and Zwicky (1980: 223/4) call attention to a phenomenon they refer to as decliticization whereby a clitic emerges, or re-emerges, as an independent word. They claim, for example, that in the early Indo-European dialects the finite verb could occur in unaccented clitic position in a clause, whereas every modern Indo-European SVO language as an accented finite verb system derived from "the ancient system whose members so commonly occurred in clisis" (Jeffers/Zwicky 1980:224). Although the evidence they adduce has to be taken with caution since it involves reconstructed, and hence hypothetical data, the possibility that decliticization in fact occurs cannot be ruled out. In Africa, no cases have been reported so far.

(3) An inflectional structure assumes a less grammaticalized function. Thus, the evidence available suggests that inflections expressing subjunctive moods are more grammaticalized than those expressing tense; it is, for example, easier to conceive that a past tense marker develops through Expansion into a subjunctive marker than the other way round. Yet, in Lat-

in, the opposite appears to have occurred: there is a development from subjunctive to future inflections:

"... en latin par exemple, des formes comme erit ou dicet qui, de par leur origine, sont des subjonctifs, ont pris la valeur de futur et n'ont même plus d'autre valeur en latin à l'époque historique..." (Meillet 1948: 145).

An argument against the uni-directionality principle has been raised by David W. Lightfoot (1979: 224):

"Instead of this development of major to minor category¹⁾, a reverse process might have taken place. After all, historical records show that the Romance languages underwent two kinds of changes, moving at one stage from 'synthetic' to 'analytic' morphology, and at another stage in the reverse direction. Thus the synthetic Latin tense amabo became the analytic Spanish amare he, which in turn became re-synthesized as amare."

According to our understanding it is doubtful whether this in fact can be considered as a 'reverse process' of linguistic evolution. After all, the relevant development may be interpreted in the following way: the Latin suffixal structure was lost (cf. Loss 1.2.1.4) and replaced by a periphrastic construction infinitive + 'have' which underwent Cliticization, Affixation and Erosion, thus completing the morphological cycle.

Thus, neither this nor any other evidence produced by Lightfoot can be regarded as relevant to the uni-directionality hypothesis. The Spanish example can rather be considered as corroborating our claim on the cyclic nature of morphological change which, in Lightfoot's wording involves a development from 'synthetic' to 'analytic' and eventually again to 'synthetic' morphology.

1) With this, Lightfoot refers to claims made by authors like Hyman, Lord, Pike and Schachter according to whom categories change from serial verbs to prepositions and complementizers etc.

2.1.4 Morphological explicitness and "expressiveness"

In Heine (1980a) a distinction between implicit and explicit word categories has been proposed. The former offer little or no information on their morphosyntactic and semantic properties - such information usually, though not necessarily, being provided by the linguistic or extra-linguistic context. Explicit word categories, on the other hand, contain overt expression of their morphosyntactic and semantic characteristics¹⁾. It seems possible to correlate the linguistic evolution that can be observed within a morphological cycle with specific types of morphological explicitness. The following idealized stages of evolution may be distinguished:

<u>Stage</u>	<u>Morphological expression</u>	<u>Explicitness</u>
I	zero (except perhaps for remnants of fossilized affixes)	implicit structure
II	introduction of a free morpheme used optionally for "emphatic" expressive purposes	implicit structure plus optional explicitness
III	the free morpheme becomes a clitic and eventually an affix whose use is obligatory except in cases where it would be redundant	explicit structure, except for cases where explicit marking would be obviously redundant
IV	the affix is generally used, even if redundant	explicit structure throughout
V	the affix is fossilized and eventually lost	decreasing explicitness
VI = I		

1) In the case of nominal categories, such characteristics relate in particular to number, noun classification, case, and definiteness, while in the case of verbals they include the marking of anaphoric reference, tense, aspect, mood, and verbal classification.

In this outline of a "typical" cycle, allusion is made to the rôle played by "emphatic" or "expressive" structures in the introduction of new cycles. There are, in fact, indications that cycles tend to start with such structures. This has been hinted at by a number of earlier writers. Meillet, for example, notes (1948: 139; 147):

"Mais ce qui en provoque le début, c'est le besoin de parler avec force, le désir d'être expressif... Quand on veut s'exprimer avec force, on donne à chaque notion une expression séparée; on ne dit pas "je ferai", mais "j'ai la volonté de faire" ou "il faut que je fasse" ou "je suis sur le point de faire"; il ne s'agit pas ici de logique, mais de sentiment à rendre et d'action à exercer sur un interlocuteur. Et si je veux faire, je dois faire, je vais faire n'expriment plus nettement la volonté, la nécessité, la proximité, c'est que du fait du groupement ordinaire, les valeurs expressive, et qu'ils sont devenus de simples auxiliaires en attendant qu'ils fassent corps avec l'infinitif suivant."

What exactly is meant by expressive structures is open to question. As Givón (1979a: 208ff; see 2.1.6 below) has shown, pragmatics forms an important source for the rise of new syntactic patterns - and for explicit morphology. However, it accounts only for a small part of the explicit structures that we observe in African languages. With regard to most other structures, we are not able to proceed much beyond the position held by scholars like von der Gabelentz or Meillet. Much further research is needed on this point.

2.1.5 The linguistic catastrophe theory

In accounting for dramatic changes in linguistic evolution like the one that occurred in the development from Old Irish to the modern Celtic languages, Cram (1979) suggests that we are dealing with a "linguistic catastrophe", leading to "a long-term restructuring of the same magnitude as pidginisation, but which is internally rather externally induced". By this evolution, predominantly inflectional verbal systems are replaced with ones that are essentially isolating in character.

Catastrophe theory originated as a branch of pure mathematics (Thom 1975) and has found application in various other disciplines. According to Cram (1979: 5), a linguistic catastrophe is said to occur when a series of minor historical changes has a cumulative effect which results in a major shift in the overall direction of the restructuring of processes on a macro-historical level. With regard to Celtic, the following changes in particular are cited to demonstrate the presence of a linguistic catastrophe:

- (1) the introduction of periphrastic verbal forms leading to a syntactic change from V-S-O to Aux-S-V-O, and
- (2) stress shift, leading to a weakening of final syllables, which resulted, e.g., in the merger of the future with other tenses.

None of these are unusual or rare examples of grammaticalization. (1) represents a very common procedure of introducing new aspects and tenses (see 3.), and (2) is a widespread effect of peripheral Erosion (see 1.2.1.2), and, possibly, of Simplification. Thus, there does not seem to be any need to have recourse to the catastrophe theory in order to account for such almost universal grammaticalization phenomena.

There are, however, some observations that suggest that a sort of "linguistic catastrophe" may indeed happen at a certain stage of the evolution of languages. The development from Old Irish to the modern Celtic languages is an example, and so is the development from Latin to the modern Romance languages, or from classical Arabic to the various present-day varieties

of Arabic. This "catastrophe" leads from an inflexional or agglutinating to a predominantly isolating/analytic structure. In our view, "linguistic catastrophes" of this type simply constitute examples of massive Renovation (see 1.3). Whether it is only internal forces that are responsible for such morpho-syntactic transformations¹⁾, or whether external factors -- e.g. areal linguistic or sociolinguistic phenomena -- are also involved, is a matter of further research (cf. Versteegh 1981). For the time being we will follow Cram in assuming that such macro-historical transformations are primarily internally induced.

Renovation of this kind appears to be characteristic of highly grammaticalized languages which in their verbal and nominal morphology approach the end of the grammaticalization scale. Such languages have undergone large-scale Affixation, and in most cases also Fusion and Fossilization. Renovation may be triggered by one or more of the following factors:

(1) Erosion leads to the reduction or loss of phonological entities word-finally for example. This may affect suffixes expressing gender, number, case, tense or personal deixis, to the extent that distinctions marked by these suffixes are no longer upheld and that entire paradigms collapse. Renovation is then used as a means of re-introducing lost distinctions, leading for example to the following morpho-syntactic changes:

- case endings are replaced by prepositions,
- the function of gender distinction is transferred to demonstratives or other determiners,
- suffixal personal pronouns are replaced by self-standing pronouns,

1) Cram (1979:1) claims that we are dealing with internally induced restructuring, while pidginization involves externally induced restructuring.

- the function of tense/aspect distinctions is taken over by periphrastic constructions of the type

Aux - Prep + nominalized verb¹⁾

(2) Fusion has the effect of eliminating the boundary separating two adjacent morphemes. In order to maintain a distinction between the morphemes concerned, additional words may be introduced. If a set of personal pronouns fuses with a tense or aspect marker, the language may choose another set of pronouns to maintain a distinction of personal deixis on the one hand and between person and tense on the other.

(3) Fossilization may lead to the break-down of productive patterns of derivation and/or inflection. Through Renovation, new "regular" patterns, in particular periphrastic constructions, are built up. In this way, for example, the ancient prefix conjugation was replaced by a periphrastic structure (suffix conjugation) in most Cushitic languages.

2.1.6 Givón's approach to "syntacticization"

Probably the most successful attempt to describe and explain grammaticalization has been made by Talmy Givón (e.g. 1971a, 1971b, 1975, 1979, 1979a). It is his work which aroused our interest in problems of diachronic morphosyntax²⁾, and the present paper could not have been written without his pioneering studies.

In order to explain syntax as a structural level of its own, one must, according to Givón, make reference to a number of substantive explanatory parameters of language. He is able to demonstrate that pragmatic discourse structures develop in-

1) Depending on the word order structure of the relevant language, AUX can be phrase-finally, rather than -initially, and instead of prepositions, postpositions may be employed.

2) Givón's critical review (1979) of Heine (1976) first challenged us to deal with his work in more detail (cf. Heine 1980c).

to grammaticalized syntactic structures, which again erode via "morphologization" and "lexicalization", the result being a cyclic wave of the following kind:

(1) discourse → (2) syntax → (3) morphology →
 (4) morphophonemics → (5) zero.

Givón's analysis is concerned mainly with the first two steps of this cycle, which are motivated by communicative needs, i.e. from (1) to (2), and from (2) to (3). The other steps are said to be motivated largely by phonological attrition (Givón 1979a: 207-209). He gives the following examples for the development from (1) to (2): from topic to subject, from topicalization to passivization, and from topic sentence to relative clause.

The development from (2) to (3) relates to a process by which looser, sentential constructions are condensed into tighter syntacticized structures. His examples concern amongst others the development from paratactic to tighter subordinate patterns in the verb phrase, or from two verbs to one complex verb¹⁾.

Givón offers a convincing approach for dealing with what he refers to as syntacticization processes. However, a number of problems remain unsolved, some of which may turn out to be crucial in further discussions on grammaticalization. These relate for example to the following:

(a) His treatment gives the impression that discourse structure forms the only, or at least the main, source of syntacticization. Although he presents impressive evidence to support this view, there remains a substantial body of data where the discourse hypothesis fails. Our observation on syntactic reanalysis for example (see 2.2.3) suggest that grammaticalization may be introduced simply by exploiting an

1) For more details, see Givón 1979a: 213ff.

existing syntactic structure in order to express a new semantic function. As far as we can see, discourse structure is not involved in most cases.

(b) Givón tends to assume that essentially the same evolution can be claimed for both inflectional and derivational morphologies. This is not corroborated by our findings (see 3.3 below). Similarly, his understanding of "inflectional morphology" would seem to require qualification. For example, he cites the fact that verbs "become grammaticalized as case-markers, eventually becoming bound to their respective nominal arguments" (Givón 1979a: 220) as an example of the rise of noun inflections. Neither his own evidence nor any other data known to us indicate that the development from verb to case marker indeed leads to the emergence of noun inflections.

These as well as a number of other points that could be added are in no way intended to belittle the merits of Givón's work. Perhaps his main achievement is to have demonstrated convincingly that any attempt at explaining grammar must remain incomplete unless it takes diachronic processes into consideration (cf. Givón 1979a: 235-269). This claim will be further discussed in the following section (2.2).

2.2 Some problems of descriptive linguistics

A study of the patterns of linguistic evolution is in particular relevant to our understanding of the diachronic behaviour of languages. For example, phonological development can be influenced by the stage of grammaticalization that a word has undergone. Meillet (1948: 138), for example, has pointed out that desemanticized words (mots accessoires) may follow sound changes that differ from those of non-desemanticized words (mots principaux)¹⁾. A more important factor is that the analysis of regularities in linguistic evolution may offer us new clues to diachronic reconstruction. Givón's attempt, for example, at interpreting morphology as "frozen syntax" (cf. Givón 1971a, 1971b) is one step in this direction. More examples are provided in various parts of this paper.

In the same way, however, the study of linguistic evolution may shed some light on certain aspects of synchronic language structure - and in this way be of use to language description. In the present chapter, some examples are provided to illustrate the relevance of evolutionary processes to our understanding of language structure, as well as to a more diversified approach to linguistic description and explanation.

1) "L'histoire des langues montre que, par suite, les mots accessoires ont des traitements phonétiques aberrants. On a souvent invoqué contre le principe de la constance des "lois phonétiques" les traitements spéciaux que présentent les mots accessoires. L'argument ne porte pas, on le voit; les mots accessoires se trouvent dans des conditions particulières qui déterminent des prononciations particulières: leurs éléments constitutifs, étant abrégés et faiblement articulés, sont exposés à s'affaiblir ou à disparaître dans des cas où les éléments d'un mot principal subsistent intacts ou subissent des modifications tout autres." (Meillet 1948: 138)

2.2.1 Evolution and synchronic description

Although both the goals and findings of evolutionary studies tend to be the same as those of descriptive linguistics, this is not necessarily so: they may in fact be in sharp contrast with one another.

The following example may give an impression of the extent to which descriptive adequacy can be at variance with observations of evolutionary typology. In their grammar of Maasai, Tucker and Mpaayei (1955: 123) list a verbal derivative suffix -u¹⁾ which they call the "motion towards" form. This suffix, which we refer to as the venitive (see Heine 1980b: 124), denotes movements towards the speaker or deictic focus. When followed by another derivative suffix, though not when followed by an inflectional suffix, -u has the allomorph -un, e.g.

<u>a-shuk</u>	'to return s.th.'
(INF-return)	
<u>a-shuk-u</u>	'to return s.th.'
(INF-return-VEN)	
<u>a-shuk-un-ye</u> ²⁾	'to come back here'
(INF-return-VEN-INTR)	

(cf. Tucker/Mpaayei 1955: 150).

From a descriptive point of view, it would seem justified to treat -u as the basic form since it occurs in all contexts except preceding other derivative suffixes, whereas -un may be interpreted as a secondary form whose occurrence is confined to one specific context. Tucker and Mpaayei's approach suggests that they indeed favoured such a solution.

1) This morpheme is subject to vowel harmony. If preceded by 'open' (-ATR) vowels its shape is -u, otherwise it is -u.

2) The morphological segmentation made by Tucker and Mpaayei is not consistent. Occasionally, they erroneously segment the derivative sequence -un-ye as -u-nye.

Using an evolutionary approach like the one proposed here, however, a different interpretation emerges. The derivative suffix -u/-un has an Eastern Nilotic verb ⁺pwon 'to come' as its lexical source which underwent Cliticization and Erosion (⁺pwon → un), and eventually Affixation accompanied by a Desemantici- zation process, thus leading to the emergence of the verbal de- rivative suffix -un which is attested for all Eastern Nilotic languages. As a result of a second Erosion process, -un was re- duced to -u word-finally. This development, which must have occurred during the Proto-Eastern Nilotic period, had differing effects on the various modern Eastern Nilotic languages: the process -un → -u affected the singular imperative in Bari (Spagnolo 1933: 143), the imperative and the perfect, but not the other tenses, in Turkana (Heine 1980b: 76), and all environ- ments other than that preceding derivative suffixes in Maasai and other Maa dialects.

Such a comparative approach, which is based on a diachron- ic analysis, may be of little use to the linguist who is con- cerned with the synchronic description of a given language, as our Maasai example shows. It is, on the other hand, not entire- ly useless. If a morpheme has two allomorphs which differ only by the fact that one has undergone Erosion while the other has not then there would seem to be some advantages in choosing the one without Erosion as basic. With reference to the Maasai ex- ample we may say that it is easier to phonologically account for the loss of a consonant rather than for the fact that a consonant n is added in one specific environment.

A problem that might turn out to have a deeper implication for our understanding of synchronic language structure con- cerns the relationship between grammaticalization and rule ordering. It frequently turns out that rule ordering reflects common evolutionary sequences.

Thus, rules relating to Adaptation usually precede Erosion rules. In the following example from Maasai phonology, there are two rules at work (cf. Wallace 1981: 77/8):

- (1) Low Vowel Raising: in certain suffixes /a/ is raised to /o/ if the vowel of the preceding morpheme is close (= /+ ATR).
- (2) k-Deletion: /k/ is deleted between identical non-high back vowels.

While (1) involves progressive vowel assimilation, and hence Adaptation, (2) is an example of Erosion. (1) has to be applied before (2), otherwise ungrammatical forms would result. We thus notice that Adaptation precedes Erosion:

+a-ibok-a
(I-prevent-EVENTIVE)

Adaptation (1): +a-ibok-o

Erosion (2): a-ibo-o 'I have prevented it'.

There are, however, other examples where the relationship between the patterns of evolution and rule ordering systems is more complex and needs much further investigation.

2.2.2 Functional split and the emergence of "hybrid words"

One problem that has been the subject of various controversies in African descriptive linguistics concerns the categorial status of certain classes of morphemes. These morphemes combine properties of two different word or morpheme categories, and linguists therefore disagree as to whether they should be allocated to category X or Y, or whether they belong to neither and therefore should be treated as forming a category of their own.

In a number of West African Kwa languages, for example, there are words which in certain respects behave like verbs and in others like prepositions (cf. Ansre 1966). Furthermore, there are words which have characteristics of both verbs and adverbs (cf. Bamgbose 1974: 38-41). Even more common is the problem of certain groups of nominals in many African languages which behave like nouns in one way and like adpositions in another. Similarly, in a number of languages there are morphemes which may be treated as either verbal auxiliaries or tense/aspect markers.

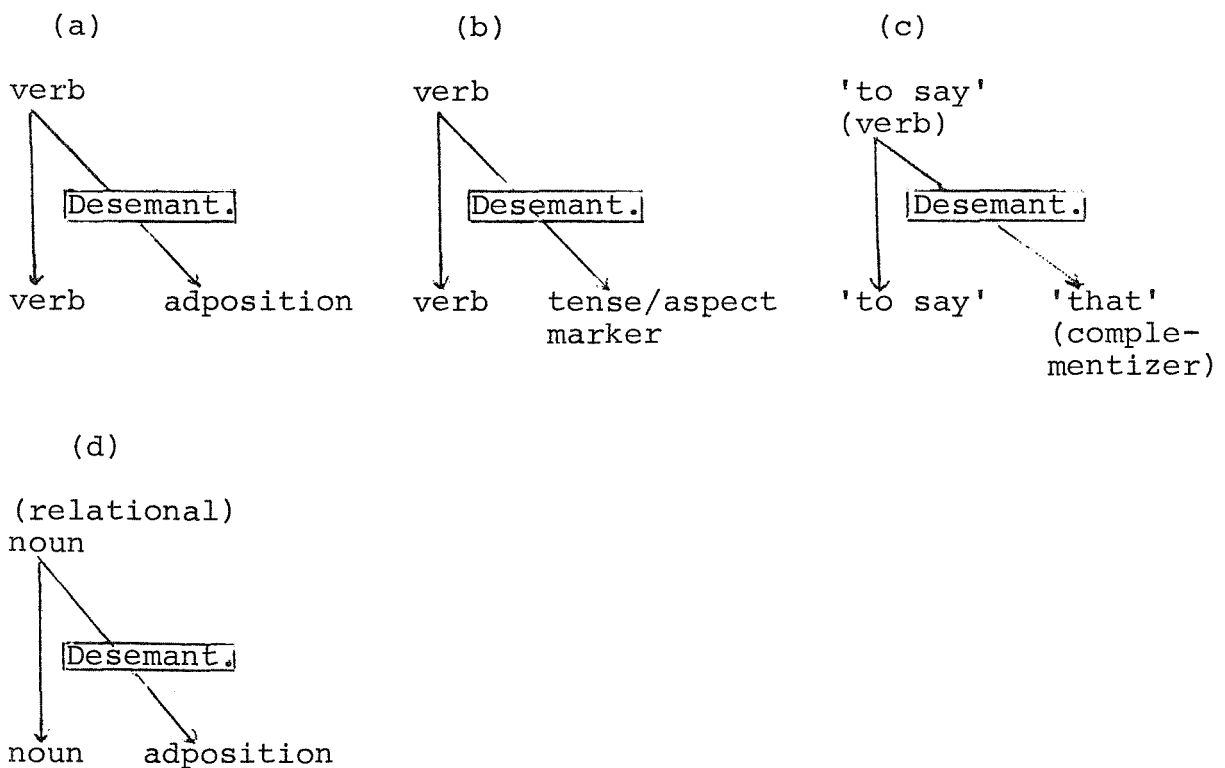
A common way of handling this problem in grammars of African languages is to state that category X contains a set of words/morphemes which are homophonous with corresponding forms belonging to category Y. Whether there is some principle underlying this homophony usually remains unclear.

Meillet (1948: 134/5) was referring to this problem when he noted that one and the same linguistic unit may occur in one context as a mot accessoire (= desemanticized word) and in another context as a mot principal (= non-desemanticized word).

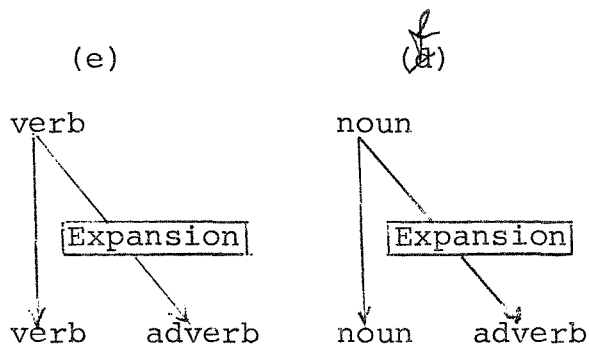
Although we are not in a position to solve such descriptive problems through evolution studies alone, they can, nevertheless, be of help in understanding the mechanism that gave rise to these structures. In most cases, we are dealing with instances of functional split, which happens when a linguistic unit A un-

dergoes a certain process to become B. This does not mean that A is eliminated in its original status: it is retained, at least for some time, so that there are two co-existing forms which differ from one another in their degree of grammaticalization. B tends to remain a "hybrid" for a certain time since, although having a new status, it retains some phonological and/or morphosyntactic properties from the period of time when it was A.

In most cases, the process involved is Desemanticization: functional split leads to the emergence of function words. The following are examples of common developments e.g. in West African serial verb languages:



In other cases again, the process that is responsible for the emergence of hybrid word categories is Expansion, whereby a morpheme changes its functional status without being semantically "emptied". Examples from African languages are:



The exact categorial status of the morphemes in question depends on whether the relevant process has been completed or not. If it has, then the two "homophones" may be said to belong to different word/morpheme categories. Thus, the Ewe morpheme ná has developed into two different word units: in its non-desemanticized form it is a verb ('to give'), whereas in its desemanticized form it is a dative/benefactive preposition. The relationship between the two units is one of grammaticalization: the preposition ná is a desemanticized variant of the verb ná.

Ansre (1966: 31/2) notes that there are five words¹⁾ in Ewe which behave like ná, and he discovered words with similar semantic properties in Twi, Gã and Adangme. He proposes to call these words 'verbids' in order to distinguish them from verbs. 'Verbids' differ from verbs in that they lack verbal properties like showing agreement in polarity (Aff./Neg.), aspect and tense with the verbs of the clause in which they occur. Instead, they "combine with nominals to form adverbial groups" (Ansre 1966: 32); in other words, they behave like prepositions.

The justification for referring to these words as 'verbids' remains unclear²⁾. Ansre (1966: 31) notes that "'verbids' re-

1) He actually lists six words, but one, kplé 'with', has no verbal homophone and is therefore to be excluded here. Note, however, that even kplé has a verbal source: it is derived from a combination of the verbs ⁺kpé 'meet' and ⁺dé 'get to' (see Westermann 1905: 295).

minds us of the close resemblance between itself and the verb", on the other hand he warns us that "we should not appeal to history to link the two - verbid and the verb. Nor can we prove any case based on such a claim. Too often, over-emphasis on phonological similarity has led to a blurring of grammatical detail." It seems that by choosing the term 'verbid' Ansre did exactly what he wanted to avoid, since the only meaningful way of describing the relationship between his 'verbids' and their verbal 'homophones' is by having recourse to the history of their development. He admits that the 'verbids' could be called prepositions but decides to reject this term: "'Prepositions' could be used, but then a distinction between it and the other items, e.g. postpositions, would have to be made" (Ansre 1966: 31). There is at least one clear-cut way of making such a distinction: prepositions precede while postpositions follow the NP.

If, on the other hand, a process has not yet been completed then it is not possible to unambiguously establish a morpheme/word boundary between the two 'homophones'; the two constitute morphosyntactic hybrids.

2) Marybeth Clark (1979: 1) uses the term 'coverb' for a similar category in Hmong, a language of Southeast Asia: "A coverb is a preposition which has a synchronic corresponding verb which is homophonous and broadly synonymous with the preposition." Her diachronic interpretation of this phenomenon is largely identical with the one proposed here.

2.2.3 Syntactic implications of grammaticalization

2.2.3.1 From lexical to syntactic reanalysis

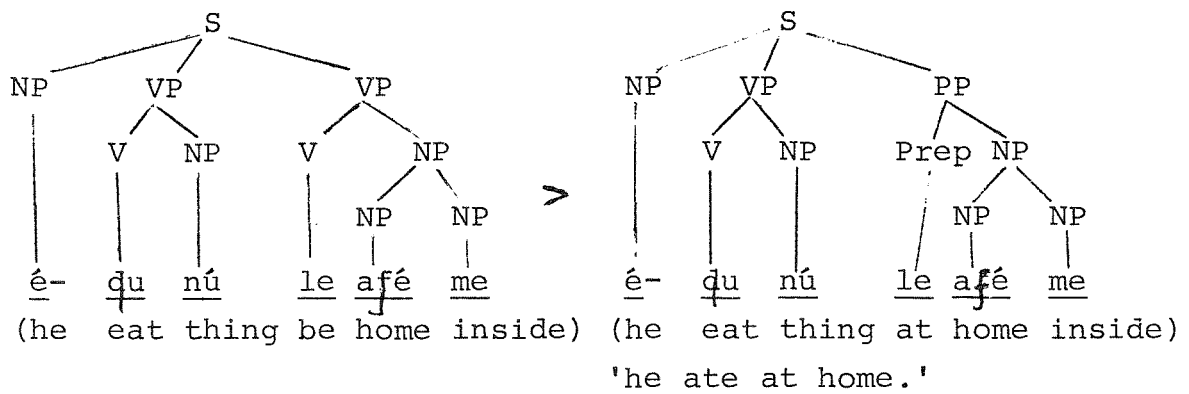
According to Christian Lehmann (1980), one of the main effects of grammaticalization can be seen in the decrease of syntagmatic variability. The more processes a linguistic unit undergoes, the more it loses in syntactic flexibility, i.e. the more restricted is the number of syntactic contexts in which it can occur. Thus, the syntactic flexibility of a verb is reduced when it develops into an auxiliary, and it is even more reduced when it becomes an aspect affix. Syntactic flexibility becomes zero once the relevant unit has undergone Fossilization.

But this is only one aspect of grammaticalization. The fact that a linguistic unit undergoes a process of grammaticalization is likely to have various syntactic implications. Such implications may relate to the relevant unit only, but they may, as well, relate to entire sentence structures. Processes differ as to the extent to which they affect existing syntactic structures. Some, like Desemanticization or Expansion, involve remarkable syntactic transformations while others, like Adaptation or Erosion, are syntactically largely irrelevant.

In the following, some syntactic effects of grammaticalization are discussed. Our discussion is by no means exhaustive, it is rather meant to be an exemplification of the ways grammaticalization may affect syntax. More examples can be found in various other chapters.

From verb to preposition

When a verb is, through Desemanticization, re-interpreted as a preposition, this results in a major restructuring of sentence constituents: the erstwhile VP turns into a PP. The following example from Ewe exemplifies the kind of changes involved (cf. Lord 1976: 182/3):

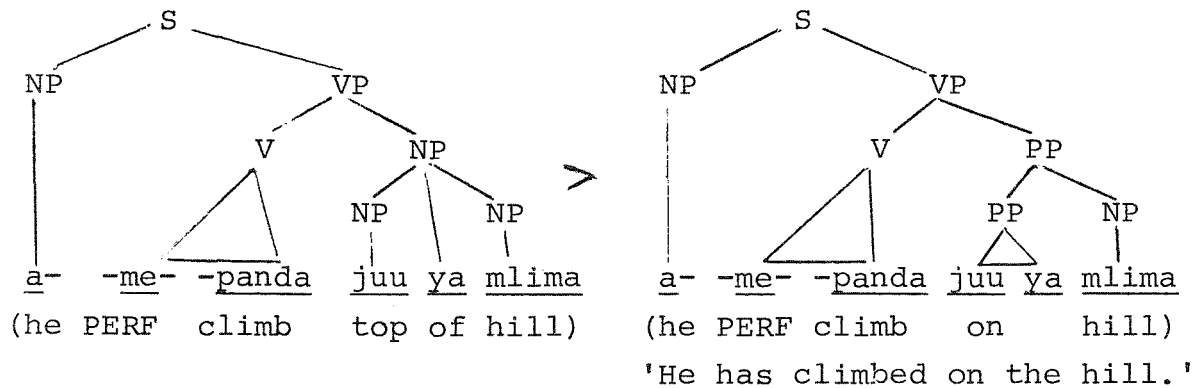


Such syntactic change is very common with serial verb languages, but it is not confined to them.

From noun to preposition

Nouns denoting body parts or relational locative concepts, but some other nouns as well, are a common source of adpositions in African languages. Once a noun undergoes De-semanticization to become an adposition, its nomen rectum becomes a noun governed by an adposition, and the NP turns into a PP:

Swahili



From periphrastic constructions to tense/aspect marking

We noted above that tense markers frequently and aspect markers almost universally evolve through periphrastic constructions, whereby the verb (V_1) is re-interpreted as an "NP" or "PP" and the verbal functions are transferred to another verb (V_2). This leads to the following structural shift, characteristic of periphrastic constructions:

$$V_2 - V_1 > V \left\{ \begin{array}{l} \text{NP} \\ \text{PP} \end{array} \right\}.$$

Whether V_2 takes an NP or a PP depends on its valency or deep case structure: if it requires an Objective case role, i.e. if it is transitive, then it takes an NP complement; otherwise, and that almost always means that there is a Place rather than an Objective case role, it takes a PP.

V_2 then undergoes Desemanticization and becomes an auxiliary and eventually a tense/aspect marker, and the $\left\{ \begin{array}{l} \text{NP} \\ \text{PP} \end{array} \right\}$ constituent turns into a verb, thereby returning to its original status. We thus observe the following subsequent shift in constituent structure:

$$V \left\{ \begin{array}{l} \text{NP} \\ \text{PP} \end{array} \right\} > \text{Aux} - V > \begin{array}{l} \text{tense/aspect} \\ \text{marker} \end{array} - V.$$

From PP to embedded clause

We have noted (1.2.3.2) that there is a grammaticalization channel whose starting point is a locative adposition and whose endpoint is a conjunction introducing embedded clauses. This change is part of the following syntactic evolution:

Stage	I	locative + NP adposition	
	II	dative marker + NP	(Desemanticization)
	III	infinitive marker + V	(Expansion I)
	IV	complementizer + S	(Expansion II)

Note that languages which have used this channel have not gone through all four stages. Swahili, for example, has reached Stage III, but has left out II, and there are no indications that it will ever reach IV.

Bari appears to have proceeded straight from I to III/IV. In the following sentence (Spagnolo 1933: 231), the locative preposition ko ('to'), which tends to be used as a multi-purpose preposition, seems to have assumed the functions of both an infinitive marker and a complementizer:

m̄rbe yöyöngö ko waddu (i) karé.

(Morbe longs to swim (in) river)

'Morbe is longing to swim in the river.'

The effect grammaticalization has in evolutions of this kind is to introduce subordinating syntactic structures.

From verb to adverb

In some serial verb languages, there is a tendency to use verbals to convey an adverbial meaning. Yoruba (Bamgboṣe 1974: 31ff), for example, has a number of verbs ("preverbal modifying verbs") which, when preceding other verbs, may assume the function of adverbs, e.g. (Bamgboṣe 1974: 37)¹⁾:

Verb	Verbal meaning	Adverbial meaning
<u>s̄aré</u>	run	quickly
<u>ȳára</u>	be quick	"
<u>r̄ora</u>	be careful	carefully
<u>j̄o</u>	assemble	together
<u>gira</u>	strive	with difficulty
<u>ṣ̄áájú</u>	proceed	before
<u>ṣ̄í²⁾</u>	miss	in error
<u>ṣ̄ó</u>	watch	carefully
<u>ḡán</u>	trim	with economy
<u>j̄í</u>	steal	stealthily
<u>t̄ó</u>	take a little (of s.th.)	sparingly
<u>ȳó</u>	slip	stealthily.

These verbs have undergone functional split: they may be used as both verbals and adverbals. A sentence like the fol-

1) Our analysis differs to some extent from that presented in Bamgboṣe 1974.

2) This and all following verbs require the inversion of the object of the following verb, i.e. it precedes, rather than follows, the verb.

lowing is therefore ambiguous (Bamgboṣe 1974: 34):

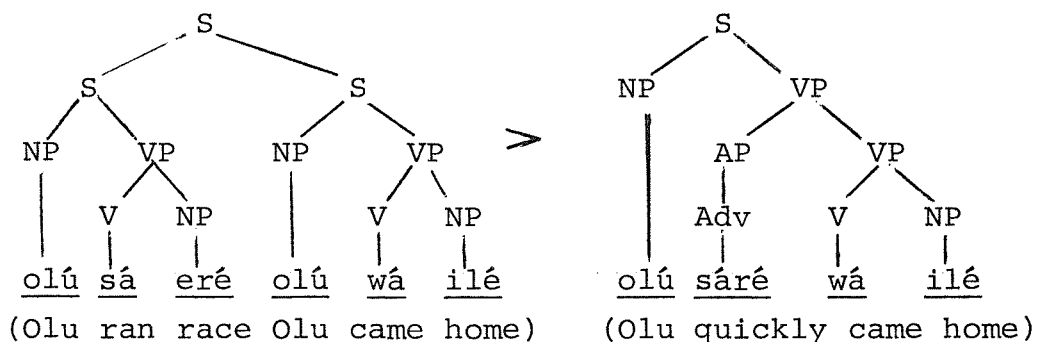
- olú sáré wá ilé. (1) Olu ran and came home.
 (Olu ran-race come home) (2) Olu came home quickly.

Meaning (1), referred to by Bamgboṣe as reflecting the 'Linking Type', retains the 'original' verbal semantics. (2), on the other hand, which Bamgboṣe considers an example of the 'Modifying Type', involves some degree of Desemanticization leading from a verbal to an adverbial meaning.

But this process is not confined to semantics; it has syntactic implications as well. Thus, the Desemanticization of sáré has the following syntactic effects (cf. Bamgboṣe 1974: 34/5):

- (a) sáré can no longer be topicalized.
- (b) sáré is a compound, consisting of sá 'ran' and eré 'race'. These two constituents can be separated when used verbally but not when used adverbally, i.e. after Desemanticization has taken place.
- (c) The above sentence consists of two underlying clauses when sáré is used as a verb. After Desemanticization, however, only one underlying clause results.

Thus, the change from verb to adverb leads to the following syntactic shift¹⁾:



1) Our proposal differs from that of Bamgboṣe, who does not assume a verb → adverb shift. He notes (p.39) that "modifying verbs do not satisfy the proposed criteria for verbal

From subordinate to main clause

A widespread effect of syntactic reanalysis is that it leads to a re-interpretation of subordinate clauses as main clauses. This happens when the erstwhile main clause assumes grammatical function, and eventually is reduced to a grammatical marker, thus establishing the subordinate clause as the only clause-like structure, and hence the main clause.

Such a development can be observed in Teso. The following stages can be distinguished in the transition from subordinate to main clause:

Stage I: There is a construction of serial periphrasis (see 3.) with -bu, pl. -potu 'come' as the main verb.

Stage II: -bu/-potu is desemanticized as a past tense marker but retains its verbal inflections, e.g.

a-bu ke-ner 'I said' (Hilders/Lawrance 1956: 14).
 (I-come I-say)
 =PAST

The subordinate clause becomes semantically the main clause but retains the morphology of a subordinate clause, as can be seen from the use of the subjunctive personal prefix ke-.

1) ctd.) status" but comes to the conclusion that modifying verbs behave very differently from adverbs (p. 40). We do not see any problem in setting up a sub-class of adverbs which are derived from verbs and thereby show particular syntactic behaviour (see verbal derivative suffixes in Kxoe which differ in their morphosyntactic behaviour depending on whether they are derived from postposition or verbs). The difference between Bamgboşe's 'modifying verbs' and adverbs like pátápátá 'completely' is possibly one of grammaticalization.

Stage III: A third stage can be found with the negative markers eroko and erija 'not yet', which are derived from the verbal auxiliaries *-rokó and *-rijá, respectively. These markers are no longer inflected for person nor do they display any other verbal characteristics. However, the erstwhile subordinate clause, which has semantically become the main clause, is still constructed in the subjunctive mood, as the prefix ke- in the following example suggests:

eroko ke-buno 'he has not yet come' (Hilders/Lawrance 1956: 46).
(not/yet he-come)

Stage IV: Finally, there is a negative marker mam, which goes back to a negative copula *-mam 'not to be'. In the same way as eroko and erija, mam has lost all verbal properties. The transition from subordinate to main clause has been completed since the verb following mam is used in the indicative mood, e.g.

mam petero e-koto ekinok 'Peter does not want a dog'
(NEG Peter he-want dog)
(Hilders/Lawrance 1956: XIX)

Thus, Grammaticalization was responsible for the following type of syntactic reanalysis:

main clause	-	subordinate clause
↓		↓
grammatical marker	-	main clause

This development had even more far-reaching implications: it introduced a change from a VSO to an SVO syntax (see 2.3).

2.2.3.2 From syntactic reanalysis to grammaticalization

In the preceding section (2.2.3.1), as well as in most other parts of this paper, it has been assumed that a reanalysis of sentence constituents is the result of, or has been triggered by, certain processes like Desemanticization or Expansion. This assumption is based on the claim that grammaticalization starts with individual lexical items which, by changing their own semantic and morpho-syntactic status, are responsible for an overall transformation of the syntactic structures in which they occur. For example, when a verb undergoes Desemanticization to become a preposition, then this does not only affect its own status as a word category or constituent but that of its neighbouring and/or higher constituents as well: the resulting preposition is no longer immediately dominated by a VP but rather by a PP.

There is, however, another, perhaps equally legitimate perspective according to which it is syntactic reanalysis which leads to grammaticalization, rather than the other way round. Language disposes of a limited number of constituent types, and we could say that a shift from constituent X to Y, or, more precisely, a re-interpretation of constituent X as Y is employed as a strategy to create new semantic classes. Within this perspective, Desemanticization or Expansion are processes which accompany syntactic reanalysis, rather than being responsible for it. Thus, in our Yoruba example

olú sáré wá ilé.

(Olu ran-race come home)

(Bamgboṣe 1974: 37; see 2.2.3.1 above)

there is a case of syntactic reanalysis

$$\overline{VP} + \overline{VP} > \overline{PP} + \overline{VP}$$

whereby the first of two conjoined VPs is re-interpreted as an PP complement of the second. As our discussion in 2.2.3.1 suggests, this type of re-interpretation leads to a remarkable overall change in constituent structure. We may say, there-

fore, that what is involved in this example is a shift from verbal constituent to adverbial modifier, rather than a categorical shift from verb to adverb, the latter being a concomitant feature.

A reanalysis of constituent structure can in fact be observed at the beginning of all major grammaticalization processes. The following examples, referring to cases discussed in 2.2.3.1, indicate what types of reanalysis occur and what their implications with regard to grammaticalization are. For the time being, it does not seem possible to generalize on the nature of syntactic reanalysis, in particular since there are shifts in opposite directions, e.g. X can be reanalysed as Y, and Y can be reanalysed as X.

(1) A verbal constituent can be reanalysed as a prepositional phrase:

$$\langle \bar{V} + NP \rangle_{VP} > \langle \bar{P}rep + NP \rangle_{PP}$$

The lexical shift in this case is one from verb to preposition.

(2) An NP can be reanalysed as a prepositional phrase:

$$\langle \bar{NP} + NP \rangle_{NP} > \langle \bar{P}rep + NP \rangle_{PP}$$

The result is usually that a noun turns into a preposition.

(3) A VP is reanalysed as a verbal:

$$\langle \bar{V} + NP \rangle_{VP} > \langle \bar{A}ux + V \rangle_{\text{Verbal}}$$

What is involved here is nominal tense/aspect periphrasis, leading from a verb to an auxiliary with tense or aspect function, and from a verbal noun to a verb (see 2.2.3.1; see also 3.1.).

(4) A PP is reanalysed as an NP:

$$\langle \bar{P}rep + NP \rangle_{PP} > \langle \bar{I}nfin + V \rangle_{NP} \quad (\rightarrow \langle \bar{C}ompl + S \rangle_{NP})$$

This leads to the grammaticalization of prepositions as infinitive markers and complementizers.

Thus, it would seem that a constituent Y may serve as a model for a constituent X, and that a shift from X to Y is

exploited as a means of introducing new structures with specific grammatical functions. Note, however, that such a shift does not affect a constituent as a whole, nor does it mean that X is to be replaced by Y. Syntactic reanalysis works rather only under specific conditions: only a limited number of word types of a given word category are liable to be syntactically reanalysed, and constituent shift is confined to these. For example, the shift from VP to PP, which leads to the re-interpretation of a verb as a preposition, tends to be restricted to a few verbs requiring a Place, Source or Goal case role, with other verbs it is blocked.

Furthermore, it should be noted that syntactic reanalysis offers another example of functional split (1.4.3), that is, for some time at least, X and Y co-exist¹⁾, with the effect that there is a period of ambiguity resulting from the fact that a given constituent can be interpreted as either X or Y.

1) As outlined above, this refers only to certain specified contexts in which X and Y occur.

2.2.3.3 Constituent-internal reanalysis

In 2.2.3.1 and 2.2.3.2, we have been dealing with cases where a given constituent is reanalysed and identified with another constituent type. There is another kind of reanalysis whereby a certain part of a constituent is removed and allocated to another constituent. We will refer to this kind of reanalysis, which has the effect of destroying an existing constituent structure, as constituent-internal reanalysis.

In Ewe, the unmarked form of the finite verbal word consists of a clitical subject pronoun plus the verb stem:

me-vá 'I came'
e -vá 'you came'
é- vá 'he/she came'
 etc.

Ewe has introduced a focus construction whereby the NP in focus was placed sentence-initially in the form of a cleft construction which was linked with the rest of the sentence by means of the 3rd person singular pronoun é-, for example:

+nye é- vá 'I (rather than s.o. else) came'.
 (it-is-me he-come)

Since focus constituents came to be followed regularly by é-, this pronoun was re-interpreted as a focus marker. The syntactic consequence was that é- was detached from the verbal constituent and allocated to the focus NP as an enclitic, e.g.:

nye-é vá 'I (rather than s.o. else) came'.
 (I-FOC come)

This pragmatically induced case of reanalysis thus led to the following change¹⁾:

cleft construction - pers. pron. é- + V > focus NP + focus marker é- - V.

1) See also 2.4 (3).

From preposition to verbal (derivative) affix

Another possible source of constituent-internal re-analysis is verbal attraction (see 1.4.1), whereby linguistic units functioning as prepositions are removed from the adverbial phrase and allocated to the verb. This development usually involves the following change:

V - Prep + NP > V + (case-marking)suffix -NP.

This type of reanalysis has taken place in Dholuo (see 1.4.1), where prepositions like ne 'for (benefactive)', e 'at (locative)', or gi 'with (instrumental)' become verbal suffixes once the noun phrase they govern is topicalized to the clause-initial position¹⁾, e.g.

<u>jon nego diel ne juma.</u>	→	<u>juma jon nego-ne diel.</u>
(John is-killing goat for Juma)		(Juma John kill-BEN goat)
'John is killing a goat for Juma.'		'John is killing a goat for Juma.'

Similarly, in Kxoe, the comitative postposition /xoá 'with' occurs also as a verbal derivative suffix denoting comitative actions:

djǎo-/xoà-à-tè 'he collaborates'
 (work-with/COM-junct.-TENSE)
 (Köhler 1981: 503)

1) The instrumental preposition gi changes to go once it is re-analyzed as a verbal suffix.

2.2.4 Morphological issues

Grammatical morphemes fulfilling one and the same function or belonging to one and the same category may differ in their morphological behaviour without apparent semantic or other reasons. Many scholars working on African languages have been confronted with cases where, for example, a given morpheme category has to be divided into two or more sub-classes on account of certain morphological or morphosyntactic idiosyncrasies. The procedure followed in such cases is usually to provide the relevant sub-classes with labels ('class I', 'class II', etc.) and to leave it at that.

Taking the mechanisms of linguistic evolution into consideration, it is possible to account for many of these cases by providing a diachronic interpretation¹⁾. If, for example, a morpheme category can be traced back to two different channels of grammaticalization, and hence to two different kinds of linguistic units, then this is likely to be reflected in the synchronic behaviour of that category: for some time at least phonological, syntactic and/or semantic properties of the categories of source tend to be retained. In the following, some examples are provided which suggest that it may be immediately relevant to morphological description if we take into consideration observations on patterns of grammaticalization.

Köhler (1981: 503) notes that there are two categories of verbal derivative suffixes in Kxoe: category I is attached immediately to the verbal root, while category II is separated from the verb by a junctural morpheme ("joncture II au degré 4"), e.g.

1) cf. Givón (1971a: 145): "... in order to understand the current morphology and morphotactics of a language, one must construct highly specific hypotheses concerning the syntax of that language at some earlier historical stage of its development."

Category I djáo-kà-à-tè 'He causes to work'
(work-CAUS-junc.-TENSE)

Category II kxʔó-ró-xú ʔè 'Finish the meat!'
(eat/meat-junct.-TERM IMPER)

Synchronically, it does not seem possible to adequately account for the difference between category I and II. If we take evolutionary criteria into consideration, however, we see that this difference turns out to be one of grammaticalization channels: category II suffixes are derived from verbs:

Suffix	Verbal origin
- <u>éi</u> durative-intensive	<u>éi</u> 'remain'
- <u>má</u> , applicative	<u>má</u> 'give, offer'
- <u>má</u>	
- <u>xú</u> terminative	<u>xú</u> 'abandon, loosen'

Category I suffixes, on the other hand, are not of verbal origin. In all cases where their source can be traced they go back to postpositions:

Suffix	Postpositions
-/ <u>xoà</u> comitative	/ <u>xoà</u> 'with (comit.)'
- <u>ʔò</u> directional	<u>ʔò</u> 'at'
- <u>kà</u> causative	<u>kà</u> 'with (instr.), toward'

Arrangement of meaningful units

In Ewe, there are two contrasting word orders: the object complement precedes the (main) verb in the progressive and ingressive aspects but follows it in all other aspects and tenses. This is the result of syntactic reanalysis: Ewe has a possessor-possessed syntax which led to the development of postpositions and finally to a change from SVO to SOV order in the progressive and ingressive aspects through the following stages¹⁾:

- | | |
|---|---|
| <p>I <u>é-ɔ̃</u> nú 'he ate'
(he-eat thing)</p> | <p>Aorist; SVO order</p> |
| <p>II ⁺<u>é-le</u> nú <u>ɔ̃-ɔ̃</u> me
(he-be thing (of) eating
 inside)
/poss'r - poss'd/</p> | <p>Introduction of a periphrastic construction, an auxiliary (<u>le</u>) assuming the function of a verbal and the VP becoming an AP (NP + Postposition)</p> |
| <p>III <u>é-le</u> nú <u>ɔ̃-m̃</u>
(he-be thing eat-PROG)
'he is eating'</p> | <p>(1) The postposition undergoes Desemanticization, Cliticization and Erosion and develops into an aspect marker (<u>-m̃</u> progr., <u>-g̃é</u> ingress.)
(2) the order poss'r - poss'd is re-interpreted as O-V in the progressive and ingressive aspects.</p> |

Since stage I still exists in Ewe, there are nowadays two contrasting word order patterns: SOV in the progressive and ingressive aspects and SVO elsewhere.

This development can only be explained if one assumes that the presence of a poss'r - poss'd syntax preceded that of the periphrastic aspects; otherwise it would not be possible to account for the introduction of an O-V order.

1) For an alternative view, see Givón 1979. The present example is based on Heine 1980:103-106.

Bari offers another case where certain synchronic word order characteristics can be explained only if one has recourse to evolutionary considerations.

In Bari (Spagnolo 1933: 205), there are three verbal proclitics which Spagnolo refers to as future tense markers¹⁾. Their position within the verb phrase is as follows:

tu is placed immediately before the verb;
kɔ́ precedes tu but follows the negative marker ti;
dé precedes the negative marker ti, e.g.

nan kɔ́ tu kɔn 'I am going to do'
 (I FUT FUT do)

nan ti kɔ́mɛddya 'I am not going to see it.'
 (I not FUT see)

nan ti tu mɛddya 'I am not going to see it.'
 (I not FUT see)

nan dé ti mɛddya 'I shall not see it.'
 (I FUT not see)

The position of these markers reflects the fact that they evolved via differing channels. The position before the negative marker ti is indicative of an adverbial origin: dé is derived from the adverb (e)dé 'after that, afterwards, then'. Tense markers immediately preceding the verb are of verbal origin: tu goes back to the verb tu 'to go'. kɔ́ appears to be derived from the verb kɔn 'to do', although its immediate source may be the adverb kɔ́ 'actually'.

1) From the translation given by Spagnolo it appears doubtful whether two of them (tu and kɔ́) are, in fact, future markers.

Ewe offers still another example for the relevance of syntactic reanalysis to the understanding of synchronic morphosyntactic forms.

In Ewe, a clitic personal pronoun may be preceded by a free pronoun for purposes of emphasis or theme. The use of the clitic pronoun is obligatory in this case:

é-vá 'he came'
(he-come)

éyá lá é-vá 'as for him, he came'
(he THEME he-come)

but: ⁺éyá lá vá.

However, when the free pronoun is followed by the focus marker -é then the clitic pronoun is obligatorily deleted:

nye-é vá 'I (rather than anybody else) came'.
(I-FOC come)

⁺nye-é me-vá.

It is not possible to account for this deletion using synchronic linguistics: there is no reason why the clitic pronoun should be deleted after -é but not elsewhere. It is only with the aid of evolutionary considerations that a reason can be found. The focus marker -é is derived from the clitic 3rd person pronoun é 'he, she', and the focus constituent goes back to a kind of cleft construction, so that the sentence nye-é vá evolved from an earlier sentence which may be reconstructed as

⁺nye é-vá 'it is me who came'.
(it-is-me he-came)

The 3rd person pronoun é- underwent syntactic reanalysis: since it always occurred after focus NPs, it was re-interpreted as a focus marker, and, hence, it became a clitic of the focus NP rather than a verbal clitic¹⁾.

1) See also 2.4 (2).

The conclusion that we are dealing with a deletion rule, therefore, would be misleading: rather than being deleted, the clitic pronoun is still there but has been re-interpreted as a focus marker.

However, the language has gone one step further which suggests that there is some justification for setting up such a deletion rule. After the Expansion of the erstwhile pronoun é as a focus marker had been completed, Ewe appears to have introduced a rule whereby no clitic subject pronoun is required after focus NPs. This rule might have been expanded to apply also to focus constituents without -é as a focus marker. In the following sentence, for example, it is the modifier ɔ́kɛ́ 'alone' which signals focus and therefore triggers the pronoun deletion rule:

wo ɔ́kɛ́ vá 'You alone came.'
(you one come)

Examples of this type suggest that even if it is possible to describe language structures using strictly synchronic linguistics, it may not always be possible to achieve explanatory adequacy.

a-bu ka-duk 'I built'
i-bu ko-duk 'you built'
a-bu ko-duk 'he built'
 etc.

Furthermore, this construction reflects the original syntactic relation obtaining between the two verbs involved: the auxiliary -bu/-potu is the nucleus of the main clause while the second verb (-duk) is the nucleus of a subordinate clause, morphologically marked by the use of the subjunctive personal prefixes ka-, ko-, etc. (see Hilders/Lawrance 1956: 29/30).

A more advanced stage of grammaticalization is found in negative constructions. They are formed essentially by means of the negative marker mam, which is derived from the verb -mam 'not to be'¹⁾. This marker has lost virtually all verbal properties: it is no longer inflected for person, nor is the main verb following mam conjugated in the subjunctive, e.g.

mam petero ekoto ekinok 'Peter does not want a dog.'
 (NEG Peter want dog)

(Hilders/Lawrance 1956: XIX).

Thus, in negative clauses Teso has completed the change from VSO to SVO by reanalysing the negative copula verb -mam as a negation marker²⁾. Note that this word order change took place without involving Permutation, it was caused by syntactic reanalysis (see 2.2.3.1).

1) In Turkana, a language closely related to Teso, -mam is still used as a negative copula (cf. Heine 1980b: 71).

2) There are two more negative particles, eroko and erija, which had a similar fate, being derived from Proto-Ateker verbs +ròkó and -rîjá. They are, however, less grammaticalized than mam, since they still require the main verb to be in the subjunctive mood (cf. Hilders/Lawrance 1956: 45/46 and chapt. 2.2.3.1).

dó á mū dē dīi

(Doe INCOMP leave thing eat-NOMINAL¹)

(1) 'Doe leaves for eating.'

(2) 'Doe will eat.'

The two meanings reflect two different stages of grammaticalization: in (1) the verb mū still has its lexical meaning, while in (2) it has become a future marker through Desemanticization.

Stage III: While the above example is characteristic of functional split (see 1.4.3.1), this is followed by shift (see 1.4.3.2) in stage III, in that the erstwhile auxiliary now serves exclusively as a tense or aspect marker. During this stage, a number of Kru languages have either reduced the nominalization marker to a tonal clitic, or have lost it altogether, as is the case in the following example from Tépo, a Western Kru language:

yruwle m̄ kayu gbo pa. 'The chameleon is going to enter
(chameleon TENSE house under enter) the house.'

(Marchese 1978: 130)

The next stage of evolution would be a situation where all tenses and aspects are formed by means of nominal periphrases. This would imply that the SVO word order is lost, i.e. it is replaced entirely by SOV. Neither the Kru languages nor any of the Kwa languages have reached this stage. There is, however, every reason to assume that Bambara-Dyula, and perhaps the Mande languages as a whole, are characteristic of such a stage, where the shift from SVO to SOV has been concluded (see Heine 1980c: 106-108).

1) The nominalizer in this case consists of a tonal clitic (see Marchese 1978: 130).

2.4 Pidginization

What happens to languages on their way to becoming pidgins has been described fairly well, and hypotheses to explain the linguistic development referred to as pidginization have been put forward (e.g. Mühlhäusler 1974; Heine 1973; 1978). The present framework offers another means of accounting for some of the linguistic changes that are characteristic of pidginization: pidginization may be interpreted as a time-acceleration device in language evolution. Developments that in natural languages take several centuries or even millennia, are reduced to decades when a language becomes a pidgin. Thus, probably the most significant drift that marks pidginization is to the anticipation of developments that the relevant language would undergo anyway¹⁾. In the following, some examples are presented to illustrate this point.

Kikongo, a Bantu language, has a basic aspect distinction marked by verbal suffixes: -a for the indefinite aspect and -i²⁾ for the perfect. Furthermore, there is a tense prefix a- denoting 'distant time'. By means of 'accent change', a distinction between past and future can be made. We thus get the following tense-aspect pattern (cf. Laman 1912: 159/60):

	<u>Aspect</u>	
<u>Tense</u>	Indefinite (<u>-a</u>)	Perfect (<u>-i</u>)
'Present' (∅)	<u>tu-kang-a</u> 'we (shall) bind'	<u>tu-keng-i</u> 'we have bound' (present perfect)
Before	<u>tw-a-káng-a</u> 'we bound'	<u>tw-a-keng-i</u> 'we had bound' (past perfect)
'Distant time' (<u>a-</u>)	After <u>tw-à-kang-a</u> 'we shall bind'	—

1) We are aware of the fact that this does not account for all aspects relevant to pidginization.

2) As the following examples will show, -i is responsible for various Adaptation (regressive assimilation) processes.

This affixal structure has been expanded by a system of periphrastic aspects, the aspect markers being derived from verbs via the following processes:

(1) Lexical base	<u>kala</u>	<u>mana</u>	<u>sala</u>	<u>yika</u>
	'to be, exist, remain'	'to finish'	'to remain, be left, dwell, abide'	'to add, put more'
(2) Desemanticization	pro- gressive aspect		perfective aspect	'still' aspect
(3) Cliticization	the erstwhile verbs become auxiliary clitics			
(4) Erosion	<u>ka</u>		<u>sa</u>	
Resulting aspect markers	<u>ka</u>	<u>mana</u>	<u>sa</u>	<u>yika</u>

Note that not all aspect markers underwent Erosion. Furthermore, in the dialect described by Laman (1912), both forms of stage (3) and (4) co-exist, e.g.

y-a-kala kanga 'I was binding.'
or y-a-ka kanga

The number of tenses and aspects is multiplied by the fact that the affixal structure outlined above has been retained, the relevant affixes being attached to the clitical aspect marker of the periphrastic construction. The following example, which is confined to the perfective marker mana, illustrates the various possibilities:

<u>man-a</u>	present indefinite perfective
<u>a-man-a</u>	past " "
<u>men-i</u> ¹⁾	present perfect perfective
<u>a-men-i</u> ¹⁾	past " "

In Kituba, a pidgin derived from Kikongo, this system was simplified considerably. Fehderau (1966: 116) notes that there are three different evolutionary forms corresponding to the

1) The change man- → men- is due to Adaptation, i.e. regressive vowel assimilation.

speech of three different generations of Kituba speakers. The oldest generation has inherited the inflected auxiliaries of Kikongo in their perfect form, but the affixes of these auxiliaries have lost their function. In the speech of the middle-aged generation, the auxiliaries have been eroded as monosyllabic clitics, and in that of the youngest generation, these proclitics became prefixes. The following is a more formal account of the development:

<u>Kikongo base</u>	<u>+i-men-i</u> (I(?) perfective- perfect)	<u>+i-ked-i</u> (I(?) progressive- perfect)
<u>Kituba, oldest generation</u>		
(1) Fusion	<u>imene</u>	<u>ikele</u>
(2) Merger	perfect	ingressive
Example:	<u>munu imene kwenda</u> (I PERF go) 'I have gone'	<u>munu ikele kwenda kusosa</u> (I PERF go searching) 'I am going about searching'
<u>Kituba, middle-aged generation</u>		
(3) Erosion	<u>me</u>	<u>ke</u> ¹⁾
Example:	<u>munu me kwenda</u> 'I have gone'	<u>munu ke kwenda kusosa</u> 'I am going about searching'
<u>Kituba, youngest generation</u>		
(4) Affixation	<u>-me-</u>	<u>-ke-</u>
Example:	<u>mu-me-kwenda</u> ²⁾ 'I have gone'	<u>mu-ke-kwe-sosa</u> ²⁾ 'I am going about searching'

Thus, within three generations of use, the pidgin has undergone four evolutionary processes - a change that with natural languages might take up to a millennium, or even more.

1) This instance of Erosion has also occurred in Kikongo.

2) This example offers another case of grammaticalization: the first person sg. pronoun munu underwent Erosion and Affixation to become mu- in the speech of the 'youngest Kituba generation'.

2.5 Dialect comparisons

Our description of processes is based on cases where the origin of grammatical elements is 'transparent', i.e. where the lexical source of such elements can be reconstructed (cf. Kahr 1976: 146). However, only a minor part of the material available is, in fact, transparent. Especially in Africa, where there are hardly any earlier written records and where diachronic linguistics is still in a very elementary stage, most of the morphological structures one is faced with have to be classified as 'non-transparent': we know virtually nothing about their diachronic behaviour. Even in fields such as comparative Bantu, which have attained a relatively advanced state of research, most developments are still opaque to diachronic analysis. Although detailed reconstructions of the Bantu noun class systems and verbal derivative extensions exist, their origin is still largely unknown.

One of the main purposes of the present approach is to reduce the amount of non-transparent developments by proposing generalizations on diachronic processes. If, for example, under specific conditions new case forms enter the nominal morphology only through the suffixation of postpositions (Kahr 1976) then we are able to account for the history of case affixes in languages on which no diachronic information is available.

In Africa, where early written records are hardly available, systematic comparisons between closely related languages and, even more importantly, between different dialects of the same language play a crucial role. They form indeed the main source of information for diachronic inferences¹⁾. What makes inter-dialect comparisons a particularly valuable tool

1) Another source of information can be seen in morphology. Givón rightly points out that "... synchronic morphologies and morphosyntactics are a most powerful tool for reconstructing earlier diachronic stages in the syntax of a language" (Givón 1971a: 145).

to students of linguistic evolution is the fact that they offer a wealth of transparent developments: what constitutes a verb in dialect X turns up as a preposition or tense marker in dialect Y, and a noun like 'head' in X may have a preposition 'on (top of)' as its equivalent in Y. Many synchronic differences between dialects can in fact be interpreted as reflecting differing stages or ways of grammaticalization. It is usually either of the following factors that accounts for such differences:

(1) Choice of the grammaticalization channel

There are, for example, two main sources for the emergence of relative clause markers: demonstrative and interrogative pronouns. Most African languages have used the demonstrative channel. This applies also to Standard-Ewe (based on the Anglo dialect), which has grammaticalized the demonstrative ⁺si¹⁾ 'this'. However, some Western inland dialects of Ewe have opted for the interrogative channel: in these dialects, the relative clause marker is derived from the interrogative word kalâ 'who?, what?' (cf. Westermann 1907: 134).

(2) Number of processes

In the following example, the structural difference between two dialects is the result of the relative number of grammaticalization processes that have been undergone.

Acholi and Lango, although usually treated as different ausbau languages, can be described as dialects of one and the same, Western Nilotic, language. They use future constructions differing from one another in several ways, but these differences can be accounted for essentially by looking at the processes that have been used. Compare the following synonymous sentences (Bavin 1981: 3):

1) The modern form of the demonstrative is sia (<⁺si + -a definite article; see Westermann 1907: 60).

Lango

Acholi

an a-bino cammoan a-bi-camo

(I I-FUT to-eat)

(I I-FUT-to-eat)

'I will eat.'

Apart from the consonant gemination in Lango (mm), the difference between these two sentences is exclusively one of grammaticalization. In both dialects, the future tense goes back to a periphrastic construction bino 'go, come' + verbal infinitive form. While in Lango this construction has been retained, it has undergone the following processes in Acholi:

	⁺ <u>an a-bino camo</u>
Affixation	⁺ <u>an a-bino-camo</u>
Erosion	<u>an a-bi-camo</u>

(3) Process-internal options

But it is not always the number of processes that is responsible for dialect differences, it may also be the way in which a given process is applied.

In the following example from Akan (Dolphyne s.a.), dialect differences in stem words having the structure CVnV can essentially be accounted for by means of one process only: Erosion¹⁾. Note that in the following example Erosion does not presuppose any other grammaticalization process:

<u>Dialect</u>	'house'	'to smell'	'name'
General Brong	<u>danĩ</u>	<u>bɔnɔ̃</u>	<u>dinĩ</u>
Akuapem	<u>danʔ</u>	<u>bɔŋʔ</u>	<u>dinʔ</u>
Fante	<u>dãŋʔ</u>	<u>bɔ̃nʔ</u>	<u>dzinʔ</u> ²⁾
Asante	<u>dãĩ</u>	<u>bɔ̃ɔ̃</u>	<u>dĩĩ</u>
Brong (of Nkoranza township)	<u>dãʔ</u>	<u>bɔ̃ʔ</u>	<u>dĩʔ</u> .

1) In all dialects except Akuapem, nasal Adaptation has been at work. However, whereas in General Brong Adaptation is progressive, leading to the nasalization of a following vowel, it is regressive in the other dialects.

2) Fante has the rule [d] → [dz] before front vowels.

All dialects other than General Brong and Asante have undergone syllabic Erosion whereby the final vowel, and hence the final syllable, have been deleted¹⁾: This has been followed by velarization of the final nasal in Akuapem. Nkoranza Brong has furthermore experienced peripheral Erosion leading to the loss of this final nasal. Asante has not applied the syllabic Erosion rule that the other dialects except General Brong have, but it has undergone Erosion in the form of internal (intervocalic) nasal loss²⁾.

1) Dolphyne (s.a.: 13) treats the glottal stop [ʔ] as a feature of pause, rather than segment replacing the final vowel.

2) For a different interpretation, see Dolphyne (s.a.: 13 (P. 6)).

3. Verbal morphology

Ideally, there is no more than one source for the development of a given grammatical category. However, there are only few examples where this is the case. Usually a language has several options to choose from in order to introduce a new category, or to replace an existing one. These options are referred to as channels of grammaticalization.

Channels may be defined in various ways. No attempt is made here to set up a general definition. In one case it might appear appropriate to describe a channel in terms of morphological characteristics, in another case it is preferable to rely on semantic features. The more specific a definition is, the more information does it provide. For example, to say that a prominent way of development for the complementizer 'that' in African languages is via the re-analysis of verbs is less informative than a statement to the effect that it is a semantically defined sub-class of verbs, i.e. verbs of saying, which makes up this channel of grammaticalization.

There tends to be a small number of preferred channels for each individual grammatical category. Such channels, which are called primary channels, may be the only possible source of that category. Frequently, however, there are other less common channels in addition. These are referred to as secondary channels.

This chapter is concerned with the question: what options are available to a language in the expression of a specific function? Tense-aspect marking and verbal derivative extensions have been selected in order to demonstrate how the machinery outlined in Chapter 1 is made use of to develop linguistic expressions for such a function, or range of functions.

3.1 Tense and aspect markers

Our data on African languages suggest that there is a noteworthy difference between tenses and aspects with regard to their origin. Our investigation does not support the statement that adverbials "should never cliticize on the verb as tense-aspect markers" (Givón 1979: 219), and hence Givón's claim that "... the only universal source for tense-aspect affixes on verbs in language is via the reanalysis of main verbs" (1979: 218) would seem to need qualification.

The primary channel of tense and aspect markers is nominal periphrasis, whereby the tense or aspect function is introduced by an auxiliary verb while the main verb is used in an infinite, nominalized form.

In addition to nominal periphrasis, there are the following secondary channels:

(1) Serial periphrasis

This channel shares with nominal periphrasis the fact that the source of the tense/aspect marker is an erstwhile verb. However, while in nominal periphrasis the main verb is nominalized, it remains a finite verb in serial periphrasis.

(2) The adverbial channel

The starting point of this channel is an adverb which becomes desemantized and develops into a tense marker.

3.1.1 The channels

3.1.1.1 Nominal periphrasis

The starting point of this channel is syntactic reanalysis, whereby a sequence of two verbs is re-interpreted as a VP constituent consisting of a verb and a complement.

The structure of a periphrastic construction which develops into a tense or aspect form depends on various factors. As most important factor, it depends on the valency, or case behaviour, of the verb that is desemantized to become a tense or as-

pect auxiliary. If this verb requires a PLACE or GOAL complement then the main verb is introduced as a PP (prepositional/adverbial phrase), i.e. the periphrastic construction receives the syntactic form (1):

(1) AUX - ADPOS + NP¹⁾.

If, on the other hand, the desemanticized verb requires an OBJECTIVE case role then the main verb is introduced as an NP (noun phrase), the periphrastic construction having the form (2):

(2) AUX - NP¹⁾.

Accordingly, we may distinguish between PP-periphrasis, relating to structures like (1), and NP-periphrasis giving rise to structure (2). However, since both structures involve the nominalization of the main verb, we will refer to them summarily as nominal periphrasis.

The valency of the verb developing into a tense/aspect auxiliary may be such that it allows for either a PLACE or an OBJECTIVE complement. The evidence available suggests that in such cases (1) tends to be favoured as the grammaticalization channel.

In Birom (Bouquiaux 1970: 307/8; 373), for example, sé appears to be used as a general copula, allowing for both a PLACE and an OBJECTIVE complement:

yè a-sé hómó 'He is here.' (PLACE)

yèn a-sé birom 'They are Birom.' (OBJECTIVE)

It has given rise to a present progressive aspect²⁾

1) Depending on the word order structure of the relevant language, ADPOS may be a preposition or postposition, and AUX may be phrase-final, rather than phrase-initial.

2) As in the examples above, it is preceded by the aorist marker a and followed by the verb root.

using (2), i.e. using NP-periphrasis:

má sé-ciŋ (← mà a sé-ciŋ) 'I am ploughing.'

(Quoted from Blansitt 1975: 16).

Frequently, it turns out to be difficult if not impossible to unambiguously reconstruct the exact channel of a given verb construction. The main reason for this is that affixes marking deverbal nouns or distinguishing NPs from PPs are liable to undergo Erosion and eventually Loss or Merger, which means that no more information is available on the former constituent status of the relevant construction. In this way, what appears to be indicative of NP-periphrasis may go back to PP-periphrasis, and what appears as a verb may diachronically be a de-verbal noun which has lost its nominalization marker¹⁾. This poses a serious problem especially in Africa, where more detailed diachronic analyses are usually not available.

1) Marchese (1978: 129), in her comparative analysis of Kru languages, has shown that NP-periphrasis is followed by a drift to re-convert the nominalized verb back into a verb. The result is that the nominalization marker is reduced to a suprasegmental (tonal) morpheme and eventually disappears altogether:

"Dans certaines langues kru, ce morphème de nominalisation n'existe pas, et dans d'autres, il est indiqué par un ton. Ces faits suggèrent que dans quelques cas, le morphème de nominalisation a disparu."

3.1.1.2 Serial periphrasis

This pattern consists of a combination of two finite verbs one of which functions as an auxiliary and the other as the main verb. It is the auxiliary which is reanalyzed as a tense or aspect marker. Accordingly, the tense/aspect marker follows the verb in type D languages¹⁾ but usually precedes it in languages of all other types which make use of serial periphrasis (but see below). In Kirma, which is a type B Gur language, serial tense/aspect marking therefore is confined to the pre-verbal position (Prost 1964: 56-59):

present aorist $\frac{mi \ wo}{(I \ eat)}$ 'I eat, I am eating'

present progressive $\frac{mi \ ta \ mi_2 \ wo}{(I \ leave^2) \ I \ eat)}$ 'I am eating'

or $\frac{mi \ di \ ta \ mi \ wo}{(I \ be \ leave \ I \ eat)}$.

Exactly the same serial construction is found in Tyurama (Prost 1964: 103; 105), a language closely related to Kirma: both the copula na and the main verb are preceded by a personal pronoun:

$\frac{mo \ wu}{(I \ eat)}$ 'I eat'

$\frac{me \ na \ me \ wu}{(I \ be \ I \ eat)}$ 'I am eating' (quoted from Blansitt 1975: 24).

1) Type D languages are defined by the fact that they place adverbial phrases before the verb. A concomitant feature of this type is that the auxiliary follows, rather than precedes, the main verb (cf. Heine 1976: 44). Note that while all type D languages are "SOV", not all "SOV" languages are of type D.

2) The meaning of ta is given as 'partir' in Prost's French translation.

In type D languages, the verb developing into an aspect marker follows the main verb, in accordance with the position of auxiliaries, which are also placed after the main verb. Thus, in Tigrinya (Rossini 1940: 64), the copula allò, following the perfective pattern, is preceded by an imperfective verb form to produce a present progressive phrase, e.g.

ěsebběr allokù 'I am breaking' (quoted from Blansitt
(I break I-am) 1975: 23).

In Duala, there is both an aspect (continuative) and a tense (past) which are formed by means of serial periphrasis (Ittmann 1939: 96/7): the continuative, or habitual aspect, uses the present tense (mabé) of bé 'to be' followed by the inflected main verb:

a mabé á nyó mao búnya té 'he drinks palmwine
(he be he drink ...) every day'.

The past tense consists of the past tense form of 'to be' (tá) plus the main verb in the aorist tense:

ná ta ná pə 'I came'
(I was I come)

o tá ó pə 'you came'.
(you were you come)

There are some examples from African languages which suggest that serial and nominal periphrasis may be used as functionally equivalent channels¹⁾. This applies, for example, to the past progressive in Diola Fogy (Sapir 1965: 46), in which both cases are formed by means of the auxiliary -lakə 'sit', e.g.

Serial periphrasis

Nominal periphrasis

i-lakə i-ri 'I was eating'
(I-sit I-eat)

i-lakə fu-ri 'I was eat-
(I-sit INF-eat) ing'.

1) See also 3.1.4.

In many cases, it turns out to be difficult or impossible to determine whether a given construction goes back to the serial or the nominal channel. This is particularly the case when the main verb has been grammaticalized to the extent that it no longer contains any information on person, tense/ aspect, etc., i.e. where the marking of these functions has been transferred to the auxiliary.

A number of African languages have developed perfective markers through Desemanticization of the verb 'finish'. Strangely enough, the position of the perfective marker is frequently after the verb, although the relevant languages place auxiliaries before the main verb, and we have no reason to assume that alternative word order arrangements existed at some earlier stage in these languages.

The Proto-Bantu perfect marker *gide, derived from the verb *gid 'finish', developed into a verbal suffix, although there is no evidence that Bantu ever had a history of post-verbal auxiliatation¹⁾ (see 2.1.2). Furthermore, in Standard Ewe, the perfect marker vɔ (< vɔ 'finish, be finished') follows the verb, although auxiliaries precede, e.g.

me-ɔ̄ du nú vɔ 'I have eaten'.
(I-eat thing PER)

In Standard Ewe, there is a second verb, nɔ 'remain, stay', which shows a similar history: it gave rise to -(n)a²⁾, a suffix which indicates habitualness:

me-yi-na 'I (habitually) go.'
(I-go-HAB)

1) A different position, however, is maintained by Givón (1975).

2) Note that in the "Dahome" dialect of Ewe (Westermann 1907: 139) the verb nɔ was desemanticized as a pre-verbal aspect marker:

m-nɔ-sa 'I (habitually) sell.'
(I-HAB-sell)

We may tentatively assume that we are dealing with instances of inversed serial periphrasis. This is confined to specific verbs, which express actions that are conceived as taking place after the one expressed by the main verb. Another alternative would be that the post-verbal position of these markers suggests that they go back to verbs which were reanalysed as adverbials, the place of adverbials being after the verb in the relevant languages. This would account for certain similarities that exist between these markers and verbal derivative extensions (see 3.2, 3.3).

3.1.1.3 The adverbial channel

The development from adverb to tense marker is likely to go through the following grammaticalization stages:

Stage I: the adverb undergoes Desemanticization, i.e. its meaning changes/is narrowed down to that of a tense marker. Thus, the adverb ɔwo 'shortly afterwards' of Lotuko (Muratori 1938: 161ff) became a marker of the near past. Similarly, the Sango adverb faɔé 'quickly' (cf. faɔe-só ('quickly-this') 'now') was the source of a future marker, which is placed before the subject:

faɔé lo kúí bíaní 'He will really die'
(FUT he die truly)

(Samarin 1967: 154; 80).

Stage II: Desemanticization is followed by syntactic change. In accordance with the principle of verbal attraction (see 1.4.1), the erstwhile adverb loses its former syntactic properties and undergoes Permutation, which has the effect of placing it next to the verbal word.

In Bari, the adverb ɔé 'then, afterwards' moved from the clause-initial position to that immediately preceding the verb, after having been desemanticized to a future marker. Since ɔé is still retained as an adverb, it is nowadays word order which indicates whether ɔé functions as an adverb or a tense marker (Spagnolo 1933: 105/6):

dé nan kɔn ... I do ... then'
(then I do)

nan dé kɔn I shall do ...'
(I FUT do)

The same development can be assumed for the Bari adverb kɔ́ 'actually', which became a marker of the "future of obligation" by moving to the position immediately preceding the verb:

nan kɔ́ kɔn ... 'I shall do ...'
(I FUT do)

Lotuko offers an example of a language which overwhelmingly uses adverbs as tense markers. The following tenses are marked by erstwhile adverbs (Muratori 1938: 161ff.):

			<u>Derived from</u>
Future	<u>a-bak adI nI</u> 'I shall beat' (I-beat FUT I)		<u>adI</u> (adv) 'in future'
Near Past	(1) <u>a-bak dwo nI</u> 'I have just beaten'		<u>dwo</u> (adv) 'shortly afterwards'
	(2) <u>a-bak ɲɔlɛ nI</u> 'I beat yesterday'		<u>ɲɔlɛ</u> (adv) 'yesterday'
Remote Past	<u>a-bak nya nI</u> 'I beat some time ago'		<u>nya</u> (adv) 'in the past'.

It can be concluded that these particles are indeed tense markers rather than adverbs from their position between verb and subject (see above). Adverbs are usually placed clause-finally or -initially. The particle moi (adv) 'in the remote future', for example, is used as a marker of remote future. The fact that it has not yet developed into a tense marker can be seen from its position after the subject as well as from the fact that it requires the presence of the future marker adI:

a-bwax-a adI nI moi 'I'll dig in the not so near future'
or moi a-bwax-a adI nI (= topicalized adverb).

An adverbial source for tense markers has also been reported occasionally for West African languages. Thus, Singler (1979: 25) notes that Klao, a Kru language spoken in southwestern Liberia, has

"[.] formed grammatical time markers from temporal adverbs. Both aka, 'yesterday', and ká 'tomorrow', can be shown to have been derived from péplākā, 'one day removed, i.e. yesterday or tomorrow'. The grammaticalization of the suffixes has progressed to the point where they may co-occur with péplākā [..] On the other hand, the grammaticalization of oma, 'day before yesterday', and lama, 'day after tomorrow', has not yet progressed to the stage where they may co-occur with sūsūómá, 'two days removed, i.e. the day before yesterday or the day after tomorrow', [..]".

3.1.2 Aspects

The following is by no means intended to present an exhaustive treatment of aspects. It is rather a very sketchy discussion on the channels of grammaticalization that are characteristic of the evolution of aspect markers. Exemplification will be confined to three kinds of aspects: progressive/imperfective, perfective, and habitual.

While tense markers may evolve through different channels (see 3.1.3 below), there appears to be only one source for aspect markers: they originate from main verbs and are introduced by means of periphrastic constructions.

3.1.2.1 Progressive/imcomplete

According to Blansitt (1975: 14), progressive markers derive essentially from four types of verbs

- (1) copulas,
- (2) motional or postural verbs,
- (3) pro-verbs like 'do', and
- (4) progressive auxiliary verbs whose full lexical origin is unknown.

This ordering reflects a decreasing frequency of occurrence: while (1) is found more frequently than all the others combined, (3) is uncommon, and (4) very rare (Blansitt, loc. cit.).

These observations apply largely, though not entirely, to African languages as well.

Copulas in fact form the most common source of progressive, incomplete aspects in African languages. It can be demonstrated that the use of copulas may lead to both NP- and PP-periphrasis by comparing two different dialects of one and the same language: in western Ewe, which forms the basis of Standard Ewe, the progressive aspect is based on PP-periphrasis, while in the Anexo dialect of Ewe NP-periphrasis is involved:

Ewe-Anexo mu-le sɔ-e 'I am carrying it'
(I-be carry-it)

Standard-Ewe me-le é-kpɔ́-ń (← *me-le é-kpɔ́ me)
(I-be him-see-PROG) (I-be him-see inside)

PP-periphrasis suggests that the source of grammaticalization was a locative copula ('be at'). In Igbo (Lord 1973: 278), there is an incompletive aspect marker ná which, according to Welmers, is related to a locative verb that can be reconstructed as *ná 'be at'.

Similarly, in Yoruba the incompletive marker ń appears to go back to a locative verb which today is represented (1) in the locative preposition-like particle ní and (2) in the verb ní 'have, possess, be at' (Lord 1973: 276-278).

In Maninka (Spears 1972: 15/6), the copula yé followed by a locative PP consisting of a nominalized verb plus postposition ('at') serves to form a 'progressive or durative aspect', e.g.

a yé nà lá 'He is (at) coming.'
(he is come at)

Compare the structurally equivalent construction

a yé bòn ` lá 'He is in the house.'

Comparable constructions occur in Kuranko, Bambara and Dyula. In Maninka-kan, this structure often serves as the present tense. Mende uses the postposition ma in much the same manner as lá is used in the above example. The postposition in Mende has undergone Affixation (Migeod 1908; Innes 1969):

Present nya lo tewe-ma 'I am cutting'
(I-PRE be cut-on)

Past ngi ye tewe-ma 'I was cutting'
(I-PAS be cut-on)

Future I nga ye tewe-ma 'I shall be cutting'
(I-FUT be cut-on)

Similarly, in Bobo-Fing of the Southern Mande branch, the progressive aspect is formed with ti 'be' plus locative suffix -hô or -hû 'in' (Prost 1953: 20):

ma ti ya-hû Sya 'je suis en train d'aller à Bobo'.
(I be go-in Bobo)

Exactly the same construction is found in Bisa (Prost 1953: 20).

Postural and durative verbs form another important, though less common, source of progressive/incompletive aspect markers.

In Somali, the verb *hayn 'keep' has been the source of progressive aspects in some dialects (Lamberti, p.c.):

Standard Somali	<u>keen-ay-a(a)</u>	'I bring'
	(bring-keep-IMP)	
Dabarro dialect	<u>sheen-ow heeshə</u>	'I keep bringing'
	(bring-INF keep)	
Jiddu dialect	<u>jeel-aas-ta</u>	'you (pl.) are beating'
	(beat-keep-ye)	
Muduug dialect	<u>kari-n hay-s-ay</u>	'you kept cooking'
	(cook-INF keep-you-PAST)	

In Acholi, a Western Nilotic language, the verb bedo 'stay, be, sit' became a marker of the continuous aspect, undergoing obligatory syllabic Erosion (\rightarrow be) and optional peripheral Erosion (\rightarrow e) (Crazzolaro 1955: 138; Bavin 1981: 3/4).

Apart from these types of verbs, a large variety of other verbs are used in African languages to form progressive aspects, e.g. action verbs like 'seize'¹⁾ or 'say'²⁾.

1) In Mamvu, the verb pdɛ 'seize' is used to form a progressive/ingressive aspect (Vorbichler 1971: 247).

2) In Kanuri, the continuous aspect indicates (1) present

2) (cont.) actions, (2) habitual past, and (3) future actions (Lukas 1937: 35). Kanuri divides the verbs into two morpho-phonological classes: one that is relatively 'regular' and uses n̄in as its 1st p. sg. suffix, and another that is highly irregular which uses skin as its 1st p. sg. suffix.

While the lexical origin of the skin paradigm is unknown, the n̄in paradigm is derived from the verb 'say, think' which is still used. Compare the following conjugational sets (Lukas 1937: 36; 48):

Sg 1	<u>wû-n̄in</u>	'I am looking	<u>n̄in</u>	'I am saying, think-
2	<u>wû-n̄amin</u>	at'	<u>n̄amin</u>	ing'
3	<u>wû-j̄in</u>		<u>shin</u>	
Pl 1	<u>wû-nyèn</u>		<u>nyen</u>	
2	<u>wû-n̄awi</u>		<u>n̄awi</u>	
3	<u>wû-zài</u>		<u>sai</u>	

Different verbal sources may be used for distinguishing tenses in aspects. Not uncommon, for example, is the use of the copula for present progressives and of postural verbs for past progressive aspects.

In Ewe, le 'to be (somewhere)' has become the present tense marker of the progressive (-m) and ingressive (-gé) aspects. For the non-present forms of these aspects, however, the auxiliary is derived from the verb nɔ 'to stay, remain, live':

<u>me-le yi-yi-m</u> (I-be go-go PROG)	<u>me-le yi-yi gé</u>
'I am going'	'I am about to go'
<u>me-nɔ yi-yi-m</u> (I-stay go-go PROG)	<u>me-nɔ yi-yi gé</u>
'I was going'	'I was about to go'.

Similarly in Diola Fogy (Sapir 1965: 46) the copula -em is employed for the present, as well as future and past perfect, progressive. Past progressives are formed, however, with the verb lakɔ 'to sit, stay'.

In Umbundu (Valente 1964: 281), the copulas kasi and li followed by the comitative preposition la ~ l' plus a verbal noun consisting of the infinitive prefix oku- and the verb stem, are used to form the present progressive:

tu-li l' oku-lya 'we are eating'.
(we-be with INF-eat)

For the past progressive, however, the suppletive verb kala, derived from the Proto-Bantu verb *kàda 'sit, dwell', is used:

wa-kala l' oku-papala 'he was playing'.

(Quoted from Blansitt 1975: 24)

kala is also used as a past tense copula:

wa-kala k' epya 'he was in the country'.

Furthermore, in Mamvu (Vorbichler 1971: 248-250), there is the copula a which is used for the present progressive, but the postural ('durative') verb taju 'sit, live, stay' is used for the past progressive aspect:

Present progressive/volitive

òro' ma` (<òro-ná ma) 'I am going, I want to go'
(go-I be)

Past progressive

òòε mu-taju 'I was dancing'
(dance I-sit)

or mu-taju òòε.

Serialization and nominal periphrasis are not mutually exclusive (see 3.1.2); not uncommonly, a language may employ both as optional variants to form progressive/incomplete aspects.

This is the case, for example, in Ngambay-Moundou (Vandame 1963: 94-96). The progressive is formed with the postural verbs ísí 'sit' and ár 'stand'. The main verb is used either in a serializing, finite, form (1) or in a nominalized form involving PP-periphrasis (2). In the latter case, the purposive preposition mbā ('pour') and the verbal nominalizer k- are employed:

(1) Serialization

m-ísí m-úsā dā or m-ár m-úsā dā
(I-sit I-eat meat) (I-stand I-eat meat)
'I am eating meat'

(2) PP-periphrasis

m-ísí mbā k-úsā dā or m-ár mbā k-úsā dā
(I-sit for NOM-eat meat) (I-stand for NOM-eat meat)
'I am eating meat'

(quoted from Blansitt 1975: 27).

3.1.2.2 Perfective

Perfect aspects are almost universally derived from main verbs meaning 'finish, be finished/completed'. For an example of the recursive use of such a main verb, see 2.1.2.

In Duala (Ittmann 1939: 94), an aspect called "verstärktes Perfektum" by Ittmann is formed by means of the prefix má- plus main verb in its infinitive form, e.g.

di má-nángânɛ mulêdî
(we PER-say-good-bye teacher)

'we have already said farewell to the teacher'.

The prefix má- is derived from an obsolete verb mâ 'to complete'.

In Bari, an Eastern Nilotic language, there is a defective intransitive verb -jo 'to be complete, enough' which was the source of the pluperfect markers -jo and -je. These aspect markers are obligatorily preceded by the past tense marker a-, which is likely to originate from the copula a, e.g.

nan a-je kɔn I had done it'
or nan a-jo kɔn
I PAST-PLU do) (Spagnolo 1933:105).

It seems noteworthy, that verbals denoting 'finish, be finished/completed' tend to be desemanticized as 'serial verbs' rather than as auxiliaries. This accounts for their unusual position in, for example, Ewe, Sango, and Proto-Bantu (*gid) after the main verb, whereas the position of the auxiliary is before the main verb, e.g.

Ewe vɔ 'be finished': é-ɖu nú vɔ 'he has eaten'
(he-eat thing finish)

Sango awe 'it is finished': fadesó mbi ɕa va awe
(now I record finished)
'Now I have recorded completely.'
(Samarin 1967: 160)

Note that the perfect marker may develop into a tense marker, namely a past tense marker. This seems to have happened in the Ewe "dialect of Dahome", where the verb kɔ 'be, have finished' is nowadays used as a past tense marker:

m-kɔ-sa 'I sold'
(I-finish-sell) (Westermann 1907: 139).

A somewhat odd source of a past perfect/pluperfect aspect is found in Acholi. Crazzolara (1955: 124) notes:

"To indicate that an action had been completed before another was commenced, the Past tense of the verb nòŋò 'to find', i.e. òŋò 'it was found', followed by a verb in the Past or Present tense is employed. [...]

òŋò gĩ-ryè mè wóko, cí dɔ̀k à-dwogó à-nòŋò en paáco
(PLUP they-drive out, but again I-return I-find him home)

'He had been driven away, but, when I came back, I found him a home.'

3.1.2.3 Habitual

Habitual aspects, similar to progressive aspects, tend to go back to "durative" verbs like 'stay', 'live, exist', or 'remain'.

Ewe-Anexo nɔ 'remain, stay': m-nɔ-sa 'I (habitually) sell'
(I-stay-sell)

St.-Ewe nɔ 'remain, stay': me-yi-na 'I (habitually) go'
> -(n)a HABIT (I-go-stay)

But a copula verb may also serve as the source of habitual aspects.

In Sango (Samarin 1967: 155), the copula ɛke 'to be' preceding all other verbs except de 'to remain' is used to form incomplete or habitual actions¹⁾:

lo ke te kóbe 'he is eating'
(he is eat food)

In Yatye (Stahlke 1970: 65), the verb aga 'wander' has been desemanticized as a habitual auxiliary in serial construction.

1) Samarin notes that in the speech of town folk, the distinctive feature of ɛke (incomplete action) seems to be weakened. Furthermore, ɛke is 'very weakly articulated' preceding other verbs (Samarin 1967: 155/6).

3.1.3 Tenses

The following discussion on tenses, similar to that on aspects (3.1.2) is confined to one question: the lexical origin of tense markers. Only two categories, past and future, are considered.

There is one primary channel for the development of verbal tenses: They originate from main verbs through auxiliaries in periphrastic constructions. This development can lead straight from main verb to tense marker or, alternatively, it may go through an intermediate stage where the relevant unit serves as an aspect marker before becoming a tense marker.

Furthermore, there are two secondary channels for the evolution of verbal tenses:

(1) Serial periphrasis

They may originate from verb-verb constructions where one of the serialized verbs is desemantized and becomes a tense marker (see 3.1.2).

(2) Adverbial channel

They may originate from adverbs. Note that the adverbial channel is very rarely made use of. Nevertheless, contrary to claims made by other authors (cf. Givón 1979: 219), there is sufficient evidence to suggest that it tends to be used in addition to the verbal channel.

3.1.3.1 Past

The most common source of past tense markers in African languages are motional verbs like 'come', as well as copula verbs.

Teso, an Eastern Nilotic language, has chosen the verb -bu/-potu 'come' to form a past tense (cf. 2.3). Similarly, in Jiddu, a Somali dialect, the near past is formed with a cliticized form of the verb -ooku 'come', and the pluper-

perfect with the past tense form of this verb -ooti 'came' (Lamberti, p.c.).

Standard-Swahili on the other hand, has grammaticalized the copula li to a past tense marker:

a-li-ye mwalimu 'he who is a teacher'
(he-be-REL teacher)

a-li-kwenda 'he went'.
(he-PAST-go)

Much the same development appears to have taken place in Bari, an Eastern Nilotic language. There is a copula a, e.g.

kömirú a gworón 'The lion is a wild beast.'
(lion COP beast)

kare a duma 'The river is big.'
(river COP big)

This copula seems to have been prefixed to the verb as a past tense marker:

nan kən 'I do' : nan a-kən 'I did'
(I do) (I PAST-do)

(Spagnolo 1933: 101-103).

The verb kɔ 'be/have finished' in the "Dahome dialect" of Ewe (Westermann 1907: 139) appears to first have developed into a perfect marker, before it became a past marker, e.g.

m-kɔ-sa 'I sold'.
(I-PAST-sell)

Adverbs form a secondary channel for the emergence of past tense markers.

In Luo, the temporal adverbs nende 'earlier the same day' and nene 'some considerable time ago' were desemanticized as past tense markers n(e)-, after having undergone Permutation, Erosion and Affixation (Stafford 1967: 27/8), and in Lotuko the adverb dwo 'shortly afterwards' developed into a near past tense marker (Muratori 1938: 161 ff).

3.1.3.2 Future

The most common source of future markers are verbs of motion ('come', 'go', etc.), and volitive or desiderative verbs (e.g. 'want'; cf. Ultan 1978: 110-104).

In Standard-Ewe the future marker â- is derived from the verb vâ 'come':

m-â-yi (← *me-vâ-yi) 'I shall go'
(I-FUT-go) (I-come-go)

(Westermann 1907: 65).

The same applies to Acholi and Lango:

Acholi bino 'come': an a-bi-camo (← *an-a-bino-camo)
(I I-FUT-eat)
'I will eat'

Lango bino 'come': an a-bino cammo 'I will eat'.
(I I-FUT eat)

In Swahili, the volitive verb -taka 'want' is the lexical source of the future marker -ta:

a-taka-ye-kwenda 'he who will go'
(he-FUT-REL-go)

ni-ta-kwenda 'I shall go'.
(I-FUT-go)

Marchese (1978: 123-125) reports that in the Western Kru languages Klae, Bassa, Wobé, Dewoin, Grebo, and Tépo the verb 'go' has developed into a near future marker, while in other Kru languages such as Neyo, Godié, Koyo, Bété, Dida, but also in Tépo, the verb 'come' has been the source of a potential, or remote future marker. Furthermore, in the Eastern Kru languages, the verb 'have' appears to have given rise to a near future, volitive or hortative marker.

Lotuko, an Eastern Nilotic language, uses two verbs of motion to form future tenses (Muratori 1938: 161 ff), the main verb being used in the infinitive:

Derived from:

a-ttu nI lEtEn 'I'll leave imme- 'tuna 'to come'
(I-come I go) diately'

a-lO nI coxuno ' I'll return imme- lEtEn 'to go'
(I-go I return) diately'

Similarly, in Duala, a Bantu language of Cameroon, there are two verbs of motion which are used to form future tenses (Ittmann 1939: 93-95):

(1) -ya (< ya 'come') immediate future, e.g.

a mà-yǎ nanga wásé 'he will lie down right now'
(he PRES-FUT lie ground)

(2) -EndÉ + infinitive (< *EndE 'go' (obsolete)) future, e.g.

bá m-EndÉ janda 'they will buy'.
(they PRES-FUT buy)

In Mamvu of Central Sudanic, the future is formed by a construction verbal noun + ibu, the latter being derived from a defective verb ibu 'do' (Vorbichler 1971: 249), e.g.

tùfu mibu 'I shall tear down'.
(tear I-FUT)

Adverbs form a secondary source of future markers. In Sango, fadé (← fadé 'quickly; cf. fadesó 'now') is placed before the subject as a future marker:

fadé lo kúi bíaní 'He will really die.'
(FUT he die truly)

(Samarin 1967: 154; 80)

In Bari, an Eastern Nilotic language, the adverb dé 'then, afterwards' was desemanticized as a future marker. Since tense markers are placed between subject and verb, while adverbs occur sentence-initially, or sentence-finally, Desemanticization was followed by Permutation. Compare the following sentences (Spagnolo 1933: 105/6):

dé nan kɔn ... : nan dé kɔn ...
(then I do) (I FUT do)

'I do ... then' 'I shall do ...'

There is a second future marker kɔ́ in Bari which is also derived from an adverb (kɔ́ 'actually'):

nan kɔ́ kɔn 'I shall do ...' ("future of obligation").

3.1.4 Some general observations

The three channels presented in 3.1.1 form the main ways in which tense and aspect markers develop in African languages. The next question to be considered is: Are there any criteria underlying the choice of a particular channel? Is it possible to relate each channel to a specific function or range of functions, or to specific morphosyntactic factors?

In Ewe, the verb nɔ 'sit, stay' has given rise to both nominal and serial periphrasis, leading, however, to differing functions in each case: while nominal periphrasis was responsible for the growth of a past tense progressive/ingressive marker, serialization gave rise to a habitual marker:

Nominal channel

me nɔ nú ɖu-ń
(I stay thing eat-PROG)

'I was eating'

Serial channel

me-ɖu-a nú (← *me ɖu nɔ nú)
(I-eat-HAB thing)

'I (habitually) eat'.

One possible factor that determines the choice between the nominal and the serial channel can be seen in the valency structure of the verb that develops into a tense or aspect marker. Our observations suggest that verbs which obligatorily require a nominal or adverbial complement lead to the emergence of nominal periphrasis, once they are desemantized to tense-aspect markers. The obligatory complement in this case is reanalysed as an NP, represented by a nominalized form of the main verb.

In this way, the locative copula le requires a (locative) adverbial complement in Ewe, e.g.

<u>kofi le xɔ me</u>	⁺ <u>kofi le</u> ¹⁾
(Kofi be house in)	(Kofi is)
'Kofi is in the house.'	

Hence when le was desemanticized to a progressive /ingressive aspect marker, it gave rise to nominal periphrasis. The Ewe verb vɔ 'be finished', on the other hand, does not allow an NP complement:

é-vɔ 'it is finished'.

Accordingly, vɔ triggered serial periphrasis once it developed into a completive aspect marker:

é-yi vɔ 'he has gone'.
(he go be-finished)

There seem to be a number of counter-examples to this hypothesis in various languages, suggesting, for example, that one and the same verb may lead both to nominal and to serial periphrasis. We have cited in this connection the case of the Ewe verb nɔ 'sit, stay', which was desemanticized both as a past tense progressive/ingressive marker through the nominal channel and as a habitual marker through the serial channel (see above).

Although we are not able to satisfactorily account for this fact, there is one possible explanation: it seems that it is those verbs which may, but need not take a verbal complement that are open to both channels. In other words: the fact that a verb has been desemanticized through two different channels would suggest that, at the time Desemanticization took place, the relevant verb was used both with and without complement, i.e. the verb had at least two valency readings.

1) In some Ewe dialects, this is an acceptable clause meaning 'Kofi exists'.

Another factor that may be responsible for the choice of a particular channel has been hinted at repeatedly in the previous sections: there is a certain correlation between the channel chosen and the grammatical function to be expressed. This correlation is most pronounced in the case of the adverbial channel: as far as our data suggest, this channel is used only to develop tense markers, rather than aspect markers, and the only tense markers found are future and past markers.

Serial periphrasis, on the other hand, appears to be responsible for the emergence of aspect markers, but not of tense markers. The few counter-examples that we were able to find might turn out to involve tenses which are derived from aspects, e.g. past markers from perfect aspects or present markers from progressive aspects. More research is needed on this point.

There are, however, other data which suggest that nominal and serial periphrasis are used as equivalent techniques in many languages. In So, a Kuliak language of Eastern Uganda, for example, both techniques can be employed after modal verbs without apparent difference in meaning:

Nominal periphrasis

cám-I(s)a gá-Úg éù. 'I want to go home.'
(want-I go-INF home)

Serial periphrasis

cám-I(s)a mɔ-gá-sa éù. "
(want-I NAR-go-I home)

We have also noted that in Diola Fogy both channels lead to the emergence of a past progressive aspect (Sapir 1965: 46; see 3.1.2 above). More examples of this kind could be added.

3.2 Verbal derivative extensions

The majority of African languages have a number of productive verbal affixes or extensions whose main function is to modify the semantic and/or syntactic content of the verb root. Although there are some areas, like the West African coastal belt, where hardly any derivative affixes are found, they nevertheless occur in all major parts of Africa and in all language families. Guthrie (1971: 144) lists 19 starred verbal extensions for Bantu, and Voeltz (1977) has reconstructed the following ten extensions for Proto-Niger-Congo:

* <u>de</u>	Applied	* <u>to</u>	Reversive
* <u>ci</u>	Causative	* <u>ko</u>	Reversive-stative
* <u>ti</u>	Causative	* <u>ke</u>	Stative
* <u>ta</u>	Contactive	* <u>ma</u>	Stative
* <u>o</u>	Passive	* <u>na</u>	Reciprocal

In the present section an attempt is made to determine the origin of verbal extensions in African languages. A similar attempt has been made by Givón (1971; 1975) with reference to Bantu verbal extensions.

Givón argues that in the "pre-Bantu" period the basic word order was SOV, i.e. verb-final, the complement sentence being placed to the left of the verb in the higher sentence. According to him, the present extensions developed when the verb in the higher sentence became affixed to the verb of the lower sentence and developed into a productive derivative suffix. This implies that the Bantu verb extensions evolved in much the same way as tense-aspect markers, that is via periphrasis involving verbal auxiliaries as higher verbs.

The point we wish to make here is that the evolution of verb extensions sharply contrasts to that of tense-aspect markers. This is suggested in particular by their differing morphological status: the former are grammaticalized as derivative affixes, the latter as inflections¹⁾.

The following account has in common with that of Givón the fact that it rests on an extremely weak empirical basis. Sufficient diachronic information to allow for generalizations is available for only a small number of verbal extensions. The findings presented should therefore be considered as highly tentative.

The most common source of verbal derivative extensions are either adpositions or verbs. It can be seen from Kxoe, a Central Khoisan language (Köhler 1981: 503 ff) that a language can make use of both channels simultaneously to develop verbal derivative structures.

The following derivative suffixes of Kxoe are derived from verbs:

Derivative suffix		Verbal source	Example
- <u>éi</u>	continuous-intensive	<u>éi</u> 'to remain'	//oàbà-ná-éi-yé-tè (cover-junc-SUFF-junc-TENSE) 'she covers it well/solidly'
- <u>má</u>	applicative	<u>má</u> ¹ 'to give, offer'	djà(o)-ró-má-à-tè tí 'à (work-junc-SUFF-junc-TENSE I ACC) 'he works for me'
- <u>xú</u>	terminative	<u>xú</u> ^v 'to abandon, loosen'	kx'ó-ró-xú 'è (eat(meat)-junc-SUFF-IMPER) 'finish the meat!'

Derivative suffixes derived from postpositions are in particular:

1) It is not always possible to trace a clear-cut boundary between the two. For example, passive or perfective markers may combine the feature of both derivative and inflectional affixes (cf. Voeltz 1977: 1). Only unambiguous cases of verb derivation will be considered in this section.

Derivative suffix	Postpositional source	Example
-/xoà comitative	/xoà 'with' (comit.)	djǎo-/xoà-à-tè (work-SUFF-junc-TENSE) 'he collaborates'
-'ò directional	'ò 'at' (Fr. chez)	táo-'ò-wà-tè (pound-SUFF-junc-TENSE) 'she pounds there'
-kà causative	kà 'with' (in- str.), 'to- ward'	djǎo-kà-à-tè (work-SUFF-junc-TENSE) 'he causes to work'.

Note that the two differ in their grammatical behaviour: while the deverbal derivatives are attached to the main verb in its inflected form (with junction), postpositional derivatives are suffixed immediately to the verb.

One of the most likely adpositions to undergo verbal attraction and to become a verbal derivative extension is the comitative preposition ('with').

We have seen above that in Kxoe the comitative preposition /xoà has given rise to the comitative derivative suffix -/xoà. Similarly, the Proto-Bantu comitative preposition *na has repeatedly been cliticized as a verbal suffix to form comitative or reciprocal derivations.

The mechanics of the evolution from verb or adposition to verbal derivative extension are still largely unclear: On a superficial view it would seem that the process involved is Affixation: a verb or adposition turns into a verbal affix and assumes derivative function. An example is offered by the Western Nilotic Luo language (Stafford 1967: 16/7), where the dative/benefactive preposition *ni* 'to, for' is suffixed to the verb if followed by a personal pronoun:

o-kelo-n(i)-a kitabu. 'He brings me a book.'
(he-bring-DAT-me book)

Similarly, in Shilluk, the preposition ye (yi), used after passive verbs to introduce the AGENT, optionally turns into a verbal suffix -i:

dyel a-cam ye uthwon 'A sheep has been eaten by the
(sheep PAST-eat by hyena) hyena.'

or dyel a-cam-i uthwon

(Kohnen 1933: 136)

However, it is unlikely that such an interpretation does in fact account for the growth of verbal derivative extensions. An alternative analysis is suggested by the evolution of verb-verb compounds in Igbo (Lord 1975). It would seem that, on the basis of Lord's data, we may distinguish between the following four types of compounds:

Type I: These compounds consist of an action verb (V_1) plus an action or stative verb (V_2). Within such compounds, the first verb indicates an action while the second indicates the goal or result of that action. These compounds may receive either a causative (1) or a same-subject interpretation (2):

- (1) tú 'throw' + fù 'be lost' → tú-fù 'throw away, discard, lose'
- (2) gbá 'run' + fù 'be lost' → gbá-fù 'run away, escape'.

Type II: While V_2 in the above compounds also occurs as an independent verb, there are other cases which Lord (1975: 30) refers to as verb-suffix compounds. The behaviour of the relevant suffixes, or at least of most of them, suggests that they, as well, go back to verbs which have undergone Desemanticization¹⁾:

1) This process has not yet been completed since most suffixes have retained some semantic features.

- (i) They behave syntactically in the same way as V_2 components,
- (ii) they also have either causative or same subject-interpretation,
- (iii) they also have a resultative meaning, and
- (iv) for a number of them there still exist "homophonous verbs, or phonologically similar verbs, with related meanings" (Lord 1975: 30), e.g.

Suffix		Verb
- <u>ká</u>	'apart, asunder'	<u>ká</u> 'be torn'
- <u>lù</u>	'be spoiled'	<u>lù</u> 'be faulty, defective'
- <u>cá</u>	'be finished'	<u>cá</u> 'be ripe'.

Type III: Compounds of this type have a meaning which cannot immediately be derived from that of their constituent parts. Lord (1975: 41) notes, for example, that the meaning of the compound kà-sà 'complain' is not fully predictable from that of its components kà 'say' and sà 'answer'. We may say that such verbs have undergone Merger¹⁾ (see 1.2.3.4).

Type IV: Finally, there are some verbs which are likely to go back to verb-verb compounds as well but "are not relatable to entries for any component verbs or suffixes which might provide clues as to their meanings" (Lord 1975: 42). Examples are:

gùzò 'stand still'
gósí 'show'.

A diachronic interpretation of these verbs does not seem possible due to lack of additional information. Assuming that they in fact go back to verb-verb compounds, Loss of the

1) The examples provided by Lord suggest that we may have to distinguish between cases of 'weak Merger' and 'complete Merger'.

original component verbs would appear to be the most plausible hypothesis, but Merger as well as other processes may have been involved as well.

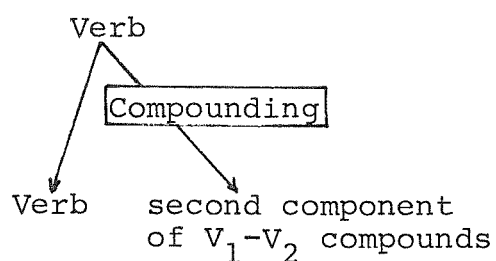
The above is a highly simplified account of the diachronic implications of Igbo verb-verb compounds. In many cases it is not possible to unambiguously relate a given compound to a specific type of grammaticalization. The case of the verb gbú 'cut, kill' is typical in this respect. This verb has been desemanticized as a suffix meaning 'decisively' or 'to an extreme end'. With some verbs, however, it has undergone Merger (cf. Lord 1975: 42), e.g.

mé 'do, make' + gbú → mé-gbú 'oppress'
zú 'buy' + gbú → zú-gbú 'cheat in marketing'.

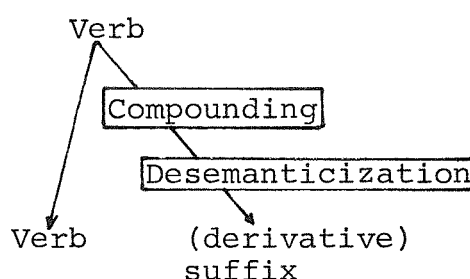
Furthermore, there are cases where it is difficult to decide whether Desemanticization or Merger is involved.

We may nevertheless assume that the above typology roughly holds for the majority of verb-verb compounds in Igbo. The evolution of these types can be represented graphically in the following way (considering only the second component (V_2)):

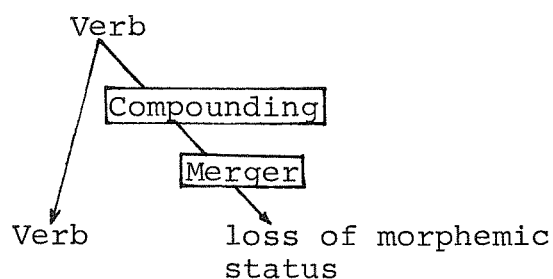
Type I



Type II



Type III



It is type II compounds which are immediately relevant to our discussion: the second component verb comes to be associated with one specific function like MOTION TOWARDS, REPETITION, BENEFACTIVE, COMPLETIVE, or DISTRIBUTIVE (cf. Lord 1975: 45; Carrell 1970). It develops into a productive unit of word-formation in that it can be used with any action verb (V_1), as is the case in Igbo, and eventually becomes a derivative affix.

It would seem plausible that verbal extensions going back to adpositions or adverbs tend to have a similar evolution: after a stage of Compounding they are desemantized and develop into productive affixes whose function is to modify the basic meaning of the verb, as we noticed in Kxoe, for example.

3.3 Inflection vs derivation

The above discourse suggests that there are at least two contrasting patterns through which verbal morphology is acquired. Section 3.1 contains a sketchy discussion on the evolution of tense-aspect marking, leading to the emergence of a certain type of verbal *i n f l e c t i o n s*. Section 3.2 was concerned with verbal *d e r i v a t i o n*: grammaticalization had the effect of introducing derivative, rather than inflectional affixes. The question with which we are concerned in the present section is: Are there any factors which allow us to predict under what circumstances verbal inflection, as opposed to verbal derivation, develops, and vice versa?

One possible factor can be ruled out from the beginning: it is not the lexical origin which determines whether a given linguistic unit develops into a verbal inflectional or derivative affix. We have been able to demonstrate above, for example, that both types of affixes may be derived from verbs. More strikingly, it may be one and the same verb which is responsible for verbal inflection on the one hand and for verbal derivation on the other. In So (Tepes), a Kuliak language of eastern Uganda, the verb ac- 'come' has given rise (1) to the future prefix a-, e.g.

a-ísa tí ír 'I shall own a house'
(FUT-I have house)

and (2) to the productive derivative suffix -ac venitive ('movement towards speaker'), e.g.

bus-u 'go up' : bús-ac 'come up'.
(move-ANDATIVE) (move-VENITIVE)

Similarly, in Bari (Spagnolo 1933: 181/182), the verb tu 'to go' has become an auxiliary/proclitic to denote future tense:

nan ti 'tu gwɔja 'I shall not (go to) dance'.
(I NEG FUT dance)

Independently of this, it has developed into a verbal derivative suffix with limited productivity "giving the idea of motion" (Spagnolo 1933: 182):

<u>waran</u> 'to dawn'	:	<u>war-tu</u> 'to go at the rising sun or moon'
<u>'dambu</u> 'to be a vagabond'	:	<u>'dam-tu</u> 'to wander aimlessly'
<u>lam</u> 'to jump'	:	<u>lam-tu</u> 'to progress by jumps'
<u>gwöngu</u> 'to be on all fours'	:	<u>gwön-tu</u> 'to walk on all fours'.

On the basis of the above examples, a noteworthy observation can be made: tense marking, leading to inflectional morphology, precedes the verb, while derivative extensions follow it. It can be seen that this is no coincidence by looking at a larger sample of African languages: tense-aspect inflections and derivative affixes each tend to be placed at opposite ends of the verb root. Which of the two precedes and which follows is largely dependent on the basic word order of the relevant languages. Thus type D (i.e. "strict SOV") languages are likely to have tense-aspect morphemes after but derivational morphemes before the verb root, while all other types usually show the opposite order¹.

¹ Observations like these are of a statistical nature. Although it is easy to find counter-examples among the many African languages, the generalizations proposed nevertheless hold for most of these languages. For instance, according to a survey on word order in 300 African languages, 85 p.c. of all type D languages, but only 13 p.c. of all non-D languages, were found to place their tense markers after the verb (Heine 1976: 44).

Their evolution suggests that tense-aspect markers tend to follow the verb in type D languages but to precede it in any of the other types, for in both serial and nominal periphrasis, which form the main channels of grammaticalization, they arise from auxiliary verbs, whose position is before the main verb in all language types except D, with D showing the reversed order, i.e. main verb - auxiliary.

It is less easy to account for the position of derivative extensions. The most plausible explanation would be that their source constituent is analysed as an adverbial phrase. Adverbial phrases are placed before the verb in type D languages but after it in all other language types, and this in fact reflects the arrangement of most verbal extensions: they tend to precede the verb in D languages but follow it in all other types of languages¹. This explanation does not pose any problems with extensions going back to adpositions as they are part of the adverbial phrase. But even with extensions of verbal origin one might propose that verbs which came to acquire derivative status were interpreted as adverbial constituents through syntactic reanalysis (see 2.2.3): the sequence $V_1 - V_2$ was reanalyzed as $V_1 - Adv$ since the primary function of V_2 was to modify the semantic content of V_1 . This view is supported, for example, by Carrell's (1970) treatment of the "meaning modifying suffixes" in Igbo as adverbials. These suffixes go back to V_2 constituents in verb-verb compounds (cf. Lord 1975: 45; see also 3.2 above).

Assuming that this analysis is correct, we now notice an interesting correlation between the evolution of verbal morphology and dependency structure: tense-aspect inflections essentially go back to auxiliaries which govern main

¹ The Kxoe examples provided in 3.2 are a noteworthy exception in that Kxoe, which is a type D language, uses derivative suffixes.

verbs, while verbal derivative extensions are said to derive from adverbials, which are governed by main verbs. Thus, underlying the development of tense-aspect inflections, there is a structure like (1) while derivative extensions have an underlying structure like (2):

- | | | | |
|----------------------|-----------|---|-----------|
| (1) Constituents: | auxiliary | - | verb |
| Dependency relation: | governing | - | dependent |
| (2) Constituents: | verb | - | adverbial |
| Dependency relation: | governing | - | dependent |

It would be tempting to conclude from these observations that verbal inflections originate from categories which govern verbs, while derivative affixes go back to categories which are dependent on the verb. Yet such an hypothesis is easy to falsify: there are verbal inflections like person markers (e.g. subject or object affixes) which are derived from dependent categories of the verb.

But there is yet another observation which appears to be relevant to the question concerning the origin of inflection vs derivation. Our example of Igbo verb-verb compounds (see 3.2) suggests that it was Compounding which was responsible for the growth of derivative "meaning modifying suffixes". The evidence available suggests that the first process employed in the evolution of verbal derivative affixes is, in fact, Compounding: When a compound is formed, the intention is to create a new word by combining two (or even more) lexemes, where one lexeme carries the basic meaning while the other assumes a modifying function. Subsequently, there are three possible developments:

- (a) the compound remains what it is, i.e. no further process takes place,
- (b) the compound undergoes Merger: the meanings of its

components coalesce, the result being a new meaning which cannot immediately be derived from the combined meanings of the components involved, or

- (c) the modifying component combines with other lexical items as well and develops into a productive unit of word-formation. Once it is desemanticized, the outcome is a derivative affix.

According to this view, therefore, verbal derivation starts with Compounding followed by Desemanticization. This contrasts with the grammaticalization patterns characteristic of tense-aspect inflections. The auxiliary that eventually develops into a tense marker, for instance, is not intended to modify the meaning of the main verb, it rather serves to relate that meaning to deictic time. Thus, no Compounding is involved, but rather grammaticalization starts with the Desemanticization of a lexeme as a tense marker. Once the desemanticized unit undergoes Affixation, the result is a verbal inflection.

We noted above that tense-aspect morphology and verbal derivation tend to occur at opposite ends of the verb, and that this arrangement correlates with dependency structure: in type D languages, tense-aspect markers are likely to precede and derivative affixes to follow the verb while in non-D languages the reverse order prevails, suggesting that verbal morphology reflects the order dependent - governing in D languages but governing - dependent in non-D languages. The conclusion that emerges now is that it is the position of the constituent giving rise to grammaticalization, rather than dependency structure, that can be made responsible for this arrangement. Tense-aspect markers are likely to appear as suffixes in type D languages but as prefixes elsewhere, in accordance with the position of the auxiliary, which forms the main source of these markers. Similarly, adverbial constituents precede the verb in type D languages but follow it

in non-D languages. Assuming that our position on the adverbial origin of derivative affixes is correct we can predict that they will turn up as prefixes in type D languages but as suffixes in the languages of all other types.

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